Grantville Gazette-Volume VIII

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Capacity For Harm

by Richard Evans

Belfort, Franche Comté, 1633

"So, Herr Doctor Lebenenergie. You designed this yourself?"

"Not exactly, Commissioner Vaden." Tomas cursed himself for ever thinking that coming to Belfort would be profitable. He knew that Franche Comté was rife with witch hunts again, but he just needed some extra copper wire and plates for his second machine. Those could be made in Franche Comté.

"I met with some Americans a couple of years ago. I studied their books on electricity. While I was there, I saw them use a device that made that power available to them with a press of a button. They shocked a farmer back to life."

"Sorcery!"

"So I thought at first, sir. But it was nothing but a machine. I hied myself to this town they said they came from and just walked into their library and asked about these machines. I spent two months there." Tomas tried to sit up straighter but the bindings prevented it. "I watched their doctors use similar machines and finally came up with the theory that applying this power in varying amounts to the proper locations of the body, one could rebalance the ichors within and cure maladies. This was proved to me when I saw a movie called 'Frankenstein.' They laughed and called it 'fiction' and said it was a moral lesson about a man's*hubris* . The machines in that movie were well within what we could make right now.

"So I did." Tomas knew now what that movie had been trying to teach him, but now it was too late. His only recourse was to make himself useful to these witch hunters. Somehow. "I built my*Elektrischer Generator* from parts I found near Geneva and Upper Genoa. The lodestone was the most expensive piece."

"Lodestone? Explain." Someone just out of sight asked. Tomas felt someone moving up behind him.

"Continue, Herr Eichemann." The other Vaden waved the questioner back.

"Certain stones, when hung from a string or wire, will always have one side point to the North."

"Yes, those I know of," the elder Vaden interjected. "They are how the compasses on the ships work, gentlemen." He shook his head. "We know that is not sorcery. Nor are we here for that reason. I believe this is much simpler. Continue." The elder Vaden's cold, dead eyes compelled Tomas to obey.

Tomas Eichemann took time to gather his thoughts. He wasn't sure exactly what the two witch commissioners wanted with him. No one he knew of had accused him of being a warlock—that he knew of. The two men had just ridden out to his camp and invited him to attend them back in town. Invited him. With their guards present.

He should have left earlier in the day when he'd heard that there were people asking for the whereabouts of the traveling doctor and his magical device, the*Elektrischer Generator* . It was always safer to leave when people started asking questions. Twice before he had managed to flee other towns just ahead of the authorities. Small towns were the worst; nowhere to really hide. Especially to those who had good clean clothing, their own wagon with many strange devices hanging from its side, too. Jealousy or suspicion always resulted in the same thing. Someone had sold the information to someone else who knew someone who was in a position of authority.

But the smith had promised him that the copper plates for his capacitor and the wires for his two inductor coils would be ready that afternoon, no sooner.*I should have gone to Geneva instead. No one would have cared about one more traveling merchant there.*

The smith had delivered them as promised. Tomas had just managed to get a couple miles out of town and make camp when the two men with the wide-brimmed black hats and cloaks of official witch commissioners had appeared out of the dark. They hadn't been alone. Twenty guards on horse were with them. All were wearing the colors of the Bishop of Strassburg. They had called him by name. The invitation hadn't been one he could have refused and lived. The four mercenaries he'd hired to see him safely through the battle lines had laughed when he ordered them to protect him. Then the sorry bastards had faded into the nearby woods. Their laughs mocked him even now.

"Continue, Tomas Eichemann. Yes, we know your real name." The elder Vaden sneered at him. "But we will get back to why you have given yourself the new title and name, later. Tell us more about why you needed a lodestone."

"The stones have a power inside them that can push something called electrons. Those are particles that are too small to see. But when they are present in great numbers, we can see their results during a summer storm."

"This box makes lightnings?" The younger Vaden's eyebrows rose in disbelief.

"Of a sort. Water?" The heads shook from side to side. There would be no comforts until all their questions were answered. Tomas licked his dry lips. "When spun inside a coil of copper wire covered in lac, the lodestone—the magnet, as the Americans call it—pushes the particles in one direction. That creates flow of power. It acts like a water wheel in reverse, pushing electrons through the copper as if it were a channel. Or you could think of it as a pump pushing water through the pipe.

"When spun at the right speed it creates enough power in a small coil to make it magnetic, like the lodestone. The coil pulls a metal cylinder bound to a small spring and makes a contact under the lid. Just like a lodestone attracts metal filings or that nail that your brother has been playing with. This opens the circuit to let power flow from the smaller generator to a larger coil deeper inside the box. If the device is working, the two silver studs under that glass lid will throw small lightnings at each other. Then you throw that small lac covered lever there next to it to close a second circuit.

"This lets the small power created by the hand crank form a larger, more powerful, magnet to spin off the same gears, so you produce more energy for the same amount of work. This is because the second coil has more magnets, many pumps, or many water wheels, working together. These iron core magnets don't really spin this time though. This time it is the coils that spin." The older Vaden nodded his head and then looked to his younger brother who was standing by the box.

"Close the box, Brother." He turned back to Tomas. "Continue if you would, please." The friendly smile

wasn't forced at all and that scared him deeply. Tomas suddenly recalled prayers that he'd hadn't spoken in many a year.

"There are two taps, links to the coils, copper brushes that spin along the circular plates shown on the drawing. That lets the power go towards charging two plates of copper that have sheets of glass between them. They call that a capacitor. It stores the power until needed. To that is connected another coil, this time heavier copper wire wrapped around another iron core. This is hooked up to the lac covered wires that are attached to the proper locations of the body with clamps or leather cuffs with the contacts sewn into them, so that power can be applied. How much is dependant on how fast you spin the gear handle and how long you press the red button."

"I see. Like this?"

Tomas screamed. His body jerked against the leather straps binding him to the heavy wooden chair.

"Yes. Yes. But you shouldn't spin the handle so fast. Too much power will harm the patient." Tomas gasped a bit. "Too much power can burn them from the inside. If the patient has a weak heart, it can kill him. If the lightnings under the glass are large and constant, you can back off spinning it so fast." Tomas felt his voice break from his adopted instructor and doctor's persona. He knew it sounded like the desperate pleadings of a condemned man.

The two brothers looked at each other and smiled. "Indeed?"

Tomas grasped at a straw. "I have the body charts and shock tables in that map case. It's over by my pack. On the table." Tomas tried to nod, but could only flick his eyes in the proper direction.

"Ah. We shall study it most thoroughly, Dr Lebenenergie. Most thoroughly, indeed." The Vaden brothers had the most spine chilling smiles that Tomas had ever seen.

The older brother smiled again. He leaned forward and whispered into Tomas's ear. "Yes. I must thank you. With such a device, I do believe we can process more voluntary confessions per day. And we won't even leave a mark upon our charges. So the priests who feel that we are beating confessions out of the accused will have no grounds at all." The smile chilled Tomas to the core. "No grounds at all."

"That was most efficient, Commissioner Vaden. Very well done." Tomas eyes darted over to see who had spoken and locked his eyes on those of a local magistrate. "I told you, Antoine, these men are efficient in their work The two best lawyers I've ever met."

"Truly," answered another magistrate. Tomas couldn't quite identify him in the dim lighting. "Though I am more concerned that we got down all the pertinent details about the device. I believe that is the most important thing here."

From behind him Tomas Eichemann heard another voice, this one higher pitched. "I've got the information, sir."

Sweat began to roll down his forehead. What was really going on here? There were at least four other silent figures in the room. Tomas gathered his breath and looked up at them. "Am I to be charged as a warlock, then? Or am I free to go? I helped you as I said I would. I have done everything in my power to show you how to build your own*Elektrischer Generator* . I'll even help you build your own. As many as you need! But I don't see how a healing machine can help you in your Holy cause, commissioners. It is a machine to shock the body back into working right. I have many affidavits, witnessed and sealed, of

patients who've been cured by my machine."

"Yes. That you have. And we thank you so much for the neat lists of names you gave us. Many of them are very rich indeed. You sold them smaller versions for their own use, I see."

"Yes. But those won't last like this one. The magnetics will fail eventually, as will the soft metal gears. They only make minor shocks that stimulate the muscles and circulation. They will need me for full revitalizations, as they don't know how to do that. It is very good money. I could share it with you, make you partners perhaps?" Bribing commissioners was risky, but commonly accepted as necessary. Many of them were in the business more for the money than any real desire to do Holy work.

The younger Vaden turned to the small crowd behind him. "Gentlemen, he has voluntarily admitted that he's sold devices to many unsuspecting clients. Devices designed to fail."

The older Vaden smiled. Grimly. "As for the donations . . . That won't be necessary, Tomas. Though we do thank you for your donation . . ." Someone behind them coughed politely. ". . . offer."

The younger Vaden chuckled. "Yes, indeed. We can both use new boots. The roads here are simply atrocious, wouldn't you say, Brother?" Someone else chuckled.

"Yes." The older Vaden leaned down over Tomas and smiled. "As for your release . . . not just yet. We do need to see the full capacity of this machine, after all. As well . . ." He smiled. "We need to see which is stronger. The guilty soul of a self proclaimed doctor and admitted charlatan or that of a machine." He waved his hand to the hooded man who stood by the machine. The crank began to spin.

"I do believe you will find a comfortable place in Heaven, Tomas. Eventually."

The black gloved hand pressed the red button. And held it down.

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Flight 19 to Magdeburg

by Jose J. Clavell

Prologue

Living Room

Captain and Frau McIntosh's quarters
Formerly 1SGT and Mrs. Hudson's residence
Grantville, SoTF, USE
Spring 1635, 0955 hours local

Britt Strausswirt was bored. A day after being released from the Leahy Medical Center, she rested her badly sprained left ankle on the ottoman that her host's wife, Gertrude McIntosh, had thoughtfully provided before departing for the market. Her husband, Captain Peter McIntosh, had gone to work and Britt was glad. The executive officer for the Horse Marines was needed at his job on the headquarters of the second battalion at the old Hudson farm and not babysitting a lame gyrene. Their three children were at their schools, leaving her alone, bored and lonely for the first time since her release from the hospital.

Of course, Britt had tried to keep busy. So far this day she had written to her parents, sisters, brothers, and each of her friends in the nunnery, but without any mention of her mishap. Partly that was because Britt knew that they were already worried enough about her choice of careers, but mostly it was because she was still trying to come to terms with the accident herself.*Anything worse and it would have put a serious bind on my plans to die quietly in bed from old age* , she thought, darkly amused.

There was nothing to see on television, although she still found the uptime technology almost magical. However, being city-born and bred, she could not get interested in the farming news and tips programs that comprised the morning fare of the school TV station, although the one about hunting boars had been disgustingly fascinating. It was still too early in the day for movies. Those were shown later at night when families gathered after the day's work. She thought about doing some reading, but by this time, she had practically memorized her manuals, could quote Marine history as well as Corporal Wilson, and had perused the local paper cover to cover. Her eyes roamed the living room, looking for new material, and fixed onto a small magazine hiding under today's paper. The garish cover caught her attention, so she picked it up. The title,*Astounding Time Travel Tales* , made her smile. Robert, the McIntosh's oldest son, had, like many down-timers, fallen in love with the up-time genre of science fiction.

A quick examination showed that the stories were not the usual reprints of up-timer stories. Apparently, some of her contemporaries had decided to start writing their own. Britt smiled and shook her head at the notion, and started reading the first one. Its title, "Flight 19 to Magdeburg," and its aviation theme looked promising.

"Ouch!" Britt flinched. One look at the story and she had put her left foot down as she sat up in surprise. The pain that shot up from her ankle managed to take her mind from the homicidal thoughts running through it for a second. It didn't stop her from cussing, though. "Who the hell is this Jose J. Clavell and where I can find him to wring his neck?"

It was a rather rhetorical question in an empty house, but she felt somewhat mollified. After taking some pain medication, she leaned back and continued to read the story while trying not to grind her teeth, at least not much. At its conclusion, Britt couldn't deny that it was well written and that she had actually enjoyed it. She looked at the magazine again. "Oh, what the heck. But if I get my hands on this Clavell fellow, whoever he is. . . . Who's he trying to fool? Admiral 'Smith' and Lieutenant 'Strauss.' Sure."

Lawrence Wild Naval Air Facility, US Navy Yard

Magdeburg, Thuringia, USE
Early summer, 1634
1035 hours

John Chandler Smith was not a happy camper this morning. He and his chief of naval operations had been waiting by the side of the hard surfaced runway for the better part of half an hour. Colonel Jesse Wind, the chief of staff of the USE's fledging Air Force, was flying from Grantville to attend the first meeting of the combined chiefs of the armed forces. The meeting, long in the planning, was finally scheduled for early this afternoon.

Smith, as a courtesy to a fellow service chief, had decided to meet him at the airstrip. In truth, he also wanted an opportunity to talk to him in private before the meeting. That was a decision that he started to regret as he looked down at his very expensive and now one-of-a-kind wristwatch, confirming that Wind was already ten minutes late. At least the flash and thunder that had greeted his arrival to the strip was not the prelude to the summer thunderstorm that he had feared—though he still wondered about it since he couldn't see anything that could have caused it.

His aide-de-camp, Marine Second Lieutenant Brigitte Strauss, stood calmly by his side, a good counterpoint for his impatience. After a two-month association, he now knew that her outward calm was one of the intrinsic trademarks of her personality. That, and her bearing, which occasionally made him forget that she was not a product of the US Naval Academy at Annapolis like him, but one of the Marine's ninety-day wonders—albeit one of the better ones. Her calm and assurance also reminded him of his former aides, Eddie Cantrell and Larry Wild, and their endearing awkwardness.

As usual, a brief moment of grief tightened his throat as he thought about the two young men. He wished again that they could stand by his side once more. But, that was impossible. Larry had died at Wismar together with his one-seaman crew and Air Force Captain Hans Richter in what everyone now considered the first engagement in the new navy and air force history. It was an old-fashioned, great pyrrhic victory for both services that still smarted. Eddie barely survived but was now a POW in the Danish capitol. There, he was demonstrating a remarkable ingenuity by turning his situation around and becoming a valuable source of information, even under his captor's noses. A noteworthy feat, considering that he had lost his lower left leg during the battle.

As part of her duties as one of the Marine battalion's most junior officers, Brigitte served as the Airfield Officer of the Day, in addition to being his aide. Of course, for Brigitte in particular, that was not a problem. She was one of the most organized and capable officers that Smith had ever seen. And truthfully, being the AOD was not as imposing a task as the title might imply. The strip saw an average of one plane a week.

Smith suspected that she wouldn't have minded if there had been a hundred arrivals a day. Brigitte had been bitten hard by the flying bug after watching her first Belle fly overhead last autumn. He suspected that she probably had one or two hours of bootleg flying under her belt. Her interest had become one of the items he wanted to discuss with Wind before the meeting. Smith believed it was high time to start cycling a few selected naval personnel through the available flight training slots. Aviation support could be as important to naval operations as it was to land operations. In fact, he already had in mind his first candidate for training: Brigitte.

That last thought passed through his mind as Strauss received the report of the petty officer in charge of the smoke signals. Smith had ordered them lit after he was informed that Wind had allowed one of his

fledging aviators to navigate their flight all the way from Grantville. Hopefully, it would help them find their way. He found it commendable that the air force chief took any and every opportunity available for training, but he had started to wonder how long the colonel planned to let his surely lost-by-now eaglet wander around the countryside. So it was with great relief that he finally heard the sound of an engine in the distance.

Smith watched the growing dot in the sky and looked at his wristwatch again.*Only fifteen minutes late this time,* he thought. Wind's kids were improving every day and maybe someday in the far-distant future they would make passable aviators. Something strange in the rumbling of the engine made him look up again. The sound was strange, but achingly familiar. The sound wasn't like the lawnmower-engine buzz of the Belles or the growl of the more powerful Gustav. A memory from childhood hit him like a hammer as he finally recognized it. It was the sound of a radial engine and it was not alone. Stunned, he watched as the lone dot in the sky become four. As the dots grew nearer, they sprouted wings.

"It looks like the air force is planning a show, sir," a clearly delighted Strauss observed.

Smith looked down at her. Yes, that certainly made a heck of a lot more sense than what he had been thinking. "It looks like it, Lieutenant." He smiled before looking back at the approaching aircraft. "Funny that no planes other than Wind and his wingman were mentioned. In fact, Wind . . . wait a minute." Smith felt his jaw fall open as he saw the airplanes clearly for the first time. "THOSE ARE NOT OUR PLANES!"

Smith immediately regretted his outburst and just as quickly forgot about it. He stood speechless as his eyes took in a sight seemingly out of a World War II history book. His mind went automatically through the aircraft recognition chart that he memorized as a child so long ago. The mid wing, barrel fuselage with a large Wright radial, powered turret aft of the greenhouse canopy and large star-and-bars national emblem: an Avenger Torpedo Bomber. It was the same type of aircraft that his late Uncle Larry learned to fly in WWII, along with his best friend and wingman, Ensign George H. W. Bush.

The first Avenger turned onto final approach. The rest of the small formation followed closely on its tail as it descended, landing gear, tail hook, and flaps fully deployed, carrier style.*They must be running on fumes* , Smith thought as he watched them land with minimal intervals between planes.

*How in the world is it possible that I have these airplanes landing on my airstrip?*He began to put the pieces together in his mind, and suddenly he realized that the solution to one of aviation's greatest mysteries lay before his eyes.

Smith remembered a long-ago late-night conversation with his first-division CPO during his nugget cruise in the Caribbean. They had been leaning on the fantail, laughing and shooting the breeze while watching their destroyer's wake as they had done so many times before. After he made an idle inquiry about the Bermuda Triangle, Chief Hawkins had grown serious and after a moment's pause started telling him about the first of his many experiences in the area.

The Chief, then an eighteen-year-old Seaman Apprentice, had participated in the search for Flight 19 in late 1945. The five-plane Avenger formation had disappeared during a training bombing mission after reporting failure of their flight instruments and compasses. One of the aircraft participating in the search, a PBM Mariner flying boat, had also disappeared without a trace—another unexplained loss in the long history of disappearances that had made the whole area synonymous with mystery. At the time, Smith thought that Hawkins had been bullshitting him with tall tales but took it with the grace befitting a junior mariner learning at the feet of a master. After all, the Chief's lessons stood him well during his time in Viet Nam and provided good guidance even after the loss of his lower leg forced him to change the path of his

naval career and move onto the corporate ladder.

Anyway, the point was, Hawkins had told him that in their final transmission before disappearing, those ill-fated pilots had reported that they were low on fuel and preparing to ditch at sea. If these were the very same Avenger pilots, that would explain why they were landing in such a hurry. Smith looked on with admiration at their flying skills.*Wind would kill to see his fledgling aviators exhibit a fraction of these talents,* he thought. As he continued to watch them go about the business of getting their aircraft down fast and in one piece, an idea started to bubble in the back of his mind and a smile creased his lips.

The petty officer got his work detail into action and with hand signals provided directions to the parking apron to the plane now leaving the active runway. Smith was glad that all their practice runs handling plane mock-ups and the occasional Air Force flight now paid dividends as other sailors jumped in to help. The availability of trained ground crews was one of the selling points that he had planned to use on Wind to get him to assign dedicated aircraft to Magdeburg under his control—that and the lengthening of the runway and other facilities.

However, his plans were for the much smaller Belles and Gustavs, not something as large as an Avenger. For a moment, Smith feared that the available parking area was not going to be able to take all the planes. But, as the lead aircraft approached the designated spot, the pilot must have seen the same problem. The Avenger wings started to rotate and fold along its fuselage, reminding a startled Smith that the plane was originally designed for the confined spaces of a carrier. The other pilots, imitating their leader's example, folded their wings as they followed the directions of the ground handlers to the remaining parking spots on the apron. Although the last one ended with his main port wheel too close to the edge of the hard surface for comfort, the process went beautifully.

John Smith smiled as their propellers finally came to a stop. In the relative quiet that followed, he took a second to ponder why he was not more surprised. He finally decided that after being whisked back in time to seventeenth-century Germany with a town full of hicks and that darn Stubbs, it would take a lot more to amaze him.

The Flight 19 men were now joining his lost-in-time crowd—misery does love company. Smith turned towards the wide-eyed lieutenant beside him. "Brigitte, please give my compliments to the flight commander, and would you ask him to join me here?"

As he expected, the young woman immediately recovered her usual aplomb. With a salute and a cheery "Aye, aye, Admiral," she departed to do his bidding. Her eyes fixated on the Avengers, glowing with a lust that would weaken young men's knees. Smiling, Smith figured she would find her way into a cockpit within the next thirty minutes.

Smith caught the moment when the seventeenth century met head on with the twentieth: Lieutenant Strauss snapping a salute to a taken-aback Marine aviator. The admiral shook his head at the sight and turned away to hide his grin, trying to decide which element of the surrounding scene the poor man was going to find the strangest: that the German, Swedish, and American soldiers, sailors, and yard workers were in a mixture of clothing both modern and antique, seemingly out of a museum, or that the pretty redhead in the camouflage utilities professed to be both a Marine officer and an admiral's aide.

He sobered up when he remembered their personal losses. Like all the citizens of Grantville and his son's wedding guests, the aviators had just lost everything that was familiar and dear to them and he would have to be the one to break the news. He sighed. That responsibility came with the job. Some things had not changed since his Viet Nam days.

Smith put that matter aside for the moment and watched Strauss lead the Marine captain in his direction. A navy lieutenant trailed a short distance behind. The aviator seemed pissed off with the whole situation and walked towards the admiral with an almost visible chip on his shoulder, and probably a seabag full of questions. However, he did a double take and slowed down as he saw the silver stars on Smith's collar.

Strauss made the introductions in unusually clear English, albeit with a slight German accent. "Admiral, may I present to you Captain Powers and Lieutenant Taylor? The lieutenant was the instructor pilot but the captain is the senior officer present."

Smith returned both men's salutes before shaking their hands. "Gentlemen, my name is John Smith. Allow me to welcome you to Wild NAF— no, make that Wild NAS—in Magdeburg. I am certain that you have tons of questions but before we start, I would like to know what happened to your fifth plane."

Obviously surprised at the question, Lieutenant Taylor replied, "Admiral, we were preparing to ditch at sea when there was a big flash and thunder and we found ourselves over land. They only had enough fuel left to belly-land in a field ten to fifteen minutes from here. We decided to keep going on, hoping to find an airfield. When we left the area, they were standing beside their aircraft. They were apparently unhurt, sir."

"I'm very glad to hear it, Lieutenant. We'll send a mounted rescue party out in the next thirty minutes and if any of you can ride, you are welcome to join and show them the way. Meanwhile, we are expecting some air support at any moment . . . and here they come." Smith pointed to the two growing dots on the horizon. He felt petty, but he could hardly wait to see Wind's face when he found out about the new 'naval assets.'

Fact was, Smith had decided at that moment that these aircraft and their crews were now naval, well, Marine property, and the idea in the back of his mind finally came to full fruition. He would not relinquish any control to the 'Air Farce,' Stubbs or no Stubbs, until he obtained a good deal in return. He had been planning to beg and cajole for aviation capabilities but now wondered how much more he would be able to get out of Wind in trade for parts of the unexpected bonanza. But that could wait—there was urgent business pending and some bad news to give.

"Gentlemen, I have an incredible tale to tell you but I would prefer if you gather all your men here first so I don't have to repeat myself."

"Sure thing, sir. We'll be back in a second." Powers saluted, then he and Taylor walked back to where the rest of their curious aircrews now waited.

"Admiral? Where did they come from if they are not part of our air force? What does all this mean, sir?" a confused Strauss asked.

Smith took a second to reply, enjoying the show on the runway. Wind and his wingman had stopped their aircraft in the middle of it and just stood there staring, unable to believe their eyes at the incredible sights that had taken their parking spaces on the apron. Smith shook his head once again, amused, before turning towards her. "What it means, Lieutenant, is that this is the beginning of Naval Aviation. How would you like to learn to fly?"

Her answering grin was all the answer he needed.

Epilogue

Living Room
Captain and Frau McIntosh's quarters
Grantville, SoTF, USE
Spring 1635, 1201 hours local

"Britt, dear, wake up. Are you well?"

Britt opened her eyes to see the concerned face of Gertrude McIntosh hovering over her, the bag full of groceries still in her hand. A quick glance at the mantelpiece clock showed that she had been asleep for two hours. "Sorry, Frau McIntosh. I took some of that pain medication they gave me at Leahy. I think I was out for a while—I never heard you come in."

"It's fine, child. You must rest, so you'll heal faster. Well, let me put this in the kitchen. Would you like a bite to eat, dear? You're just skin and bones—we need to fatten you up or you will never catch a good man's eye. I'll be back in a moment; just keep resting."

Before Britt could put two words together or object, her determined host marched towards the kitchen. Resigning herself to the inevitable, Britt sat up on the couch; the truth was that she was starting to felt hungry. She saw the magazine beside her on the couch and remembered her strange dream. It had seemed so real that she wished that she could fly one of the Avengers in the story, and she didn't need to be clairvoyant to know that her old boss, the admiral, would have loved to have had such an aircraft at his beck and call. She picked up the magazine and looked at the story again.*He got too many details right, the author has to be an up-timer.*

"I wonder who he could be?" Britt asked aloud.

Admiral Simpson's Office
Naval Headquarters, Magdeburg Navy Yard
Magdeburg, United States of Europe
Winter 1634, 1700 hours local

John Simpson looked up at the polite knock on his door to discover his chief yeoman, Dietrich Schwanhausser, calmly waiting for his attention.

"Admiral, I sent Metzger home and I am ready to go, too. The files, computers and safe are secured. Did you require anything else before I go, sir?"

Simpson smiled at his very efficient clerk. You would never know that the man's military administrative and naval experience had been essentially zero before he came to work for him. Now he set the example for the junior yeomen and clerks through both the naval service and the corps. "No, thank you, Senior Chief, I'm fine. I need to finish some memos before I head home myself, but I might stop at the Eagle, Globe, and Anchor for dinner. Don't worry about me, I make sure that I take a NCIS escort—have a good night, Dietrich."

"Good night, sir," Dietrich replied before closing the door.

Simpson finished the last of his pending reports and waited until he was sure that the senior chief had finally left for the day before opening the locked drawer in his desk—the one whose contents even Dietrich had never seen—and pulling out the package that he had received earlier that day. His publisher had sent him a copy of the finished first issue of their magazine and he delighted in his examination of the cover. He had been a science fiction fan all his life, and, after the Ring of Fire, he had been afraid that was over. He remembered fondly Larry's surprise and shock when he came to his rescue during that meeting with King Gustav Adolf a year ago, when the youngster had suggested Arthur C. Clarke's *Superiority* as a cautionary tale against relying on too-advanced technology.

When Simpson impulsively committed the Navy to paying for reprints of the story, he hadn't realized that he was introducing the entire genre to seventeenth-century readers. The transplanted Dutch printer and publisher that he hired to do the job had liked the material so much that he had offered to go into business with him. Their early efforts had been so successful that the profits were paying for the entire navy and Marine Corps printing needs, and still left a tidy sum for other special projects, like the uniform factory that he was building. The problem was that Grantville, West Virginia, had never been a hotbed of sci-fi interest and the supply of stories that were available for reprint was finite while the demand for them kept growing. The solution had been obvious.

Simpson had been writing short science fiction stories since childhood, but took to it in earnest during his long convalescence at Bethesda after he was wounded in Nam. Some of those stories had even been published under different pseudonyms. But it had never been a serious pursuit on his part. A trained engineer, the writing had provided him both a hobby and a release mechanism from the stress of everyday life. Mary, his wife, had her charities, arts, and music; he had his writing.

So he started to pen new stories using the name of the oldest son of his best friend who had been left behind in the twentieth century, Tony Clavell. The last time he had heard from the young man, now an army infantryman, he had finished jump training and was being reassigned to the 75thRanger Regiment at Fort Lewis, Washington. Jose, or Joe, had been a good friend of Tom's growing up; in fact, for a while Tom had toyed with the idea of following Jose into the army. But he had prevailed on Tom to attend college instead. Tom had ended up at WVU, where he had met Rita Stearns. Simpson couldn't fail to appreciate the irony. If Tom hadn't met her, there would have been no wedding, no Ring of Fire, and no seventeenth century. At times, he felt that he had been hoisted on his own petard, but now that it was all over, he was glad that he had started to make amends with his son and his remarkable daughter-in-law.

Of course, he couldn't satisfy the needs of his publisher all by himself. He was busy creating and running a navy. So other writers had been recruited. He remembered the first secret workshop at the tavern where he taught what he laughingly described as Writing Uptime Sci-Fi 101. They had been a rowdy bunch of barflies, scholars, college students and wannabe playwrights. They were good, though, and after some fits and starts, the new writers had picked up the load, although Simpson still wrote a story now and then. His publisher had suggested an aviation theme mystery story for the premier issue of *Astounding Time Travel Tales* , and "Flight 19" had been born.

Now, his Halberstadt publisher, Jakob van Baen, had written to inform him that early reader response had been very positive and that there was interest in more Bermuda Triangle and Flying Dutchman-type stories. Simpson smiled, satisfied, and leaned back in his chair as he thought. "Flight 19" was not the only notorious disappearance in the Triangle. He leaned forward and pulled his pencil and paper from the drawer. There had been another one, a collier, whose claim to fame was that its sister ship had been modified to become the*Langley* , the first American aircraft carrier. "What was her name?' he wondered

aloud, pencil on hand, until it finally dawned on him.

"*Cyclops*!"

Author's note: The difference between a Naval Air Facility (NAF) and a Naval Air Station (NAS) is that the latter has aircraft permanently assigned to it. The first is just a transient stop.

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Rolling On

by Karen Bergstralh

January 1632

"Master Ritterhof, Master Eisenbach, may I present my staff?" Martin asked, conscious of the scuffling sounds behind him. He heard Max hiss something at Jakob followed by a 'thwack.'

"Certainly, Master Schmidt. Certainly." Master Blacksmith Bruno Ritterhof smiled in return, politely ignoring the apprentices' bustle. "Master Eisenbach and I have been looking forward to this day for some time."

Bowing, Martin turned and scowled at his staff. It gave him time to control his emotions. Even after a month he was still not used to hearing his old masters calling him "master." Taking a deep breath, he looked at his staff. Max Ohl, the senior journeyman, had them lined up by rank and age. For once they were all reasonably presentable; even Rudy was wearing his best shirt. Thanks be to God and Frau Kunze!

"Masters, may I present Journeyman Max Ohl." Max bowed to the masters and Martin continued. "Max is working on the thread rolling machine Master Glauber and I discussed with you last night." It had not been Martin's idea to discuss Kudzu Werke's latest machine with the two out-of-town masters. He well remembered Master Eisenbach's admonitions on guarding your smithy's secrets lest another, rival smithy steal them. Still, Herr Glauber was the boss and, Martin remembered, Herr Ritterhof's brother-in-law. A small thought nibbled; no doubt Herr Glauber had some deal up his sleeve or else not even a brother-in-law would hear of the thread rolling machine. His attention snapped back to the matters at hand as Masters Ritterhof and Eisenbach nodded in acknowledgement of Max's bow.

"Delighted, Journeyman Ohl. Perhaps you would be so kind as to show us your machine later?" Master Ritterhof smiled kindly at the journeyman.

"Indeed, I confess I am very anxious to see such a machine. Master Ritterhof and I had a lively time debating it over breakfast." Master Eisenbach chimed in.

Martin caught the startled look in Max's eyes and nodded slightly. There had been no time this morning to warn the journeymen about last night's discussions. A stern look at the others quelled any reactions from them. What was Herr Glauber up to this time? No time to think about that now. Frowning fiercely Martin watched Max's reply carefully.

Max bowed again to the masters, his face serious as befitted a journeyman greeting masters of his guild. "I will be happy to do so, Masters." The young man sent a quick glance Martin's way and Martin gave him a tight smile and a nod of approval. That appeared to satisfy Ohl who turned his attention back to the visiting masters and the rest of the staff.

Martin stepped down the line to face the next young man. "And this is Journeyman Carl-Maria Tausch. He is working with me on the reclining chair mechanism. Journeyman Tausch is very good with mechanisms." At least Carl-Maria had expected to show off their progress to the masters. As he bowed enthusiastically, the young man beamed. Keeping his face straight, Martin considered speaking to Carl-Maria about the proper respect to be shown visiting masters. His own pride in their work on the reclining chair made it difficult not to smile along with the journeyman.

"Ah! Another wonder we await being shown. Praise from Master Schmidt on the subject of mechanisms is praise indeed. We were sorry when he left our shop for Madgeburg. Master Ritterhof, I told you we would find our Master Schmidt elbow deep in mechanisms."

"Indeed, Master Eisenbach, and this Grantville is full of such interesting mechanisms," Master Ritterhof intoned solemnly. Martin's glance did catch a twinkle in the older man's eyes. Hearing his own skills praised, Martin felt a flush of pleasure. He clamped the feeling down. He was a master now, and so he must act like one. Martin moved to introduce the next in line.

"Sirs, this is Apprentice Rolf Ackermann. A most promising young man, especially at hot and cold forging." Martin watched closely as Rolf made a credible bow. Turning to the shorter apprentice beside Rolf he continued. "And this is Apprentice Jakob Betche. Apprentice Betche has learned a great deal in the last months and shows considerable promise as a tool maker." Betche for once stood straight and made his bow without clowning around. From the color creeping up under the boy's collar Martin suspected the praise had surprised the boy. He made a mental note to praise young Betche's work more often for the boy really did show promise. "Lastly, Sirs, this is Journeyman Rudy Neder, the young man who made the fittings for the presentation chests." The chests had been a hit. Made from quarter-sawn oak and outfitted with deceptively simple pulls and hinges, the chests were among the first results of Herr Glauber's latest venture. To the discerning eye they displayed a high level of craftsmanship in their simple and pleasing lines. Both masters had been impressed.

"Ah, so this is the young man! Have you more such work to show us, young Neder? If it is up to the level we saw last night I will press Master Schmidt to see you quickly promoted. The drawer pulls have a delightful grace and yet are substantial without being overly heavy. And I must say I admire the hinges. I thought they were Master Schmidt's work until he informed me that you began making them as an apprentice. You thought so, too, did you, Master Ritterhof?"

"Definitely, Master Eisenbach, definitely. Master Schmidt, I applaud you on your ability to find such

talented journeymen and apprentices. "

Rudy turned bright scarlet at the praise of his work. He, too, managed a well-mannered bow and stuttered. " Th . . . th . . . thank you, Masters."

"Now, Master Schmidt, may we see this thread rolling machine? I confess to being very much interested in such a device." Bruno Ritterhof clapped Martin on the shoulder and looked around the shop.

"And the reclining chair, please? A machine that threads bolts is certainly a wonderful device, but a chair that lets one recline . . . Ah!" Master Eisenbach added. "However, before we see these miraculous devices, I have a question. The day is cloudy but you have these wonderful 'electric' lights. Your forge is cold yet the workspace is warm. Can you explain these marvels? We attempted to ask our hostess but, marvelous woman that she is, she speaks only English."

* * *

Three hours later the wonders of the up-time building with its gas heaters and fluorescent lights had been explained. The journeymen and apprentices had shown off the budding thread rolling machine and both the original up-time reclining chair and the developing Kudzu Werke version. The older masters lavished praise on all the staff along with occasional suggestions for improvements in methods and hardware. Pride swelled in Martin's heart as he realized how few improvements were suggested. He had worried about this moment. Worried that his old masters might find his work lacking. Now, basking in their praises he began to truly feel he deserved his new rank. Herr Glauber had told him not to worry, but Glauber was a master carpenter, not a blacksmith.

Master Ritterhof cleared his throat and gave Martin a questioning look. "If we may, Master Schmidt, Master Eisenbach and I would like to present a little reward to your staff."

"And, if we might be so bold, suggest that they be allowed the rest of the day off to enjoy these fruits of their labors," Master Eisenbach pitched in.

From the corner of his eye Martin could see the hopeful expressions on the boys' faces. He didn't have the heart to deny the boys either the purse Master Ritterhof held or the time off. The boys*had* done extremely well showing off their work and had been good representatives for Kudzu Werke. Despite his feelings he kept his face solemn as he turned to face his staff. "Such rewards will end up being the ruin of them, I'm certain." Now, behind him, he heard a sound suspiciously like a laugh turned into a cough. That would be Master Eisenbach. He'd gotten the voice and accent just right. After four years of hearing that phrase repeated weekly, he certainly should be able to rattle it off.

Max seemed to be fighting to keep his face straight. Carl-Maria and Rudy grinned back openly. Only the apprentices' faces showed concern. "I do believe, Masters, that these impudent young rogues could use some time to reflect on life. Alas, given your reward and the day off, I am sure that they will do their reflecting in the Thuringen Gardens."

"As you say, Master Schmidt, as you say." Master Ritterhof no doubt remembered some of the times Martin had reflected on life in a beer hall when employed in their Jena shop. Thankfully Master Eisenbach simply smiled, nodded, and silently tapped his lips. No tales would be told today. Masters had to stand together for the good of discipline.

Master Ritterhof tossed the purse to Max and waved the boys out. The three men stood watching the boys race about for coats, hats, and scarves before stampeding out the forge's door.

"Ah, youth! Did we every have that much energy, Bruno?" Master Eisenbach asked wistfully as the last boy exited.

"I seem to remember you, Herman, and I one time . . . there was a prostitute or two involved and several bottles of wine . . ." Bruno Ritterhof replied dryly. "Yes, you old stick, we were just as lively."

Joseph Eisenback chuckled. "Ah, Bruno, I believe you have shocked our young Martin with your tale of our misspent youth."

"He's bound to learn sometime that a master is just a man who once was a journeyman and before that an apprentice. The title does not confer Godhood, something Herr Hubner would do well to contemplate. Come, Martin, I believe we are to have lunch with Herman today. Will you lead the way?"

"Of course, sirs." Martin came out his dazed vision of these men as youths and escorted them out. Before locking the shop he reached over and turned off both the lights and the heater.

* * *

"That was a sumptuous repast, Herman. Your housekeeper is a good cook." Bruno Ritterhof sighed and patted his stomach.

"Yes, I was lucky there. I met Frau Kunze at the Refugee Center. When I rented this house I remembered her. A gift she is, a gift," Herman Glauber answered agreeably, leaning back in his chair.

"The apprentices mind her—they like her cooking but they like her as well. She manages to feed us all along with keeping the house clean. She also sees that they do their schoolwork and attend church." Martin added, "I would be driven crazy trying to care for them without her."

"Ah, and has this paragon a family? Would she relocate to Jena? My Maria could use such help," Joseph Eisenbach teased. "You've only got two apprentices, I've got eight."

"Oh, yes. Frau Kunze has a husband and three grown sons. When they arrived the husband and one of the sons were gravely ill. Since then they have both recovered and all now all have found work. Hard workers, all of them. They are doing well here and may end up quite wealthy. I'm afraid Maria and your apprentices will have to do without Frau Kunze's aid, Joseph." Herman leaned back in his chair and smiled at his old friends.

"In all seriousness, Herman, we are glad to see you doing so well. When word first came of the sack of Madgeburg we feared for you and the boys. Your first letter was most welcome."

"Very welcome, Herman." Joseph chimed in. "And startling. We had, of course, heard about Grantville's sudden appearance. Then your letter arrives and we find that not only are you and the boys alive, but that you are here."

"Your letter was so full of wonders that we thought you had been bewitched . . ." Bruno began.

"Oh, Bruno! That was Pastor Hentzsche! He remains unconvinced that Satan didn't send these Americans. We are tasked to report back to him on any signs of magic. Maria was most insistent that we would find you in dire straits and must bundle you back to Jena with us." Joseph shook his head. He finished off his wine and smiled.

" I confess, at first I could not imagine why you wanted to stay here. Now, I think, I begin to understand. Your Grantville is a wondrous place." Bruno waved his hands at the electric chandelier hanging over the table.

"Oh, it is. And not the least because here I can meddle in blacksmithing and furniture making instead of sticking just to carpentry." Glauber chuckled.

"So we've noticed. What other little businesses are you contemplating, Herman?" Joseph asked.

Glauber smiled slyly and puffed his cheeks out. "Oh, I have one or two things but nothing to really talk about. It is Martin here who has big plans."

All eyes shifted to Martin. Trying to get his thoughts straight he fidgeted with his wineglass. "I guess, that my idea is 'big'—at least in size. Herr Glauber, ah, Herman, told you we are making bolts and nuts. Have you seen the iron plows the Americans are building?" The older men nodded. Master Blacksmith Hubner had shown them the plows and expounded on them in length. That Hubner had been attempting to blow up his importance in an effort to deflect criticism had been clear to both of them, yet the plows were impressive.

"They are lighter than a wooden plow, thus requiring fewer horses or oxen to pull," Ritterhof commented. "I believe I have heard that it can plow more acreage in a day than the old plows."

"Yes, and it is built in pieces that can be taken apart for repair or replacement. Clever design!" Eisenbach added. "If the price is low enough how can the farmers resist buying them?"

Martin nodded. "It is making them in pieces that will keep the price low. Or should. Herr . . . Herman had the idea that someone needed to make the bolts and nuts that hold the plows together. That was the start of Kudzu Werke. The American machine shops could easily make these nuts and bolts. They could make them faster than we can. But they have many more important jobs to do than make simple bolts and nuts."

"Ah, the thread rolling machine!" exclaimed Eisenbach. "The Americans are helping you with the thread rolling machine." He shot a shrewd look at Herman Glauber before turning his attention back to Martin.

"Yes, yes, at least the cutting dies. Those are made from up-time steel. Herr Reardon's shop made them for us. One of his people, Herr McConnell has helped us." Martin shrugged and looked rueful. "Compared to what the up-timers had, our little machine is very small and very simple."

"Yet, when it is finished, it will be better than anything we've had." Herman motioned with one hand, indicating all the men at the table. "We can't make a thousand bolts an hour. However, we will be able to make a hundred bolts an hour—all with the exact same thread. How many bolts can your shop make in an hour, Joseph?"

"Aha! That many? All with the same thread? Will there be a demand for so many bolts, Herman?" Joseph's eyes gleamed.

"Oh, yes! Sirs, the plows are only the first and simplest machines the Americans are building. They will need bolts by the thousands." Martin paused and looked around at the others. "Herr McConnell showed me a machine, a sickle-bar mower. It cuts grain and hay. This mower is complicated with many moving parts, and uses lots of bolts. Also, it requires gears."

"Hmm, gears are tricky devils. Have to be matched sets or they never work quite right. Lots of tricky work—or do your Americans have a way of making thousands of gears quickly?"

"Herr Ritterhof, the machine shops here in Grantville can make gears. Not by the thousands, but they can make them. Like the nuts and bolts, they don't want to make them if someone else can. As you say, gears can be tricky. The Americans have ways to make gears so that any one gear can replace another of the same type without filing and fitting." Grinning at the two blacksmiths' stunned reaction, Martin saluted them with his glass and finished his wine.

"How? How? I mean, we use patterns and such but still what magics do the Americans have to do this?" Bruno leaned across the table, staring intently at Martin.

Martin arose and with a showman's flourish produced a small metal chest from inside the sideboard. It was painted bright red and had a shiny hasp held shut by an up-time padlock. In silence he brought out a ring of keys, selected a small brass one, and unlocked the chest. Reverently, Martin laid out several items and a thick book on the table.

"These, sirs, are the 'magic.'" He held up a long piece of steel marked with lines and numbers along its length. "This is a steel rule I purchased from Herr McConnell. See how finely it is marked? All the American machines use the same standard units of measurement." Martin saw that he had the rapt attention of the older blacksmiths. He decided not to go into metric measurement, a subject he was not very clear on himself and one that Herr McConnell often cursed as "Common Market foolishness." "I can use this rule to check that my parts match the Americans' parts. Here I have a dial caliper, which I can use to measure diameters of round objects. The dial reads out the measurement in the same standard units of measurement as the rule. Here is a micrometer for measuring the depth of holes. There are hundreds of such splendid tools! This book," Martin indicated the thick up-time book he had placed it on the table, "contains formulas and standards everyone can use so that parts fit together properly. Here," he thumped the book for emphasis, "here are formulas for designing and making gears."

Ritterhof and Eisenbach glanced at each other and back at Martin. "Magic! Oh, yes, young Martin, magic. Not magic as Pastor Hentzsche sees it, still very potent magic." Bruno reverently gestured at the book and Martin handed it to him. "Ah! Now I understand why you are going to school. Look, Joseph, the book is a treasure trove but it is in English! Martin, guard this with your life for such a marvel will bring every master and journeyman blacksmith hence."

Looking up from the book open in front of them, Joseph stated quietly, "You intend to make gears."

"Yes, sir. Lots of gears. All of the American machines use gears. Brass gears, iron gears, steel gears, even plastic gears. Plastic we cannot make but I have several people interested in replacing plastic gears with brass. We can cast the iron and brass gears and finish only the areas that need to be smooth."

"Ambitious plans, young man. I suspect you have spent too much time in the company of my brother-in-law and caught some of his ambition." Ritterhof shook his head in wonder. "Have you any other American magic to show us?"

"Where you here a month I could not show you half the wonders! But this, this I must show you!" Martin reached back inside the sideboard and produced a large folio and several rolls of paper. "This is how the Americans design machines and how they ensure that all the parts fit correctly." He unrolled one of the large rolls revealing a drawing. Seeing the puzzled looks on Bruno and Joseph's faces he opened the folio and pulled one drawing out. Next he reached into the red metal chest and brought out a wrench. "This is

a drawing of this wrench."

"I see four pictures here." Bruno muttered, "and only this one looks like your wrench."

"Ah, but they really are all pictures of the same thing. They show different sides of it. See here, if I hold the wrench so it matches this picture, and when I turn it thusly it matches that picture. The pictures and dimensions tell me how to make thousands of identical wrenches." Martin pulled out several more drawings. "Each of these drawings shows how to make a single part. The large drawing shows how to put many parts together to make a machine. The Americans call this 'drafting' and I've been taking classes to learn how to understand and make such drawings."

"Our bright new master blacksmith is also making his assistants take these courses so that all in the shop will understand and be able to use these drawings." Herman added proudly. "Heinrich takes the classes, too. He is making drawings for our furniture shop. When a customer asks for another pair of chairs just like the ones we made a year ago, we will take out the drawings and make them. No one will have to go to the customer's home and measure the old chairs."

Bruno Ritterhof sat back in his chair, his face blank. Finally he nodded. "Master Schmidt, my son, Karl . . . will you accept him as an apprentice?"

Martin stared at his former master. He remembered Karl as a bright child, full of questions and curiosity. Fully aware of the compliment being paid him, Martin replied, "Yes, Herr Ritterhof, I will."

"I expect you to be hard on him and insist he learn this drafting." A twinkle had crept into Ritterhof's eyes. "Treat him as harshly as you treat your other apprentices. Hmm, I've spoiled the boy and he*will* need a strong hand."

"My sons have scattered as journeymen," Joseph Eisenbach said. "When we return to Jena I shall contact them and suggest that they visit Grantville. Especially Dolf. You remember Dolf? He's as mad about mechanisms as you, Martin. Dolf considers himself ready to become a master. I think it would do wonders for him to learn drafting."

"Any and all of them will be welcome, sirs." Martin replied.

"All these wonders! Still, I have a question or two." Joseph pondered. "Martin, earlier you said you had 'big' plans. Nuts and bolts are numerous but not large. Even these gears you talk about do not seem to be large . . ." he trailed off, inviting Martin to answer.

Hesitating, Martin looked down at the table, his eyes on the drawing of the wrench. "Well, sirs, the 'big' plan I have is for a drop forge to make wrenches and such. After all, there will have to be wrenches to install all the nuts and bolts I'm making."

"Ah, a drop forge. Drop forges need waterpower. Waterpower and a large shop. And they are costly. Will this river in Grantville run a drop forge?" The interest in Bruno's voice was barely masked.

"Oh, no, Bruno! This is Grantville! This is a place of miraculous machines and electricity. A drop forge such as Martin wants does not need waterpower. Land, however, that is a question." Pulling out his pipe, Herman gave the impression of settling in for a long discussion. While lighting the pipe he looked at Martin and winked.

"No, sirs, a drop forge in Grantville would be run by a motor." Frantically Martin tried to remember

what Herr McConnell had said about motors, engines, and the plans for the drop forge. With a mental shrug he gave up. The masters from Jena wouldn't understand and it didn't matter, not at this time. "Now, where to locate the drop forge is a question only of where there is sufficient room. Unfortunately, our present shop is too small and there is no building of the correct size close by."

Herman was sitting calmly, the slight grin on his face stretched wider. "We are looking, mind you. Come spring we can get a better idea of where we might build a new shop, one large enough for our forge."

"But, Herman, have you enough money for such an undertaking?" Joseph asked suspiciously. "If you would allow, we might be interested in a small investment here in Grantville . . ."

* * *

The last of the luggage had been stowed in their carriage. Goodbyes had been said and Frau Kunze's hamper of food carefully placed within easy reach of the travelers. The pair prepared to climb in. Bruno Ritterhof hugged his brother-in-law Herman and shook Martin's hand.

"Remember, a firm hand is needed with Karl. I expect him to do well here." The man said, a wide smile on his face. "He should be here by the end of the month."

"I've a switch picked out already. I remember his tricks, sir." Martin returned the smile. "There is an empty bunk bed in the apprentices' room waiting for him."

Joseph Eisenbach turned to Herman. "One last thing I must know, Herman. Why are your little enterprises named 'Kudzu'?"

Martin and Herman exchanged an amused glance, recalling a certain summer day.

"Joseph, come back in the summer and I will show you. Kudzu is a vine that grows in Grantville. A very pretty vine with a sweet smell." Herman grinned. "A vine that has deep roots; roots that are hard to pull up and destroy."

Joseph Eisenbach stared at Herman Glauber for a moment and then nodded. "You've sunk your roots here in Grantville." Satisfied, Eisenbach joined Ritterhof in the carriage. He leaned out the window to make a last comment. "Now I have an answer for Maria—why we are not bringing you and the boys back to Jena."

As the carriage started down the road Martin turned to Glauber. "Will you tell him the rest of it or just let him figure it out when he sees a kudzu infestation?"

"Now, Martin, what ever do you mean? What is the 'rest of it'?" Laughing, Herman slapped Martin on the back.

"That the kudzu vine gets into everything and grows fast. Just like your little enterprises."

"Ah, yes. Our enterprises are growing quickly. What was it that one fellow said about kudzu growing? 'On a summer's night you can hear it grow.' May our enterprises grow in like manner, winter or summer."

* * *

Three Innocuous Words

by Russ Rittgers

White vapor was blowing out of Hudson's nostrils that frosty mid-morning in late December. Chip Jenkins rode his horse around the small snow-covered copse of trees and saw the von Ruppersdorf manor that Katerina had finally finished building this year. He'd been looking forward to this day for almost two months, ever since he'd last seen her following a visit to Leipzig. He'd been there on Committees of Correspondence business as usual and had only been able to spend one night in Ruppersdorf before returning to Jena and his classes.

The University of Jena was on school break and Chip was looking forward to spending extended quality time with Katerina over the Christmas holidays. He'd traveled far more this year than he wanted on CoC business now that Gretchen was bottled up in Amsterdam. His studies had suffered, not to mention time spent with Katerina. The CoC work was rewarding but he always looked forward to returning to Magdeburg and bringing Joachim von Thierbach and Mathilde Wiegert, old friends from the Jena CoC, up to date.

Chip spent the previous night with Joachim's parents in Thierbach. Dieter von Thierbach still hadn't officially reconciled himself to Joachim's decision to marry Mathilde but both parents welcomed Chip into their home. Dieter was also one of Dad's fellow investors in a few ventures which were headquartered in Grantville. The older man complained mildly that those businesses were only marginally profitable. Chip also knew it was because he wouldn't declare profitability until he recovered his original investment, no matter what Dad's accountant told him. One of their investments made a product that Chip had ordered. It should have arrived in Ruppersdorf by now. He had another, much smaller gift for Katerina in his saddlebags, one rarer than diamonds these days, but he wanted the ordered one ready on Christmas morning. If nothing else, it would make her the envy of every noblewoman who came to visit this winter.

Chip gave a quick chuckle and nudged Hudson in the ribs to bring him into a mild canter. They'd spent a lot of time together over the past year and Hudson knew what he wanted.

Nicholas, Katerina's stable master, greeted him with a wave and a broad grin, a quite different attitude from when they'd first met. Back then all he'd do is say, "Yes, Herr Jenkins," with downcast eyes. That was before Chip started spending time in Ruppersdorf and hours talking with Nicholas about how to care for Hudson.

"How's Lorentz these days?" Chip asked as he walked Hudson into the stable, suppressing his own desire to rush into the manor house. The stable master's youngest son had been ill the last time Chip had visited.

"He's back to aggravating his sister again, Herr Jenkins," Nicholas chuckled. "That herbalist you sent over from Thierbach made up a tea which we gave to him. Two days later he was on his feet. My wife and I really thank you for that."

"I didn't do much." Chip grunted as he pulled the heavy riding saddle off Hudson. "Freiherr von Thierbach once told me how much he trusted Hanna with his health. I only asked where she lived when I visited Thierbach the following day. I met her and requested she visit you at the Ruppersdorf manor, that's all."

"I'll finish the grooming if you don't mind, Herr Jenkins," Nicholas said with a grin a few minutes later. "I'm certain the Freiin would like to see you as soon as possible and I suspect the same of you." He gestured towards the woman's shadow blocking the light at the open stable door.

Chip had learned by now not to be overly affectionate when he greeted her in public and contented himself with a quick peck. "Am I going to have to hunt you down every time you come here?" the slim, dark-haired Katerina whispered in his ear as they hugged. Chip squeezed her waist a little tighter as they walked out of the stable.

Once past the manor house threshold, he began nuzzling her pale neck, just below and behind her ear. His blonde mustache made her giggle and push him away. He caught her hand and pulled her to him.

Several minutes later, after catching her breath, Katerina spoke again. "A carter dropped off a large crate addressed to you the other day."

"Great! I was hoping it would get here in time. Are you sure it came addressed to me? I know I said for it to be sent to you."

Katerina gave him a look with serious raised eyebrows. "See for yourself. The carter said that he'd been instructed to leave it in the main room close to the fireplace. He unloaded it with the help of Nicholas and Hans. What is it?"

"Call it early modern heating technology." Chip smiled, walking into the main room. Looking at the crate sitting there he frowned, puzzled. "I thought it would be larger. Perhaps I ordered a smaller version than I thought I did."

"The carter left a letter addressed to you as well." Katerina took it from the fireplace mantle and handed it to Chip.

Recognizing his father's handwriting, Chip ripped open the envelope with a smile.

"Dear Chip,

I know you're familiar with the three little words "I love you." I decided that since you're obviously getting this for Katerina's Christmas, you should experience the joy and happiness I've experienced on Christmas Eves ever since you and Missy were toddlers.

Normally the carter would have uncrated and set up your gift but I told him to leave it in the crate this time because you deserve the experience of what I call the Three Innocuous Words.

(over)"

Chip turned the page over and his blood ran cold.

"SOME ASSEMBLY REQUIRED

Merry Christmas, Dad

P.S. For best results, read and follow the written instructions. I've also included all the tools you'll need. You'll notice no hammer is required."

Chip looked at the crate in dismay, his jaw sagging. One totally unassembled, highly decorated, cast iron, wood-burning parlor stove. No one in Ruppersdorf had ever seen a precision-machined nut and bolt much less know what a parlor stove was or how to help him.

It was going to be a long night . . .

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Doctor Phil's Distraction

By Kerryn Offord

April 1635, The rectory, St. Martin's in the Fields. South of Rudolstadt

Yesterday I helped Stepmama turn Papa's old Geneva gown. We unpicked the seams, darned threads to reinforce the worst worn spots and re-dyed the fabric before hand sewing it back together, with what was formerly the inside now out. With a new detachable linen clerical collar, Papa will be set for another

year or two.

Today I walked to the stationery store to purchase school supplies for tomorrow. When I got to the dress shop, I stopped to have a look at the dresses displayed in the window. There was one there, my favorite. Ever since it first appeared in the window I had stopped to admire it. If nobody was looking, I would position myself so my reflection appeared as if I was wearing it. I would have loved to buy it, but with eight children, including me, still dependent on poor Papa, there is not the money for such fripperies. My new dress would be something made over from what Stepmama could find in the poor box.

Today, though, I suffered a shock. My beautiful dress was being taken from the window. I watched through the window in horror. Elisabeth Schwentzel, a girl my age, tried it on. It didn't suit her at all. But she bought it just the same.

Struggling to hold back the tears, I walked away. It wasn't fair. Why should Elisabeth have my dress? She was nothing more than a maid in one of Rudolstadt's hotels, and her father a laborer at the sawmill. But he earns more than Papa, even with all of Papa's learning. And the banns have been read for Elisabeth's upcoming marriage to a young man working at the steel mill.

Things haven't been the same since Andrea ran off to marry her up-timer. Before my sister eloped, we at least had each other when we taught the young boys and girls at Countess Katharina's, the parish school. It's been a year since Andrea eloped with Tony Chabert. In that time the parish hasn't found a replacement for her. They are too tight with their money. Andrea hadn't been paid any more than I am, of course. Daughters are considered a benefit of employing a parish pastor. Now I face eighty-three five- and six-year-old children every day on my own and I will continue to do so until I marry—if I ever do. Today in school I caught myself sighing heavily over my situation, before turning my attention back to what the children were doing. I don't think I'll ever get married. Who would have a woman of few looks and little dowry? Even Papa has given up on me, and he's the man who found up-timer husbands for seven of his congregation in less than twelve months.

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Herr Doctor Phillip Theophrastus Gribbleflotz gave the image in the mirror a final searching look. A final brush with the clothes brush, a hat to cover his head, and he was ready. Briefcase in hand, Phillip walked to the hotel where a conference room had been booked for this meeting. It wasn't that he expected any problems with the women from Kubiak Country Industries, but with the up-timer females it helped to be prepared.

When he first started working with the Kubiak Country ladies, Phillip thought, he had been too timid. He hadn't been used to being around women, especially not forceful up-timer women. He had let them talk him into all sorts of irrelevant distractions from his research. But this time he intended to be firm. At last it appeared he would be able to start on his greatest project, his investigation into the invigoration of the *Quinta Essentia* of the Human Humors. The stumbling block had been the aluminum members for the pyramid. Faceted gems had been easy in comparison. But a couple of charming men had come visiting. They had obviously attended one of his seminars and knew of his interest in aluminum. They were offering preferential access to the new metal when they started producing it. However, they needed to raise money before they could extract the necessary ores. Phillip hoped to convince the Kubiak Country ladies to invest in the company they were planning to set up.

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Phillip was reasonably happy with the way the meeting had gone. The ladies hadn't even had some new

recipe for a product they just had to have. They had listened intently when he had described the aluminum company and how he wanted to invest in it. Just like properly behaved women they had promised to come back after they talked with their husbands.

There was a bookshop he just had to visit, and his favorite glass blower had sent him a letter advising him that he had some new scientific glassware to demonstrate. Phillip walked down the main street, a bounce to his step. All was well with his world.

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Tasha Kubiak stalked around the room. "I don't like it. Does anybody know anything about making aluminum?"

"Well, I don't. And I reckon that's what these con artists are banking on. Their story sounds convincing, and the prospectus looks pretty with all of the color pictures and all those pretty graphs and tables. I think the whole thing stinks." Belle looked around the conference room to see if any of the other Kubiak Country ladies disagreed.

Tracy Kubiak stood up. The driving force behind the formation of Kubiak Country Industries, what she said carried a lot of weight, so she had to be careful what she said. "We have a problem." The other ladies dutifully nodded their heads. That, they agreed with. "On the one hand, we don't want to alienate Dr Phil. We can't just say 'no you can't invest in this aluminum company.' On the other hand, we don't want to commit funds if it is a fraud. It might be a perfectly legitimate company. The proprietors may be able to deliver what they claim."

"But you don't believe it, Mama?"

Tracy smiled at her adopted daughter. At nineteen, barely a dozen years her junior, Richelle and her daughter, Leyna, had been living with Tracy and her husband for the better part of four years. In that time Richelle had become her second in command in both Grantville Canvas and Outdoor and Kubiak Country Industries. "No. I don't believe it. It sounds too good. It targets Dr Phil too well. And the prospectus is too much flash without enough substance."

"Is there anything we can do to distract Dr Phil?"

Mary Rose Onofrio's question was met by the silence it deserved. Dr Gribbleflotz had been talking about his aluminum pyramid every chance he got for the better part of three years. In that time his dream of an aluminum pyramid with its strategically placed faceted gems had survived dozens of alternative lines of research. What could possibly distract the man from the greatness he expected to realize through investigating the*Quinta Essentia* of the Human Humors?

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He couldn't be sure how it happened. One moment he was walking around a peasant woman with funny white marks on the back of her drab skirt and bodice. The next, he was sent sprawling. He suddenly found himself on the ground; his arms wrapped around the woman, the contents of her basket scattered around them. There was the sound of laughter and running feet. For a moment Phillip's mind was blank. It felt so natural, the warm body wrapped in his arms. With a start he realized what was happening. This was a young woman, and he steered clear of young women. Or more precisely, they seemed to steer clear of him. Phillip couldn't remember the last time he had cuddled or been cuddled by anyone. Hastily he released her. He couldn't meet her eyes and turned to look elsewhere. Loose papers being scattered

by a gentle breeze caught his attention.

"Oh!"

It was the sound of suppressed horror. Phillip had made similar utterances after dropping precious books and paper. Scrambling around on his hands and knees, he started to collect papers before they scattered too far. He turned to pass the papers he had collected to the woman. Their heads crashed together. Stunned, he jerked back. She also had reared back from the contact. A moment later Phillip turned away from her gaze and hastened to his feet.

He helped her to her feet. "Are you all right, Fräulein?"

"Yes, thank you, sir. Those children, someone should teach them better manners. Oh dear."

Phillip watched the young woman reach down for a waxed paper parcel that had been ground into the pavement by someone's boots. When she opened it he could see the squashed remains of what had probably been intended as her midday meal. At the thought of food, Phillip realized it had been a while since he last ate.

"Fräulein, it would please me if you would join me over lunch." The young woman appeared on the point of refusing when he heard deep rumblings. Phillip had known hunger, and he understood pride, besides, he was curious about her. He had noticed the books and papers he had helped retrieve. Judging by the quality of the penmanship on the papers, she was an educated woman.

"Fräulein, it appears I am responsible for destroying your meal. Please allow me to make recompense. A simple meal in the public restaurant of your choice."

"Good sir, I couldn't. It was carelessness on my part. My meal is still fit to eat. A little squashed but the wrapping protected it." Maria Blandina backed away, then turned and ran.

Intrigued Phillip followed. Soon he was able to observe her running into the Countess Katharina the Heroic School next to Lutheran church of St. Martin's. Things were becoming clear. Obviously the young woman was a teacher at Countess Katharina's. That explained the penmanship. A teacher had to be well educated. As for the plain clothes, Dr Gribbleflotz wasn't much of a Lutheran, but he knew enough to understand how the church worked. Most likely the Fräulein was a daughter of the pastor.

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Settling down behind my desk at Countess Katharina's, I gave thanks to God for the fine weather of the last few days. The dry conditions meant none of the books or papers had taken any harm. The loud rumbling from my stomach reminded me I hadn't eaten yet. Pulling the waxed paper packet from my basket I peeled the paper away from what was supposed to have been my lunch. I looked at the sorry looking meal, almost unrecognizable after some passerby had stood on it in his heavy boots.

It looked completely unappetizing, but beggars can't be choosers, and I was hungry. I had never been so embarrassed as when my stomach rumbled so loudly just as I refused the nice gentleman's offer of lunch in a restaurant. I can't remember when I last ate in one, and would have loved to accept his invitation. However, if Stepmama ever heard that Pastor Kastenmayer's younger daughter had been seen eating in a public restaurant with a strange man . . . It had been bad enough a year ago when Andrea had a meal in a public restaurant with the up-timer she later married.

He seemed a nice man. Not too old, and although the colors and style of his clothes didn't really suit him, they were well made. I have to blush when I remember the feel of his arms around me. It felt so comfortable, even for just a moment.

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Phillip was unable to settle down that night. Every time he started to drop off to sleep a pair of sparkling eyes greeted him. The next day, while getting dressed, he thought about what he had to do. Somehow he would make time to see the young woman.

His eyes dropped to the knees of his trousers and his gleaming shoes. Last night the valet had had to clean them. He was proud of the way he dressed, and to have been walking around Rudolstadt with soiled knees and dirty shoes would normally have made him ill with embarrassment. He was surprised at his feeling of contentment.

He pulled his pocket watch from its pocket and checked the time. Yes, he should have plenty of time.

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He stood on the corner, waiting. A rowdy mob of young children had assembled outside Countess Katharina the Heroic School. Then, the moment he had been waiting for. The teacher, the young woman of the previous day, arrived. Phillip let his eyes feast on her. She was ordering the mass of young children into lines. Phillip expected the other teachers to assist her, but they went straight into the rooms where the older children were waiting, leaving her to manage all of the youngsters on her own. Phillip was simply amazed. The redoubtable Frau Mittelhausen was complaining bitterly about dealing with a few young apprentices at HDG Enterprizes back in Jena. Maybe she should take lessons from this teacher. An idea bubbled to the surface. Maybe he could offer the young woman a job helping Frau Mittelhausen run the household. Surely the pay and conditions would be much better than what she was receiving.

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Phillip was ready and waiting when the children poured out of the school. Picnic basket in hand, he approached Maria Blandina. "Fräulein, you left so suddenly yesterday that we failed to introduce ourselves. I am Phillip Theophrastus Gribbleflotz, an alchemist at HDG Enterprizes in Jena, and I would like to invite you to join me in sampling the delicacies my hotel prepared." He lifted the basket and stood waiting expectantly, the cloth covering the food pulled away to let Maria Blandina see inside it.

Maria Blandina stared at Dr Gribbleflotz. Already the smells emerging from the basket were pulling at her senses. After a quick look around to see who might be watching, and to check that Stepmama wasn't one of them, she introduced herself. "I am Maria Blandina Kastenmayer, a teacher at Countess Katharina the Heroic School, and I would be delighted to share the contents of your basket."

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I had to hurry back to class. The time had passed so quickly. Phillip asked if he could walk me home after school ended for the day. I told him yes. We had talked a little about each other. I now knew he was in Rudolstadt on business for the company that employed him. The company made products aimed at the up-timer market. I had been forced to smother my laughter at the way Phillip proudly named some of the products, Gribbleflotz this and Gribbleflotz that. It was as if he felt, because he had the same name as their inventor, that he had some sort of reflected glory. And maybe there was, because most people find jobs for their relatives. It is a harmless conceit, a bit like the way Papa always manages to insert into

conversations that Mama, his first wife, had been a Selfisch, a sister to the Selfisch of the respected Rudolstadt law firm of Hardegg, Selfisch, and Krapp.

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Phillip was distracted, his mind concentrating on his recent luncheon date, rather than where he was going. Maria Blandina Kastenmayer, such a pretty name. And she seemed to actually like him. He had arranged to walk her to work the next day. He still wanted to take her back Jena. But what if she said no to working for him? He would be too embarrassed to continue seeing her.

Sunday. After Church Lunch, Drahuta Property

Belle Drahuta tapped the aluminum company prospectus. "What are we going to do about Dr Phil?"

Erin Zaleski lowered her coffee cup. "About the only thing we can do is find something to distract him while our husbands scare off these con men."

Tracy Kubiak laughed. "Erin, the only thing I can see distracting Dr Phil from those tricksters and their aluminum mine is an improved way of investigating his*Quinta Essentia* of the Human Humors." She looked around the room. "Does anybody here know anything that might work?"

Belle shook her head. "I wouldn't know a*Quinta Essentia* of the Human Humors if it stood up and bit me, Tracy. But are you sure that they are con men?"

"Ted and Jonathan's father aren't sure if it's a con or wishful thinking. They are willing to give them the benefit of the doubt when they claim they will be mining aluminum ore. A lot of potential investors might get confused if you talked about mining bauxite to make aluminum. But they picked up on the problems of processing the ore. The prospectus implies that it's a simple matter of extracting the ore from the ground, isolating the aluminum and melting it to form ingots. Apparently it isn't that easy. It needs some pretty exotic chemicals to process the ore, and it really burns through electricity."

Hidden in a corner, snuggling up together were Jonathan Fortney and Tracy's adopted daughter, Richelle. Normally the self-satisfied smiles on their faces would be aimed at each other, but this time they were looking at the women grouped around the kitchen table. They were listening in on the discussion. Tracy pointed an accusing finger at them. "Okay, you two. Fess up. What do you know that we don't?"

All eyes turned to Jonathan and Richelle. "It appears that Dr Phil has been a little distracted of late, Mama." Richelle had to use her elbow when Jonathan started to laugh.

Belle glared at Jonathan. "What's so funny about Dr Phil being distracted?"

Imprisoning Richelle's arms so she couldn't strike him again, Jonathan smiled. "Dr Phil is in love."

"In love? With who? What kind of woman is the geek interested in? Some half-naked, painted tart, all tits and no brain, I suppose. It would be just like the man. And what does she see in him? Money bags?"

Richelle waited for Tante Tasha to finish her diatribe. It was a little more extreme than the one she had addressed to Jonathan when he told her that Dr Phil was seeing a young woman.*Who could have*

imagined Dr Phil being struck by Cupid's arrow at his age? Listening to him talk about the lady had established two things in her mind. Firstly, that she was a very respectable young lady. Pastor's daughters charged with teaching the congregation's young had to be. And secondly, Dr Phil was very unsure of his reception. His lack of confidence around women was crippling the progress of the romance.

"Dr Phil says she is the sweetest, kindest, most enchanting young woman he has ever met, Tante Tasha."

"That wouldn't surprise me at all. How many women would be interested in him? What do we know about her? Who is she? Who is her family? Does she bring a dowry?"

"Dr Phil says Maria Blandina Kastenmayer is the daughter of the pastor at St. Martin's in the Field, just outside the Ring of Fire. And I doubt they are talking dowry, or even marriage. Dr Phil is so lacking in confidence around her he doesn't know how to behave."

"Have either of you two met this young woman?" Tracy asked.

"Jonathan has."

"Well?" Tracy turned her best stare of interrogation, perfected during her time as a NCO with the US Army back up-time, onto Jonathan.

"I managed to get a good look after Dr Phil pointed her out one day. She's a small thing. Youngish, passable looking, but the clothes she wears drain her face of any color and do absolutely nothing for her. She moves gracefully when she walks. And she looked a little worn. But Dr Phil reckons she's teaching something like eighty young kids at Countess Katharina the Heroic School, so that's not surprising."

There was disbelief at that. Who could possible teach that many children in a single classroom? If true, then she must be a very special young woman indeed. Surely even the redoubtable Veronica Dreeson would tremble at the thought of taking charge of that classroom day after day.

Tracy thought a moment. "I want you both to meet this Maria Blandina. I want anything you can find out about her. This might be our best hope for distracting Dr Gribbleflotz from the aluminum mine, but we don't want him jumping out of the frying pan into the fire."

"How do you suggest we find out about her, Mrs. Kubiak?"

Tracy threw up her arms. "Do I have to do everything for you, Jonathan? Think. Start with Frau Gundelfinger. She usually knows something about everything. Now get, go, get a move on. The pair of you should be outside in the sun."

Belle watched the young couple walked out of the house arm in arm. "When are those two getting married?"

"Soon. Very soon. In fact tomorrow wouldn't be soon enough." Tracy gently shook her head at young love. "They're waiting for Jonathan's term with the Army to finish. Then he can start full time with his father."

"When's that, a couple of months time?" Tracy nodded. "Can they afford to marry? I know you still have Ted's parents' house they can have, and Richelle virtually runs Grantville Canvas and Outdoor these days. But Jonathan can't have saved much on a soldiers' salary, can he?"

Tracy had to smile at the family's concerns. Her gaze followed the couple as they gathered up Richelle's daughter, Leyna, and her own children, Justin and Terrie, and took them outside. She waited until they were out of sight. "Do you remember how Bitty put on a performance of*Bad, Bad Brillo* for Duke Philipp?" At their affirmative she smiled. "Jonathan might not be the smartest man alive, but he had a knack for making the right kind of friends and being in the right place at the right time. He collected a share for helping. With that and what he has earned helping some down-timers . . ." Tracy smiled and shook her head. "No. Money isn't an obstacle."

Several days later

"Maria Blandina, there is gossip about you seeing some young man on the sly. What do you have to say for yourself? You know it reflects badly on your papa. Especially after what happened with your sister. Who is he? Where does he work? Is he Lutheran?"

I waited patiently for Stepmama to finish before answering. "His name is Phillip Theophrastus Gribbleflotz. He has a responsible job with an up-timer firm based in Jena. I don't know if he is Lutheran. We haven't talked about religion. But I expect he is, since he works in Jena and almost everyone in Jena is Lutheran. It isn't like Grantville."

"What? My information is you have been seeing this man every day for more than a week. How can he have a responsible job in Jena and what is this 'responsible job' that allows him so much time in Rudolstadt?"

"He is an alchemist working in the laboratories at HDG Enterprizes in Jena."

"An alchemist! A charlatan more like. He's probably a laborer barely making a living, and wasting what he does earn on his clothes from what I hear. I hope you haven't visited him in whatever shady boarding house he is staying."

I bravely weathered the hard stare from Stepmama. Phillip had taken me to lunch at the small private hotel where he was staying. It was little more than a boarding house, but not the sort Stepmama was suggesting. The lunch had been respectable, shared with friends of Phillip, a young couple engaged to be married. "He is on vacation, Stepmama. They allow their employees several weeks paid 'vacation' every year."*Unlike you and Papa, who expect me to teach and help you every day.* "And he is not a charlatan. He does have a respectable job. I have met a young couple who know him and they talked easily about what he was doing in Jena."

"And when, Marina Blandina, were you planning on introducing us to this man? Apparently you have been seeing him for a whole week, and still you haven't chosen to introduce him to your mama and papa. You didn't even let your papa and me know you were walking out with someone. I had to hear of it from Christiana Selfisch."

I started a little at that. That was definitely bad news. Tante Christiana and Stepmama didn't get on at all. I didn't want to know just what was said, but it was bound to reflect badly on Stepmama.

"Your Tante Christiana was very happy to see you walking out with a young man." Stepmama stared unblinkingly straight into my eyes. "She asked when the banns would be read." I had to swallow at that. Marriage was a topic we hadn't touched on. I wasn't really sure that Phillip could afford a wife.

"Are we to expect this man to come calling to ask your papa for your hand?"

I'm afraid to say I panicked. I said the first thing that entered my head. "Yes."

It was pleasant to see Stepmama at a loss for words, but I was soon punished for my momentary pleasure. "Then bring him around for dinner tomorrow night. If you are going to marry the man, your papa and I had better meet him."

I stuttered an acknowledgement and ran from the room. What to do? I was going to have to say something to Phillip.

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Dr Gribbleflotz smiled at his guests. The up-timer Jonathan Fortney was watching his fiancé, Richelle Kubiak, playing with her daughter. Phillip recognized the look in his eyes. He had been seeing that same look in the mirror these last couple of days. The quiet contentment and air of rightness between the three settled it for Phillip.

"I intend asking Fräulein Kastenmayer to marry me." He carefully watched to see the reaction of the young couple. He didn't go unrewarded.

Richelle turned and smiled at Jonathan and then at Phillip. "That's very nice, Dr Gribbleflotz. She is a delightful young woman, and not without connections."

Jonathan snorted at Richelle's response. It was considerably different from what Richelle and the Kubiak Country ladies had originally thought.

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"But, Salome dear, it really is time Maria Blandina married. We can't expect her to stay unmarried and teaching at Countess Katharina the Heroic School forever. And it reflects badly on me that I have been able to find husbands for seven dowerless young women of the parish, but failed to find a husband for my own daughter."

"Husband, if Maria Blandina marries, who is going to teach the children of Countess Katharina the Heroic? The parish will be forced to pay a teacher. No, two teachers. The parish will never find another teacher willing to teach such a big class. Although Maria Blandina managed quite well on her own."

"Dear, that is a problem for the parish. They can not have expected Maria Blandina to stay unmarried. And besides, her prospective husband works in Jena, you say?" At Salome's nod, Pastor Kastenmeyer continued. "But, that is wonderful. Just think. Maria Blandina will have a house in Jena. Her brothers will be able to stay with her while they attend the university at Jena. The savings on room and board will be enough to ensure the education of all our children."

Salome was silenced. She had worried endlessly about how they were to support and educate her boys on a parish pastor's salary. Things had been extremely tight even with just the three eldest at the university in Jena. What they would be like as the other four grew didn't bear thinking about. If Maria Blandina and her husband could provide room and board for her brothers, things would be a lot easier.

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Phillip waited nervously for Maria Blandina outside Countess Katharina's. When she followed the children out of the school, his heart started racing. She came out in a rush, throwing herself into his arms. "Oh Phillip. I'm so sorry. I'm so sorry."

Startled, but pleasantly surprised and heartened at the unexpected display of affection, Phillip wrapped his arms around her in an attempt to comfort her. "What is the matter, my dearest?"

"I'm so sorry, Phillip. But Stepmama heard that I've been seeing you, and demanded to know if you were going to ask Papa's for permission to marry me. I panicked and said yes. Stepmama said I was to bring you to dinner tonight so you could ask Papa's permission." Maria Blandina had tears in her eyes. It sounded like she was begging his forgiveness.

Phillip looked down into the tear filled eyes. "Would it be so hard to marry me, Maria Blandina?"

"Oh no! I would love to be your wife. But it is so soon. And can you afford a wife?"

Phillip crushed her against his chest. "I am sure I can afford a wife, Maria Blandina." He put his hands down to her shoulders and pushed her far enough away that he could see her face. "Maria Blandina Kastenmayer, would you do me the honor of being my wife?"

"Oh, Phillip."

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Phillip Theophrastus Gribbleflotz, pretender to the title of Doctor, dried his clammy hands on his trousers before entering Pastor Kastenmayer's study. Once there, he was confronted by the collar and vestments of the church he had avoided on all but the most compulsory of occasions for a quarter of a century. He felt a bit guilty when he passed over the character references the Kubiak Country folks had obtained. There was one from the management of HDG Enterprizes and one from Hardegg, Selfisch and Krapp. Between them, they established the important facts. That Phillip Theophrastus Gribbleflotz had held a position of responsibility with HDG Enterpizes for nearly four years, that he could afford a wife and family, and that he had no significant outstanding debts. While Pastor Kastenmayer read the references, Phillip thought a little bit about the fur coat he had ordered. The furrier would have to wait on his next dividend from the company before he could pay for that. Then he smiled, imagining the reactions when he and Maria Blandina attended important events wearing matching fur coats. Yes. He was sure the furrier would be happy to accept such an order.

Phillip had been happy to see that there was no mention of a doctorate in the references. A learned man such as Pastor Kastenmayer would have been sure to ask embarrassing questions. He tried to remember what Jonathan Fortney had said when, panicking over meeting Maria Blandina's father, he had asked the up-timer for advice. "Keep your answers simple. Don't exaggerate, don't lie, and most of all, remember to say how much you love Maria Blandina." It had worked for Jonathan. Surely the same rules should work for him.

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"So, Herr Gribbleflotz. You wish to marry my beautiful daughter?" At Phillip's nod, Pastor Ludwig Kastenmayer continued. "I am sorry to say that she has little in the way of a dowry. It has been a struggle to make ends meet and educate all my boys on a pastor's salary."

"I assure you a dowry is not necessary. As I am sure you have read from my references, I earn more than sufficient to provide for a wife and family, and the company provides me with an apartment close to my laboratory."

Ludwig Kastenmayer gave the references a quick glance. The letterhead of Hardegg, Selfisch, and Krapp leaped out at him. A quick glance at the bottom identified the writer of the document. If Arnold Selfisch said Phillip Theophrastus Gribbleflotz was able to support his deceased sister's younger daughter, then Ludwig Kastenmayer had no doubt that Herr Gribbleflotz could. His eyes drifting from the references, Ludwig's attention fell on a short note from his wife. Looking up from the list of instructions, he posed the first of a set of important questions. "Very good. Er, Herr Gribbleflotz, what is it exactly that you do for HDG Enterprizes?"

"There are a lot of processes that need utmost attention to detail. I have responsibility for seeing that the apprentices are properly trained and perform their tasks correctly."

"Is there much chance for your advancement with the company?"

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Phillip paused in thought. Advancement? To what? He was already in charge! But he remembered Jonathan's advice and answered directly and simply. "No. I don't believe I will advance any higher within the company. I am happy where I am, supervising the apprentices and working in my laboratory."

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Pastor Kastenmayer stifled his disappointment. It appeared Herr Gribbleflotz had risen as high as he was ever likely to do in the company. Maybe Maria Blandina could give him the necessary motivation to improve his situation. "Herr Gribbleflotz, I currently have three sons attending the university in Jena. They are a constant drain on my slender pocket, and I have another four young sons to educate still. I was wondering . . ." Pastor Kastenmayer stumbled to a halt as he wondered how to word a request that his soon to be son-in-law provide room and board for three young men he had never met. Not that he wouldn't contribute to their keep, but family didn't charge commercial rates.

"Why, Pastor Kastenmayer. There is an obvious solution. Let your sons stay with Maria Blandina and myself. There are so many apprentices living in the company dormitories that three more won't be noticed. And as educated men they will be a good influence on the apprentices."

Pastor Kastenmayer was a little overcome at the response to his unasked request. It was beyond his wildest dreams that such an offer would be made.

A month later. St. Martin's on the Fields

Salome Piscatora verh. Kastenmayerin, Maria Blandina's stepmama, had been shocked when she was introduced to Herr Gribbleflotz' witnesses at the small, family only, ceremony in which Maria Blandina Kastenmayer became Maria Blandina Kastenmayerin, verh. Gribbleflotz.

It wasn't the fact that Richelle Kubiak had an illegitimate child. Salome had been living in a war-ridden land for the past fifteen years and seen too many women with children of unknown paternity. No, what

had shocked her was that the young woman was a Catholic, and not only was she intending to marry a semi-Calvinistic heretic, she and her fiancée were still willing to show up as witnesses for a Lutheran wedding.

After the wedding trip. Jena, HDG Enterprizes

I couldn't help but notice the large number of young men and women walking idly around the compound when our carriage trundled through the gate and onward toward what I could only imagine would be my new home.

Finally, the hired carriage ground to a halt. There was a mature woman waiting at the door. "Frau Mittelhausen." Phillip pointed her out. I had heard that she was responsible for the apprentices Phillip supervised. I hoped my marriage wouldn't be putting her out of a job.

We had one last kiss before Phillip stepped out of the carriage and then helped me out. The people were all staring. Obviously they knew I was Phillip's new wife. I smiled and waved to them. I was sincerely glad that I had let Richelle make me a couple of beautiful new dresses.

Phillip had just carried me over the threshold of the apartment building when two men, important men judging by their dress, approached us.

"A thousand apologies,*gnaedige Frau* , Herr Doctor Gribbleflotz. But there are important documents that need your signature. If we could have but a moment, so that they may catch the late post."

I was stunned. They had called him Herr Doctor Gribbleflotz. Phillip was a Doctor. I stood staring at Phillip. He apologized for the interruption, a look of beseeching appeal in his eyes, a flush raising in his face. He passed me into Frau Mittelhausen's capable hands before going off with the two men. Shocked, I stood and watched the two men lead Phillip off.

"This way, Frau Kastenmayerin." Frau Mittelhausen led me into the building.

I struggled to understand. Looking back I could see the sign over the gate. HDG Enterprizes. Suddenly it had new meaning. HDG, Herr Doctor Gribbleflotz. My Phillip was Herr Doctor Gribbleflotz. The man behind Gribbleflotz' Aeolian Tranformers, Gribbleflotz Sal Vin Betula, Gribbleflotz Vin Sal Aer Fixus, Gribbleflotz Sal Aer Fixus and the Gribbleflotz Amazing Lightning Crystal. My Phillip was almost famous. He must be rich. And he had chosen to marry me.

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The Essen Steel Chronicles, Part 2
Louis de Geer

by Kim Mackey

July, 1631

Louis de Geer refolded the letters from his niece in Grantville. Interesting information, he thought. But he was a powerful and busy man, much like a four-masted battleship. Battleships do not change course easily or on a whim. Verification of Colette's claims was the first order of business.

The person Louis de Geer turned to after reading Colette's letters was Jan de Vries. Jan was Louis' most trusted agent. He had over ten years experience in the Dutch army as an engineer and artillery officer and was a deadly man with a sword. He spoke and read six languages and had demonstrated his loyalty time and again the past eight years. To someone like Louis, Jan was a priceless asset.

"Jan, I want you to investigate this Grantville. I want to know everything you can discover about them. Military, political, economic. And bring back some evidence that they are really from the future. Perhaps a book."

De Vries nodded. He liked these types of assignments. He had an insatiable curiosity and enjoyed ferreting out information. "You will want maps of the area?"

De Geer nodded.

"Shall I make contact with your niece?" De Vries asked.

De Geer shook his head. "No, she's made up her mind to stay in Grantville. If you make contact she may decide to tell someone." De Geer smiled. "It is difficult for a spy to do his job if everyone knows he is a spy."

De Vries laughed. "True. How long should I stay in the town?"

Louis thought for a moment. "At least a month. That will give you plenty of time to get a true impression. Any less and you might miss something important."

De Vries nodded. "I will leave tomorrow."

November, 1631

De Vries was glad to finally return to Amsterdam. He reported to De Geer the day after his arrival. He would be preparing a written report, but knew that De Geer would want to get his impressions first hand. And there were always items of importance that were best left out of written reports.

"So their military forces depend on their advanced infantry weapons and the mobility of their vehicles?" De Geer asked. "No artillery?"

De Vries nodded. "Oh, they used military rockets at the battle with the tercio outside Badenburg, but it was not the rockets that broke the tercio. They broke the tercio in less than five minutes with rifle fire and the fire of their 'machine gun.' And with less than three hundred riflemen."

Louis de Geer grunted. Formidable indeed. As long as their ammunition lasted. "Vulnerabilities? Weaknesses? How would you attack them?"

De Vries rubbed his chin. "If I were attacking the town I would use well-trained cavalry in a night attack. Infiltrate them in close, attack at night and set fire to the town at various points. It would be much more difficult for the Americans to use their technical advantages. But as long as their capabilities are not assessed properly, they will have the element of tactical surprise."

"And the political situation? Who seems to be in charge?"

De Vries smiled. "A man by the name of Mike Stearns is in charge of their Executive Committee. He was head of their coal miner's guild, although guild is a poor description of the organization they refer to as the UMWA. A capable man."

For De Vries and De Geer it did not matter whether Mike Stearns was a nobleman, coal miner or manure handler. Unlike many in the seventeenth century they concerned themselves more with the aristocracy of ability than the aristocracy of birth.

"But what you will find most interesting, I think, is that Mike Stearns' future consort, who is also a member of the Executive Committee, is Rebecca Abrabanel."

De Geer blinked in surprise. "Balthazar Abrabanel's daughter?"

De Vries nodded. "And Balthazar Abrabanel has taken up residence in Grantville as well."

De Geer knew that the last shipment of silver to Gustavus Adolphus from the Netherlands had been sent with Balthazar Abrabanel. "Did you see any of Gustavus Adolphus' men?"

"Yes," De Vries said, "A few hundred Scottish cavalrymen under an officer named MacKay. They fought together with the Americans against Tilly's tercio at Badenburg."

*So and so*thought De Geer. The Abrabanels in Grantville as well as Swedish troops. Obviously an alliance of some kind had been formed, even if it was just an informal one.

"How are the Jews being treated? Are the people resentful of Rebecca Abrabanel?"

De Vries shook his head. "The Americans believe that all religions should be tolerated. They call it 'Freedom of Religion.' The secular authorities do not impose a state religion and in turn the churches submit to the secular authorities. It seems to work well."

Again De Geer grunted. After the years of strife between the Remonstrants and Counter-Remonstrants in the United Provinces, he could see the benefits of such a system. Not to mention it would be good for business. And if nothing else, De Geer was a businessman. If all religions were tolerated, then the Jews would find Grantville to be a haven. He suddenly sat up. And with the Abrabanels already in Grantville and the daughter of one of them intimate with Grantville's leader . . .

De Geer laughed.

De Vries looked at him with a puzzled expression. De Geer explained.

"So you think the Abrabanels will flock to Grantville? That will certainly provide Grantville with capital to expand their economy."

"It will do more than that," De Geer said. "With Swedish troops already engaged in some form of alliance with Grantville, inevitably Grantville will come to the attention of Gustavus Adolphus. So what do you think will happen, Jan? Think of the combination: money from the Abrabanels, advanced weapons from Grantville, and Gustavus Adolphus. What is most near and dear to the Swedish King's heart?"

De Vries smiled. "*Corpus Protestantorum Evangelicorum*."

De Geer nodded. "*Corpus ProtestantorumEvangelicorum*. I think the politics of Northern and Central Germany are about to get very interesting indeed."

*Now*thought De Geer*how can this be turned to the advantage of a shrewd businessman?* The first step of course, would be a trip to Grantville. Best however to let the situation ripen a bit. Perhaps March or April. But it was time to bring Colette into the picture. Louis knew that Colette had done an excellent job helping to run his brother-in-law's businesses in Liege, no simple task for a woman, no matter how intelligent. And since she was, according to De Vries, now married to an American, she would have valuable insights into the people and culture of Grantville.

De Geer smiled. "Jan, I think it is time you met my niece, Colette."

April, 1632

Louis arrived in Grantville the first week of April. A firm believer in family business ties, he brought his son, Laurens, his brother-in-law, Steven Gerard, and his nephews, Hendrick and Louys Trip. A protégé of Hugo Grotius, Dirck Graswinckel, also accompanied them to provide legal advice.

The twenty soldiers who had provided security on the trip from Amsterdam camped out by Josh Modi's crucible steel plant and the rest of the party had rooms at the Modi inn. After several days of talks and sightseeing they found themselves at Bart Kubiak's foundry and cupola furnace.

"So how did you get the kind of cast iron you needed?" Louis de Geer asked. Josh Modi translated.

"We had to do a three-way deal," Bart said. "We had cast iron from the suppliers outside Grantville, but it wasn't of the quality needed to build steam engine cylinders. The local blast furnaces already had contracts to supply pig iron to their customers. So we offered to sell our pig iron to their customers at a slight discount if the blast furnace owners provided us with cast iron using coke for fuel, which we

brought to them. Even then they were leery until we sweetened the deal by offering to build some metal pistons to provide air blast for the furnace instead of leather bellows. Once they saw how efficient the new pistons were, even with their water wheels, they were eager to sell."

"So how much cast iron did you get?" De Geer asked.

"About one hundred twenty tons," Bart said. "Financing took awhile. Once we get the kinks in the cupola furnace worked out, we should be able to start pouring a good cast iron. It helps us that the quality of the cast iron actually improves with remelting in a cupola furnace. We'll do a lot of experimentation and proof of principle work this summer. When the blast furnace season starts up again in October we'll be ready. We already have contracts for over a thousand tons of cast iron. The coke we'll transport to each blast furnace and each will be fitted with metal pistons for the air blast. As the cast iron comes in, we'll start the actual work of casting the cylinders and other cast iron parts we need for the steam engines we're building for the electrical plant. Those should be done by early spring of next year and everyone can breathe a sigh of relief."

Bart looked around at the foundry he had put so much work into over the previous seven months. "If we have excess over our needs we can provide cast iron for consumer goods like stoves and pots and skillets. Even cannon for the army. And there's already a couple of companies making inquiries.

"The hardest part . . ." Bart patted the side of the cupola furnace affectionately. "Was scaling this baby up. Not quite the same as my old ten inch furnace, not one bit. But it's coming along and we should be in great shape soon."

"So it is the silicon that is important?" De Geer asked.

Bart nodded. "Right, you get higher silicon content due to the speed and heat coke brings to the blast furnace process. You want to do it quickly to prevent graphitization, too much unmixed carbon. You can get higher silicon content to a certain extent by fiddling with wood charcoal in a blast furnace, but after awhile you get diminishing returns. So better to use coke to get the best product. Steam engine air blast is to be preferred over water wheels, of course, and we should have that for our own cupola furnace by next fall."

As they walked away De Geer was thoughtful. Metal pistons for air blast. Now that was something that could be easily implemented in his own blast furnaces in Sweden.

During their tour of Grantville Josh Modi had warned them to be careful of what he termed 'Pie in the Sky.' Many Americans were involved in projects with eager German business partners, especially those turned down for funding by the Executive Committee. But often the Americans did not have a clear understanding of the processes or machines they were attempting to build and the Germans had insufficient capital to fund the necessary research to make the business a profitable one.

De Geer turned to Josh. "How much will the piston air blast improve blast furnace production?"

Josh shrugged. "We've had no expert analysis done yet, but at least fifty percent."

*Fifty percent*thought De Geer. From something so simple. Now that was not 'Pie in the Sky,' but money in the bank.

* * *

Louis set down his wine glass. The meal had been very good. "So, should I invest in Grantville or not?"

Josh smiled. "Actually, after analyzing the strategic picture, we think the majority of your capital would be better invested elsewhere."

Louis de Geer and Steven Gerard looked at each other in surprise. This was not what they had expected to hear.

"Colette and I are still discussing the where." Josh glanced over at his wife. "But we should have that for you by next week. In the meantime, let me talk about the why and the what. Grantville's arrival has disrupted history as we Americans know it. In effect, a new universe has been created. For an up-timer the Industrial Revolution occurs approximately two hundred years in the future. This is a bit simplistic since the Industrial Revolution depended on the previous development of infrastructure."

At Louis' quirked eyebrow, Josh continued. "Roads, canals, bridges, mines and so forth. Something else that happened in the up-time universe was an agricultural revolution which started before the Industrial Revolution but was accelerated by it. Except in the seventeen provinces, agricultural productivity down-time is very low. So an agricultural revolution must come in tandem with an Industrial Revolution in this universe. Increasing agricultural productivity will free more workers to become available for industry. In addition, agricultural productivity will depend in part on the Industrial Revolution so there will be what is called a positive feedback loop."

"Positive feedback loop?" asked Gerard.

Josh nodded. "An up-time term. It means that each enhances the other in turn, back and forth, to ratchet production and productivity ever higher. It was thought that typically it took at least thirty years for a nation to reach 'take-off' so that the industrialization of an economy was self-sustaining."

Josh leaned back in his chair and cupped his hands behind his head. "So what to focus on? Here in Grantville, Colette and I think you should focus on steam engines and agricultural innovations that will enhance productivity. At the site of your main industrial complex you should focus on vertically integrating everything it takes to manufacture steam engines. Steam engines were the driver for the Industrial Revolution, and in the down-time universe everyone will want one. This will mean coal mines, iron mines, blast furnaces, refineries, steam engine works and boiler works."

De Geer nodded. "By having everything in one general location we would save on transportation costs and production costs."

"Yep." Josh smiled. "In addition, since this is a new plant, you will achieve economies of scale by building a complex capable of producing three to five thousand tons of cast iron or wrought iron a year. And you'll have the ability to expand to ten thousand tons per year. The steel plant will be near the iron complex but initially it will operate with iron from your blast furnaces in Sweden or blast furnaces close to the location of the complex . . . perhaps in the Siegerland or the Sauerland. The crucible steel plant can be built quickly."

Gerard took a sip of wine. "What kind of production would you expect?"

"Trained workers will produce five hundred tons a year." Josh thought a moment. "My figures indicate an estimated profit of two to three hundred thousand guilders a year. The steel could potentially be used for payment of goods in markets like Asia, the Levant and Russia where payment is often demanded in silver only."

"Based on what you've said, the location must be somewhere in the Rhineland," De Geer said. "Correct?"

Colette laughed. "Perhaps, uncle, but we still have a little research to do. We'll be ready in a week."

* * *

Six days later they had their first real strategy meeting on the floor above the common room at the Inn of the Maddened Queen. The week had been well-spent. Besides touring Grantville and its industries, De Geer had had a chance to get to know Colette and Josh on a personal level and observe them in unguarded moments. Their love for each other was obvious and their marriage seemed stable. He was especially pleased to see the way Josh treated his employees, four young men he'd hired in Erfurt. De Geer himself believed that a close relationship between workers and management fostered loyalty to the business. He was well known for providing churches, schools and books for his Walloon workers in Sweden.

"So, are you ready to reveal this mystery location?" De Geer asked.

Josh motioned towards his wife. "Colette?"

Colette brought a large rolled-up map from the side of the room and laid it on the table. She put weights at each corner. The map was an accurate representation of central and northern Germany with simple markings for rivers and mountains. The area around Grantville was clearly marked with all political and ecclesiastical boundaries as was an area near the Dutch border.

"Here, Uncle." Colette laid her finger on the map. "We think your major industrial complex should be here."

"Essen?" murmured Steven Gerard, reading the map. "Why Essen?"

Josh smiled. "Up-time it was often said that there were three requirements for a successful business . . . location, location, location. Essen is located in what is called the Ruhr basin, an area between the Ruhr and Emscher rivers. The Ruhr was the center of the German Industrial Revolution because of the coal fields, which are the largest in Europe by far. The coal fields in the Ruhr start at the surface near the Ruhr River and descend downward towards the Emscher. There are many areas that contain anthracite, a coal even more suited for industry in some ways than the bituminous coal in Grantville. There are also blackband iron mines in the Ruhr basin. These are iron ores mixed in with coal in a coal mine.

"The second important factor favoring Essen . . ." Josh swept his hand westward on the map, "is distance to markets. The Ruhr is very close to the Rhine and thus has access to Amsterdam via barge. During the German Industrial Revolution Duisburg was the largest inland water port in the world. Down-time Duisburg is a mile away from the Rhine, so the port might better be placed at Ruhrort at the mouth of the Ruhr, or, if floods are a concern, at Styrum.

"Third, Essen and the area around it are now occupied by Dutch troops. We have a saying up-time: "Possession is nine-tenths of the law."

Louis smiled. He could appreciate that saying.

Josh continued. "While you'll want to make arrangements to obtain the proper legal authority to mine the

minerals and build industries in the Ruhr, the fact that the occupying forces are Dutch should be very helpful for Dutch industrialists. Fourth, you're close to areas with skilled labor. As your industry expands you will be able to more easily recruit iron and foundry and other workers from the Flemish and German iron centers.

"Legally," Josh said, "you'll want to obtain mineral and transit rights so you can get your products to market. Colette has identified three areas of importance. Colette?"

Colette rose and began using a wooden pointer to indicate areas on the map. "This green area is most important. It is Essen Stift and the mineral rights have in the past been controlled by the Abbess of Essen. With Dutch troops occupying the area, however, Essen Stift is currently being administered by the Essen city council although technically they have no legal right to do so."

Colette moved her pointer to an area in light blue near the mouth of the Ruhr. "This area in light blue is currently controlled by the Elector of Brandenburg. When we were discussing this with Jan a few days ago, he remembered that the Elector borrowed over two hundred thousand guilders at seven percent interest from the Amsterdam admiralty in 1616 and that the loan has never been repaid. If someone assumed responsibility for the interest on the loan, it's quite possible that the Elector would consider a land grant as compensation.

"The third area, the one in red, is in Berg and belongs to the Count of Pfalz-Neuberg, Wolfgang Wilhelm, in Düsseldorf. Rumors are that the Count, like many German princes, has debt problems, so once again a loan might be compensated for with a land grant, particularly given the relative worthlessness of the section considering how surrounded it is by other territories. With all three areas you would control a continuous strip of land along the Ruhr River giving access to the Rhine and a number of coal and iron mines."

Louis nodded. It made sense. "What will your involvement be?"

Colette smiled. "Our role, Uncle, will be to expedite the transfer of knowledge so that your industrial complex can start operation as quickly as possible. We will hire the teachers and craftsmen to train your workers and engineers in modern techniques and modern chemistry. We will act as consultants and managers for your Grantville-based industries. In addition, we will constantly be looking for businesses that will leverage your capital or that will enhance the Essen industrial complex. For example, given the chemicals that can be distilled from coal tar gases when making coke, a chemical company might be very profitable."

"So, how do you propose we go about doing this?"

"We were thinking," Colette said, "that you would obtain investors to form a company similar to the United East India Company. Let us say we call it the Essen Steel Company. Naturally you would want to form the company only after obtaining the rights and lands we have already outlined."

Louis de Geer looked down at his fingers. "And your share of this company would be . . ."

Colette smiled again. The negotiations were beginning. "Five percent. Each."

Louis de Geer's nostrils flared. "Preposterous! You may be my niece, young woman, but do not attempt to take advantage of an old man with a bad heart! Three percent for the both of you combined."

Colette forced tears into her eyes. "Uncle, how could you think such a thing! Haven't I always been your

favorite niece? Did I ask for a single guilder for all the hours I spent recruiting the Walloon ironworkers you needed in Sweden? I worked my fingers to the bone for you! Four percent each and twenty thousand guilders in an interest free loan for a new crucible steel plant."

As the two continued, Josh Modi and Steven Gerard looked at each other and smiled. Clearly the love of haggling had been passed on from uncle to niece in some way.

* * *

The negotiations lasted for several days. Eventually Colette settled for four percent of the Essen Steel Company shares. The White Diamond Steel Corporation received a forty thousand guilder interest free loan to expand their crucible steel business while taking on the obligation to train sixty Dutch workers in the crucible steel making process over the next two years. In addition, Josh and Colette were to establish a partnership with Louis de Geer in a company called Advanced Technologies Incorporated which would invest in steam engine companies and other businesses as well as train workers and engineers Louis would send to Grantville.

The day before his departure, Colette and Josh each gave a gift to Louis de Geer. Colette's gift was a cipher system based on matrix algebra so that they could have a form of secure communications.

Josh's gift was an up-time rifle, the BM-59 his grandfather had left him. Along with two hundred rounds of ammunition and two box magazines. "This might help convince some of the investors you talk to that there really is a Grantville."

They spent a bit of time test-firing the weapon.

The next day Louis de Geer left Grantville. With his son, Jan de Vries and the Trips, he headed in the direction of Mainz and Axel Oxenstierna. Dirck Graswinckel and Steven Gerard headed northeast towards Brandenburg.

* * *

"You realize, of course," Dirck Graswinckel said, "that this is absolutely hopeless." He and Steven Gerard were walking along the streets of Berlin toward the palace of the Prince of Brandenburg. "Even if we do get in to talk to the elector, there is no chance that he will make a decision."

The Elector of Brandenburg, George William, often seemed more interested in hunting wild game than in directing the affairs of state.

Steven glanced over at Graswinckel and shook his head. He had been troubled when Dirck Graswinckel had been added to their party at the last minute. Dirck was a protégé of Hugo Grotius. When Grotius realized that he was once again being forced into exile in the spring of 1632, he had appealed to his friend, Gerard von Berkel, burgomaster of Rotterdam, to find a patron for Graswinckel. Berkel had approached Louis de Geer. Despite Gerard's initial misgivings, Graswinckel had shown himself to be an excellent companion and a knowledgeable jurist.

"So what should we ask for? In addition to Duisburg and the area around it?"

Steven smiled. "Let's start with County Mark and work our way down."

"All of it?" laughed Dirck.

"Why not?"

* * *

"These Dutchmen are insane! A land grant for all of County Mark for a mere fifteen thousand guilders a year! Unheard of! The tax revenue from Soest alone is worth more than that!" George William was cloistered with Adam von Schwarzenberg, his chancellor, after meeting Graswinckel and Gerard.

Schwarzenberg's pointed goatee could not hide his large double chin. As he sat down he began adjusting the lace across his shoulders. "Did they say why they wanted the grant?"*Andit's not fifteen thousand guilders you pompous fool,* hethought.*It's 17,360. And when was the last time we collected tax revenue from Soest? Or anywhere in County Mark? Sixteen years?* He shifted a little to get comfortable in the hard chair.*Not that the rest of your nobility is any happier about paying their taxes*.

The elector was Calvinist. The chancellor was Catholic. Most of the rest of Brandenburg's population was Lutheran. It made for some interesting domestic politics.

"According to Gerard," George William said, "Louis de Geer wants to ship coal to Amsterdam for new industries. New industries, while we sit here in poverty being threatened by my brother-in-law's cannon! I won't do it, County Mark is mine!"

Schwarzenberg smiled thinly. "Now you're just being petulant. This is just the beginning of negotiations."

George William pouted. "I don't want to negotiate. I want to go hunting." He looked over at Schwarzenberg with drooping eyelids. "Can you negotiate for me, Adam? I trust your judgment."

Schwarzenberg sighed. He liked power. Usually he enjoyed the fact that George William was more than willing to delegate the affairs of state to him. But there were times . . .

*Ah well,*he thought,*the good with the bad* . And if the Dutch were eager enough, and willing to compromise, there might be some personal gain to be gotten as well. Schwarzenberg nodded. "Your wish is my command, my Prince."

George William's face brightened. "Just don't give up too much of County Mark. It's mine!"

Two days later Adam von Schwarzenberg sat down with Dirck Graswinckel and Steven Gerard in his office in the Palace. "The elector has delegated authority to negotiate on this issue to me, gentlemen."

He motioned for the guards at the doors to leave. Once they were alone he leaned forward. "Now, tell me. What is the real reason Louis de Geer wants County Mark? And what is he willing to settle for? You understand that a grant of the entire county plus the area around Duisburg you are requesting is absurd for just 17,360 guilders a year."

Graswinckel and Gerard looked at each other.

There was opportunity here, thought Graswinckel,*but danger as well. Best to mix the truth with a few lies* .

Dirck arched an eyebrow at Steven and understanding passed between them. Dirck would take the

lead.

"Have you heard of this new town in Thuringia? Grantville?"

Von Schwarzenberg started in surprise. He hadn't expected this turn in the conversation.

"Yes," he replied warily. "But the stories are probably just peasant lies."

Dirck shook his head. "They aren't lies, we've been there."

Schwarzenberg's eyes brightened. "Tell me."

Graswinckel told Schwarzenberg about their time in Grantville, carefully editing his conversation. Schwarzenberg seemed fascinated. "So they are really from the future?"

"Apparently so." Gerard shrugged. "We saw several books with dates indicating they were published in the 1990's, more than three hundred fifty years from now. Many of the processes my brother-in-law wishes to establish in Amsterdam require coal of a particular kind that is found in the western parts of County Mark. The area around Duisburg will function as the port for shipping until locks are built on the Ruhr."

"Locks, I might add," Gerard said slowly, "that will open up more than just the western portions of County Mark. There are other areas in Europe with this kind of coal, of course, but . . ."

Schwarzenberg nodded. Better and better. The Dutch would prefer the County Mark location, obviously. But the message was clear. The price had to be right.

Three days later Dirck Graswinckel and Steven Gerard rode out of Berlin.

"Now that wasn't so bad."

"Won't Louis be upset?" Dirck asked. "We paid more than we were authorized to offer."

Gerard shrugged. "Not by much. Louis expected us to use our judgment. Once it became clear that Schwarzenberg wanted a cut, I knew we'd have to pay a bit more. Ten thousand guilders to Schwarzenberg isn't bad considering it's a one time payment. I think Schwarzenberg is looking to invest anyway. And we got much of the county west of Dortmund above the Ruhr, as well as Duisburg. Louis will be pleased."

"I wonder how he's doing?" Graswinckel murmured.

* * *

At that moment, far to the southwest in Düsseldorf, Louis de Geer was doing just fine. In fact, he had had a much easier time than Graswinckel and Gerard. After a brief stopover in Mainz to talk to Axel Oxenstierna, he had traveled down the Rhine to Düsseldorf, sending Jan de Vries ahead to investigate the state of Wolfgang Wilhelm's finances. As with most German counts and princes, Wilhelm was deeply in debt. The price he had settled for was fifteen thousand guilders, but the piece of Berg that De Geer needed was relatively small and mostly north of the Ruhr River. When Wilhelm had hesitated at the last minute De Geer had casually let drop that he was on his way to see the new Dutch commander at Wesel. The hint was immediately understood: balk at the deal and Dutch troops might pay a visit to Düsseldorf.

Not that Louis had been lying; he was indeed on his way to Wesel to see his old friend, Lieutenant General Hermann Otto, Count of Limburg-Styrum.

When he walked into Otto's office in Wesel a week later and told him what he had done, Otto laughed uproariously. "Ha! Did he turn white?"

De Geer grinned. "As a bed sheet."

"Not that I'm allowed to sally from Wesel, of course," grumbled Otto. "Frederik Hendrik wants a firm flank to protect him as he drives down upon Maastricht. But what am I doing here? I'm a cavalry general, damn it!"

"Frederik Hendrik needs someone he can trust," replied De Geer.

"I know, I know. But still . . ." Otto looked up at De Geer. "Now, what really brings you here my friend?"

De Geer smiled. "I'm forming a company you might be interested in."

After De Geer had explained the formation of his new company and what it would do, Otto smiled. "So, at last Styrum will be important again?"

Herrschaft Styrum was a small, strategically located property near Muelheim. It had grown up around a ford across the Ruhr River along a branch of the old royal road, the Hellweg.

De Geer nodded. "We will be putting in a lock at Muelheim and other fords upriver to help make the Ruhr navigable. That is something we can get started with right away. With your permission, of course."

Otto grinned. "No need letting troops idle in garrison around Essen. You will pay for the labor of course?"

De Geer nodded again. "Certainly. And I hope you will want to become one of the investors in Essen Steel. We will need iron workers as well. Isn't Limburg known for its wire pulling mills?"

Otto laughed. "Indeed. And if what you say about the new pistons for air blast is true, we will have extra iron to provide your iron and steel complex. But you mentioned the possibility of new cannon?"

Otto's voice was eager. Hermann Otto and Louis De Geer had first met in 1625 when Otto was looking for light cannon to keep up with his cavalry. De Geer motioned to Jan De Vries who had been sitting with them.

"Jan can tell you more about that. He loves to ferret out information and he found a gold mine of it in Grantville while he waited for us to arrive."

Jan De Vries smiled. "I was bored by the middle of February so I decided to look for information on the history of fortifications and artillery in the up-time universe, since those were my specialties in the army. That was when I met Oliver Edgerton."

"Oliver Edgerton? A military officer?" Hermann Otto asked.

De Vries shook his head. "Something much better. A historian. With an interest in their civil war. We

made a bargain. In return for telling stories in his history class at Grantville High School, he taught me much about the American Civil War. He was obviously a lonely old man with not many friends in Grantville. Apparently he and his wife had spent most of their time in a town called Fairmont, to the east. At the end he even gave me this."

De Vries carefully unwrapped a musket-like weapon on the floor and handed it to Hermann Otto. "This is called a Sharps rifle. It was used by a military unit called the Berdan sharpshooters."

Hermann Otto admired the rifle and then looked at Jan de Vries. "Can we make these?"

De Vries shrugged. "Probably. But it is a replica, so the parts are actually steel, not iron as most of the original Sharps rifle would be. The hardest part will be making the machinery to make the percussion caps, once we understand how to make the mercury fulminate. And that will take a considerable amount of trial and error. Still, making the minié bullets used in the American Civil War should not be difficult. I have several pages of diagrams with different bullet types. The impression I got from my reading is that forty-five caliber is the most ballistically efficient." De Vries smiled. "But let me tell you about the artillery."

Two hours later Lieutenant General Hermann Otto, Count of Limburg-Styrum, had the biggest smile on his face that De Geer had ever seen. De Vries winked at him. What was the American expression? Hook, line and sinker. Hermann Otto was on their side.

"Real, effective horse artillery! At last!" Hermann Otto was almost dancing with glee.

August, 1632

The last piece of the Essen puzzle fell into place. It happened in Grantville, ten days after the Croat raid.

"But I don't understand, Axel." Gustavus Adolphus snorted. "Why just the mineral rights? Since I'm Emperor, I can simply declare him Baron of Essen. The man deserves it after all these years."

Axel shook his head. "No. Louis is right. If you start secularizing all the ecclesiastical territories in your new domain it will make a lot of princes nervous. But doling out mineral rights . . ." Axel waved his hand. "That will be expected."

"Well, then." Gustavus Adolphus grinned. "Let's surprise De Geer for once. We'll add Werden Stift as well."

* * *

When word of that decision reached Amsterdam, the Essen Steel Company was formed. Its initial capitalization was 2.8 million guilders.

The celebration of the company's founding took place in the mansion of Balthasar Coymans, one of Amsterdam's richest merchant bankers. It was late in the afternoon when Steven Gerard came across his brother-in-law. Louis was staring out the library window.

"Balthasar's been looking for you, Louis. He wants to discuss setting up a branch of his bank in Essen."

Louis de Geer smiled. "I'm coming. I just stopped to watch the butterflies."

"Butterflies?"

De Geer nodded. "Did I every tell you what Colette told me about the 'butterfly effect?'"

Gerard shook his head.

"Apparently, up-time mathematicians theorized that many different parts of the world are very sensitive to initial conditions. So much so, that the flapping of a butterfly's wings could change the weather on the other side of the world."

Gerard laughed. "Absurd!"

"Perhaps." De Geer looked out the window again. "But if it is even partly true, think about what the arrival of Grantville means. Not just a single butterfly. Thousands of people. Dozens of square miles of terrain. Machines, books, and an accumulated knowledge hundreds of years more advanced than our own. The scientific method. Vatican II. Evolution."

For a moment Gerard was silent. "That's a pretty big butterfly, isn't it?"

In Louis de Geer's mind a butterfly the size of the sun began to fold its wings around the earth.

"Indeed."

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Butterflies in the Kremlin: Part 1
A Russian Noble

by Gorg Huff and Paula Goodlett

Spring, 1632

Boris Ivanovich Petrov pulled the horse to a stop and looked around. "This place is almost worth the trip. See the cuts in the earth where the land was changed. Look at these hills. The structure is different from those outside the ring. Everything inside this Ring of Fire is different."

Vladimir Yaroslavich nodded and pulled his horse to a stop beside Boris. Then glanced at Grigorii Ensheevich who was staring his mouth agape. Vladimir hid a smile. A speechless Grigorii was an unusual sight. Perhaps it might shut him up about having left the trading in the hands of Fedor Ivanovich Trotsky. Grigorii was a family retainer. Specifically, he was Vladimir's man. He had been with Vladimir since Vladimir was six. A huntsman on the family estates,he had had more to do with the raising of Vladimir than his father had. He spoke only Russian and was illiterate. But he had a sure instinct for the ground and spotted things most people missed. He also bargained like a Moscow fishwife and had no respect for the*dvoretskii,* the bureaucratic nobility. He had been complaining since they had left Jena, about leaving "that bureau man" in charge of trading the rest of their goods. They'd traded furs for the horses and some cash. As usual, they had brought more goods, mostly furs, than money. Muscovy was always short of cash, which didn't make being a diplomat easy.

Most of their entourage was still on its way from Jena, but neither he nor Boris had wanted to delay long enough to sell all their trade goods or drag what was left along with them. They had left the matter in the hands of Fedor Ivanovich and ridden on ahead, with just Grigorii Ensheevich and Makar Labkovich.

"I was convinced it was a fraud of some sort." Makar Labkovich was shaking his head in wonder. "But anyone who could fake this kind of thing would have too much power to need to fake anything."

Vladimir nodded to the bureau man and patted his horse. "I believed it was a preposterous lie right up until we got to Jena. It was the up-timer and that APC that made me start to suspect it might not be. Once you've seen one of those 'cars,' well, you must believe that something has happened."

"For me it was the view from Rudolstadt." Boris grinned. "But I am a cynic. Cars can be made by men. Not the 'Ring Wall."

Vladimir remembered his first sight of over a mile of the ring wall. It had been beyond impressive. It was as though God had taken a scoop out of the earth and replaced it with a scoop of something else. He could see Boris' point.

Vladimir looked over at Boris. Boris Ivanovich was an unassuming little man. The sort of man who could blend in anywhere and not be noticed. He didn't look at all impressive. Appearances lied. Boris was a bureaucrat of Muscovy, specifically of the*Posol'sky Prikaz* , the Embassy Bureau or State Department. He was an experienced spy and a well traveled agent. He spoke, read, and wrote Russian, Polish, Danish, German, English, and, of course, Latin and Greek. He had been assigned to accompany Vladimir Petrovich on this 'fool errand' by the czar's father in an attempt to keep the czar from looking any more foolish than could be avoided.*And probably* , Vladimir acknowledged,*to keep me out of trouble* .

* * *

Boris had his own thoughts about the situation. Prince Vladimir Petrovich Yaroslavich had actually been quite easy to babysit. Vladimir spoke English, a result of his sister's being married to an English count—and what a scandal that had been. More important, though, Vladimir listened.

Boris' rank in the bureaucracy that ran Muscovy was higher than Vladimir's, or had been. He had been demoted without prejudice for this mission since Vladimir was a*knaiz,* a prince. Vladimir, as a prince

with almost independent lands—combined with his friendship with the czar—was almost certain to end up as a boyar of the cabinet. It would be totally inappropriate to have him under the orders of someone with Boris' lack of pedigree.

The fact that Grantville wasn't a hoax presented Boris with both problems and opportunities. Powerful people didn't like to be proven wrong and there was more than a little bit of a tendency to kill the messenger in the Russian government. On the other hand, the fact that Grantville was not a hoax meant that keeping the czar from looking foolish in sending the mission just got a whole lot easier. Certain people at court were not going to like that, either.

Still, since Grantville did exist, a network of spies would have to be put in place to watch it. Boris was in an excellent position to head up the Grantville office in Moscow, which would be an important one. Poland was Russia's great enemy at the moment and Germany was just the other side of it. Now a section of Germany was peaceful and relatively prosperous instead of being torn up by war. The up-timers, as the locals called them, had to be encouraged to take Sweden's side. So far they had friendly relations with the Swedish king but nothing more than that.

"It is not such a large place." Vladimir was still staring at the scenery, patting the horse's neck now and then. "And there are not so many up-timers as I had thought."

"A small place, yes, but it will play a large role." Boris had seen 'cars' or 'APC's,' whatever they were called. He had seen the improvements in the roads outside of the ring as well as a horse drawn device that made those improvements faster and with less work than you could imagine without seeing it. This place would affect the world. "We will need to find any centers of learning they have. Gather quickly the information they give freely. If they really do give it freely."

* * *

"I would like some information."

Cecelia Calafano looked up at the man in front of the circulation desk. Not all that far up. He couldn't have been more than five feet four or so. She didn't recognize his accent, it sounded vaguely eastern European. "Your name is?"

"Boris Ivanovich Petrov, of Muscovy."

"Ah." Cecelia smiled. "Russian, then. I wondered about your accent."

The man standing in front of her nodded abruptly. "Yes, Russia. That is what we have called ourselves for some time now. It is the rest of Europe that still calls us Muscovy. That has changed in the future?"

"Yes, it has," Cecelia confirmed. "How can I help you?" He was a fireplug shaped man, short and solid with a thick, heavy beard going gray. He was well dressed with a lot of fur trimming.

The bearded fireplug smiled, she thought. It was a bit hard to tell under the beard and mustache but his eyes smiled. "We've been sent to determine if this place is real."

Cecelia laughed. "I've lived here all my life. Trust me it's real. What did you want to know?"

Herr Swartz, the next in line, was clearing his throat again. Cecelia gave him a look and he settled down. You don't mess with the librarian. Mr. Petrov handed her a list. Cecelia took a quick look. It was in

English carefully written but idiosyncratically spelled. She sighed. Consistent spelling was some time in the future. She could make out most of what he wanted. "How to make telephones. A history of the Romanov family. How to make cars. A history of Muscovy, or Russia. I think you're probably in the wrong place." The bearded fireplug was giving her a doubtful look. "Never mind." She sighed a bit. She had run into this before, though they got it more at the National Library and Research Center at the high school. "Some of this you will be able to find here. Like the history of Russia or part of it. I'll get you some books."

She got her new Russian customer settled and went to help Herr Swartz.

* * *

Boris examined the books.*Russia Under the Old Regime* by someone called Pipes. He looked at the table of contents. Chapter 4: The Anatomy of the Patrimonial Regime. Boris tried to translate the words to Russian. The body parts of the fatherhood rulers? That sounded positively obscene. Boris worked it out. Anatomy meant the structure of a body . . . perhaps it was used here to represent the structure of the government. Patrimonial regime . . . might mean inherited rule or it might mean government by the church. Was Muscovy going to be ruled by the priesthood? Considering the relative political strengths of the patriarch and the czar, it could happen. This would be monstrously time consuming. He looked at the other book perhaps it would be clearer. What was the USSR? What was the revolution of 1917? For that matter, what was St. Petersburg? At least, that's what he thought it said. There was no St. Petersburg in his Russia.

He read through the books as well as he could for several hours, making notes. Some things were clear enough. The year of birth and death of the czar and his son and his grandson. Others weren't. The analysis was just weird. It was all there, Boris thought, but looked at as though through a prism. The light split into the spectra and the image was lost. Was this Pipes an idiot? Upon considering the matter,Boris didn't think so. So might a citizen of Caesar's Rome respond to a history of Rome written by a modern scholar who had never seen the Coliseum or been present at a triumph.

The woman stopped by a time or two. Handed him what she called a magazine. "Here," she'd said once. "You might find something in this."

It was an old, fragile thing, this magazine. And what did*peristroika* mean? Boris knew what restructuring meant, but the word seemed to be used a bit differently here.

Much befuddled, Boris gave up for now. It was getting late and he needed to get back to the room they had rented. He wasn't going to figure it all out in a day.

It was as he was putting things away that the librarian came and sat down at the table. "Can I give you some advice?"

Boris nodded cautiously.

"If what you wanted was a nice place to come and read an occasional book, this would be the place for you and I encourage you to do that. However, this isn't the place for what you're after. The Grantville public library was never intended to be a center of research. It was designed to be a small town library at the tail end of the twentieth century. We had inter-library loans and the Internet. Before the Ring of Fire, if we didn't have the book someone wanted, we could get it in a few weeks through inter-library loans. What we had on the shelves were the books most likely to be wanted in a small town. A small town that didn't need to make telephones or automobiles. We could buy them. We have books on how to fix an

automobile. Those books usually tell the reader how to install a new part that they are expected to buy from an automobile parts supply store that got its parts from a manufacturer in another state. What I mean is, they tell you how to fix a car not how to make one from scratch."

Boris nodded politely but he was wondering if this was perhaps how they were hiding the important information. That concern decreased as she continued.

"Shortly after the Ring of Fire it was decided to use the library at the high school as our national library, our Library of Alexandria." The woman gave him a questioning look and he nodded his understanding.

She continued. "In it, we have at least one copy of almost all the books that came though the Ring of Fire. In those books there is enough information to tell you how to make an automobile, at least most of it. Even there, its not all in one book. It's scattered around in books designed to teach children the basics of how things work, in biographies of the people involved in the inventing of the automobile and itsmass production and so on." The woman took a deep breath. "That makes it a treasure hunt. It's hard even for a professional to know which book to look in to find the thing you're after. Trying to do it on your own . . ." She shrugged. "I recommend you hire a professional researcher. If you don't have the money for that, you can put in information requests and the library researchers will get around to it as they have time. Your other option is to take the library science basic course at the high school and pay the usage fees."

Boris considered. The little talk she had given him was well rehearsed. "How often doyou give that little speech?"

She smiled. "About twice a week."

"About the usage fees you mentioned . . . You don't have them here. Why not?"

"We're funded by the national library. We have been since a few months after the Ring of Fire. There was a minor fight in the emergency committee about that but public libraries being free for public use is a long standing tradition up-time. There was a bigger fight about having fees to use the national library." She laughed. "By the time that fight got going there were already millions of dollars worth of products coming out of the library. People were wondering why the cash-strapped government should pay to make a bunch of people rich. A compromise was worked out. You can get anything you want out of the national library and research center free, if you're willing to wait your turn. And it can be a long wait. You can also pay to get it faster. Quite a lot of people pay either by paying a professional licensed researcher or by taking the course and paying the usage fees."

Boris had a lot to think about as he walked back to the room they had rented.

* * *

Master Vladimir was overly generous, Grigorii Ensheevich thought. They sat in a small room. All eight of them, now that the rest of the party had arrived from Jena. Finding room in the over-packed Ring of Fire had been a challenge. Finding enough room had been effectively impossible.

The lodgings were fantastically well appointed but horribly cramped. The eight of them shared a single bedroom with its own 'half bath,' an indoor toilet and sink with 'faucets' that provided hot and cold water. They had access—from two to four in the afternoon—to the main bath, where they could take hot showers.

For this they were paying more than they would pay for four rooms in a good inn. And that would have

included meals and servants. That was beside the point, though. The up-timers, as they were called, were claiming that they would provide most any of the knowledge they brought with them to anyone. Which was an obvious lie. As he'd just said.

But the bureau man Boris Ivanovich Petrov was shaking his head. "I don't think they are lying about it." *He was too clever by half for a bureau man,* Grigorii didn't say out loud. "Understanding the information is a problem. The English language . . . it has changed. Very much so. The woman at their 'library' freely gave me books to look at. Books that will need to be looked at again. I've made notes." The bureau man waved a sheaf of papers in the air. "Pages and pages of notes. But very few of them make sense."

Grigorii watched as his prince read the notes the bureau man handed him. Vladimir looked at them closely. "This is clear." He pointed at a line of the writing that Grigorii couldn't read. "Czar Mikhail will . . . have only a few more years. The patriarch . . . much less."

"Perhaps not." Boris' face showed very little. "I asked about that. These up-timers . . . they do not understand what has happened. But their arrival changed many things. The librarian said that those changes will, already have, changed history. A lot. When I saw that place in the book, I, too, was shocked. The woman was very kind. She asked what was wrong, then saw the page I looked at. She said that there were things we could do. Send the 'aspirin.' That it might help." Boris nodded to himself. "With the first courier, we shall." The bureau man waved the notes aside. "That is not what I wished to discuss. The public library we can use with no trouble but the real wealth of knowledge is in the national library. From what the woman said, using the national library will entail some cost . . ." He shrugged. ". . . or unacceptable delay. I am not that concerned about the fees to hire a researcher." Grigorii snorted at that. Hecouldn't help it. Boris was a tight one.

"I am concerned about two things," the bureau man continued. "First that the researcher might edit the reports and second that he might sell reports on what we were looking into to agents from other lands. I think we need someone to take the library science course and, at the very least, watch any researcher we hire. For some questions we will want to do the research ourselves."

Vladimir nodded. "That sounds like a job for me. I speak the language and am less experienced in some of the other work we will need to do here."*In other words,* Grigorii thought,*Vladimir is not a spy like the bureau men .*

Boris was nodding. "That was my thought." He smiled. "That will leave the rest of us time to learn how the rest of Europe is responding to this place. Also if you would write the letter to the patriarch I would be grateful. That is an area where I suspect you have more skill than the rest of us combined."

* * *

Most esteemed Patriarch,

This is not what you expected to read in my report. Nor is it what I expected to write. The German officer was not insane. No one knows the why of it but the Lord God has seen fit to do something remarkable here. I am sitting in a room that has a window covered with a large flat piece of glass. It lets in the sunlight and the scene outside with no noticeable distortion. In the next room you can turn a knob and have hot water. These things could be the work of skilled artisans of our own time. However, they are not all we have seen. There are works of man that could not have been done by the men of our time.

The Ring of Fire itself could not have been made by men of any age. I do not believe that it could have been made by any power short of the infinite power of God. What they call the Ring of Fire is a circle, as near as anyone can tell a perfect circle, six miles across. Within that circle the land has been replaced with land of a different nature, made of different sorts of stone. The hills are as different as though in a single step you traveled a hundred miles. In the months since the event there has been some weathering. In spite of that, it is easy to see the perfection of the cut. The evidence we have found is too consistent to be false. They are from the future.

As I write this, I know that you will realize that I am only reporting what I have determined from this up-time history. The news is not good. War with Poland, right now, is destined to fail. Russia does not have the resources needed. As Colonel Leslie has said many times, the army lacks the proper training and discipline.

I must urge that the attempts to modernize the army take precedence. Also, that any attempt against Poland be delayed until that is complete. See the report attached.

Additionally, and this is most important, you are at risk, as is your son, our Most Holy Tsar. The death of either of you would leave Russia exposed to more troubles. I include in this package a vial of medicine that may assist you both, in the hope that it may help. The histories speak of your death in the year 1633 but they do not specify the cause. I have spoken to the up-time physicians, who tell me that this medicine is often prescribed to those at risk of heart failures. It has the added benefit of relieving aches and pains.

Also, see the pamphlets translated with the aid of up-timers. They tell much about the avoidance and treatment of disease. I urge you most sincerely to give them full credence. The doctors from up-time are already considered miracle workers by the local Germans . . .

Vlad had struggled with that letter. How did you tell a man that he was scheduled to die soon? Perhaps, though, the patriarch would be comforted by the rest of the information he was sending.

* * *

They had been in Grantville for what seemed like a few weeks, although it was stretching into months. Boris was amazed at the number of agents there, several of whom he was on good terms with. "So the Cardinal has decided to oppose them?" Boris wanted to be sure of what he had heard.

"That is what I've been told," the Cardinal's spy confirmed.

When the*intendant* left, Boris sipped his weak tea and waited for Vladimir to join him. "Most confusing," Boris admitted when Vladimir sat down. "France plans to join with Spain to oppose the up-timers and the Swede. It makes no sense at all. France is surrounded by the Spanish Habsburgs and in danger of being swallowed by them. Yet they will oppose the Swede now, instead of supporting him."

Vladimir wasn't as adept as Boris in international politics, but he understood the ramifications. "What is it about this place that makes the thought of a Europe dominated by the Habsburg beast a better sounding alternative?"

"Granted," Boris muttered, "an alliance between Grantville and Gustavus Adolphus would potentially make Sweden much more powerful, but at least for the moment that is all to the good. Europe is like a

chess board with a dozen players and now there is another one, suddenly. And it's located in a strategic position near the center of the board. Could it have thrown the French Cardinal off his game?"

"I wouldn't count on that," Vladimir disagreed. "The man thinks a dozen moves ahead. We probably need to be looking at the long term consequences of a more powerful Sweden, as well. Muscovy and the Czar have probably given the Swede as much, or more, money than Richelieu has. Not in cash, but we have been selling grain to Gustavus Adolphus for the last several years and at a bargain price."

Boris took a sip of his tea. "It served to keep Poland in check. And Poland is the major enemy. Now, though, I wonder. If France no longer supports the Swede, should Muscovy continue that support? And I must admit that these up-timers are very confusing. These people can't seem to make up their minds whether they are peasants or nobles."

"I think it's a more subtle thing, Boris." Vladimir was pensive. "I think they honestly see no difference between the czar and a peasant. Nothing innate, anyway."

"The danger is . . ." Boris scratched his beard scanning the café again. "That attitude could spread."

"Is spreading." Vladimir nodded. "The Committees of Correspondence, I believe they're called are doing their best to spread it. I don't think they will stop at the borders of the New United States."

"How is it possible to have the good things of the future, the roads, the windows . . ." Boris waved his hand at the "juke box" that played in the corner and then used that same hand to indicate other items of technology. "How can we have all this and not have the ideas spread?"

As a*dvoretskii* , a rank that might be translated in the West as gentry or lower nobility, or in the up-time US as a government employee, Boris held lands and enoughpeasants to work them from the czar. That was what he got instead of a salary. He didn't want Grantville's ideas spreading to Russia. Without the peasants, his "pay" would be worthless. He thought about the power supplied by the generators, the improved roads, medicines. Those he did want.

"I don't want the radical political notions," he said. "What we need is a Grantville we can control."

Vladimir considered for a moment. "One cannot control so many people. Particularly not these."

"But one of them . . ." Boris' smile was grim. "One of them, perhaps two. That would be well within possibilities, don't you think?"

"True." Vladimir took a sip of his own tea. "A single up-timer or two. With all of his knowledge, in Muscovy. The more radical notions wouldn't go anywhere, not with just a single person."

Boris mused for a moment. "How much will one person know?"

"Not enough." Vladimir considered. "Someone will need to stay here to ship information back to Muscovy." He gave Boris a look.

Boris looked back steadily. "It will have to be one of us but which one?" He answered his own question. "I think it should be you, Prince. Because as egalitarian as the up-timers are, the Germans will offer you more then they will offer me. Nor am I convinced that the up-timers are truly as blind to rank as they think they are."

Vladimir nodded. "Very well. I don't object. That still leaves acquiring an up-timer. Or do you think with my staying here we don't need one?" Now it was Vladimir's turn to answer his own question. "I think you will need someone that speaks and thinks in up-timer English. Sending me a question every time a word doesn't translate well would delay things too much."

"Probably the best way," Boris acknowledged. "I'll start looking."

Vladimir nodded. "Yes. Meanwhile now that we have the more normal pursuits in order, I can finally sign up for the library usage class.It has a waiting list."

Early 1633

Vladimir was better educated than a great many of his peers. Even so, the library science class was a hard row to hoe. Perhaps the biggest obstacle was that he had never in his life been in a class. He had had tutors. Having to raise his hand to ask a question was a new experience for him. Since Vladimir spoke English,he was in the up-timer library course. For the second time. Unfortunately, the English he spoke wasn't quite the English they spoke. The differences were especially apparent in technical areas, and had caused him to fail the first time through. For instance, the word technical was new to him, though he could mostly work it out from the Greek. The desks, well, they were not what he would call comfortable. And it didn't help that the room was quite crowded. Stuffy, it was.

"Excuse me."

The words came from a young woman. Vladimir looked up at her. "Sorry," she said, smiling. "I need to get there." She pointed. Vladimir pulled his feet under the undersized desk. The woman stepped to the next desk over and sat down. "Thanks."

Vladimir glanced over at her a number of times during the presentation. "Why Melville Dewey was a Great Man." Vladimir didn't know. But the numbers made sense to him. The explanation of the card catalog and the way to find information—now that was what he needed. He scribbled notes furiously. So did the woman.

She smiled at him again when class was dismissed.

Perhaps she would do so again. At the next class.

Vladimir was surprised to see the same woman at the research center the next afternoon.

"Don't I know you from somewhere?"

She smiled. "We have class together. I remember you from that."

She had a pretty smile. Well, rather a lot of her was pretty. She was too thin. Most of the American women were too thin. "You are taking the class, but you are working here as well?"

"Just part-time right now. Oh, I'm Brandy Bates." She extended her hand. Vladimir took it and performed the odd handshaking ritual that was so prevalent in Grantville. "What can I help you find?"

Vladimir remembered Boris' advice,*make a friend of one of the students* . She was a student, wasn't she?

He handed over a list. A long list. The woman stapled it to the form she filled out. "I'll give that to one of the researchers," she said. "You understand about the fees?"

"Not entirely," Vladimir admitted. "Perhaps you would be kind enough to explain. Perhaps over dinner?"

She smiled again. "Why not?"

* * *

"Where would you like to eat?" Brandy asked. Vladimir had met her outside the doors of the school. He was a bit taller than she was, Brandy noticed.

"Ah . . . I am unsure. Is one place more appropriate than another? I was told that asking a woman to dinner was an accepted way of getting to know her here, but I'm not really informed on all of your customs." Vladimir grinned down at Brandy. "I would not wish to, ah, what is phrase . . . put your foot in my mouth?"

Brandy snickered then began laughing. "This isn't the first fractured saying I've heard, but it's one of the best." Seeing Vladimir's confused look, she shook her head. "Never mind. I'll explain it later. It's too noisy to hear yourself think at the Gardens and the band is there tonight, so it will be even worse. You can't say anything at Cora's without Cora listening in, so probably the best place to go for a quiet dinner is Tyler's or Marcantonio's. Castelanni Brothers, if you really like good pizza. Either one of them will be fine."

Vladimir made a sweeping gesture that invited Brandy to walk beside him. He had no idea what pizza was, but he'd try it. "Very well. We shall do that. Now, please, tell me about the fees you spoke of. I intend to do my own research when I finish that class. Why do I have to pay fees for this?"

"The class helps to know where to look for the books and how to avoid damaging them. Anyone is welcome to do research, after all. But it doesn't work if you just come in and start browsing around; we found that out in a hurry. There were more people than the national library could support. Last winter there were a couple of fist fights over who got to use a book first. So, Laura Jo Cunningham decided that what was really needed was a group of people who could read English and do the research for other people. That's what I plan to do."

"That sounds sensible. I should imagine that someone who knew how to do research would be helpful. But why the hourly charge or the long wait? That I do not understand." Going up and down the hills on foot did take time. But it was time Vladimir could put to good use, acquiring more information.

Brandy waved a hand. A shapely hand. "Everyone has to make a living, you know. The government couldn't afford to fund as many researchers as we needed. The demand just keeps growing, too. In the beginning they were all paid by the council, but they kept falling behind and needing more researchers. As word got out about what we had here more and more people came to see and stayed to learn. Then, someone offered someone extra money if he would go back and check on something after he got off work and that kept happening. It got so that everyone was doing it and eventually, Laura Jo decided that would be a good thing, really."

"A good thing?" The question in his voice was obvious.

Brandy grinned a bit. "The problem is we have two sort of conflicting goals. We want the information in the national library to be available for anyone who wants to study it. At the same time, we don't want the national library to use up any more of the national budget than it absolutely has to. In the public library in Grantville it's first come first served, but here it's researchers or you have to get a license and pay an hourly fee for use. If you have a license but can't pay the fee then in exchange for using the library, you have to do*pro bono* work, one hour of*pro bono* work for every hour of use."

"*Pro bono*, for the good . . . Ah . . . they don't get paid," Vladimir said. "So for every hour that someone there works for himself, and gets paid by people like me, he has to work another hour for the privilege of using the library. Those are the requests that take more time, then?"

"Doing the*pro bono* work pays for the library time. Not everyone can afford to pay a researcher. In fact, most people can't. But the money to pay the researchers has to come from somewhere. It ends up coming mostly from people that are in a hurry or need something special. Sometimes from people who think we're trying to hide something and want to look for themselves. They just pay the hourly usage fee and look for themselves."

"And are you not trying to hide anything?"

The girl, well, young woman looked offended. Vladimir didn't understand why. It was a perfectly reasonable question. Not trying to keep the information for themselves or sell it at the highest possible price was unreasonable, not wondering if they really meant such an outrageous claim.

"Most certainly not. Anyway, not everyone is in a hurry. Some people are willing to wait. Meg makes up the schedules and the priorities. If it's something that the country needs to know right away, well, we all pitch in until we find the answer, if we can. Even us students. So you've got several choices. Either ask a question that we really need the answer to and we'll all try to find it. Or ask a question that you alone want the answer to and pay a researcher to find it for you. Or wait until they can get around to doing the research on a*pro bono* basis. Or learn to do it yourself and pay a usage fee. You can do it by the hour or pay a monthly fee for unlimited access."

"And if I become a researcher, I also will have to do this*pro bono* work? For anyone?"

"If you don't want to pay." Brandy looked at Vladimir with a mischievous sparkle in her eyes. "It depends on how much you have to spend, I guess. If you want to, you can just pay the fee. Some people can't afford that and do the*pro bono* work instead. And it's a valuable service, you know. Some of the questions are pretty boring, but others aren't. I figure that a farmer needs his answers just as much as anyone else, so I don't mind doing the*pro bono* work, which is all they let me do right now. But I'll be passing the GED soon, I hope. Then I'll be a researcher, too."

* * *

It was just an impulsive move, really, Vladimir told himself. He just thought he would stop by the classroomthat evening. Perhaps someone would be free for dinner. He wasn't specifically thinking of Brandy Bates.*Certainly not* . Granted she was different from the women he was accustomed to. Very focused on her work. A bit more assertive than he preferred. So he wasn't looking for her, there was no reason for him to be. If he found his mind returning to her more and more often, it was just because he was trying to understand this new culture.*That was all.*

Vladimir was surprised to see Brandy and another young woman being met by another man. Another

man who was younger than he was. The man leaned over and kissed Brandy's cheek. Vladimir wasn't jealous certainly not he was offended for Brandy's sake. That was all but Brandy did not seem offended. In fact she had presented her cheek. Just then, Brandy noticed him.

"Vladimir, come meet Justine and Henning," she called. "I told you about them, didn't I?"

Vladimir walked a bit closer to the trio. "Ah, no. Not that I recall." She didn't seem embarrassed by Vladimir having seen the kiss. Perhaps the fellow was just more familiar with the up-time customs. He was certainly more familiar with something than really Vladimir liked.

The younger man held out his hand. "Henning Drugen, and this is my sister, Justine." Henning looked at Vladimir with obvious curiosity. "Brandy told us about you at dinner last night. I understand you're from Muscovy."

Dinner last night? Did the woman never stay home? Vladimir wondered again at the strange customs of Grantville.

Brandy motioned toward the town. "We're headed home. Mom will be there in an hour or so. We need to get dinner cooked. Would you like to come along?"

Vladimir nodded a bit stiffly and found himself walking with Justine. He wanted to understand what was going on. Did all these people live together? What was Henning to Brandy? They walked closely together and appeared to be rather too familiar with one another. Vladimir felt increasingly certain that there was something out of kilter here. Well, Boris had told him that after a while you developed an instinct. Maybe that was it. Maybe Henning was a spy. Could it have been a brotherly peck? It hadn't seemed like it. Henning was altogether too comfortable with the customs of this strange place.

Vladimir knew that many of the families in Grantville had taken in refugees and adopted them with varying degrees of official recognition. Why was he bothered by it anyway? Brandy might be an up-timer but she wasn't really noble. He couldn't be jealous. It really must be his spy's instinct kicking in. Perhaps Henning was trying to compromise her, use Brandy as an information source. Find out what information the Muscovy delegation was searching for.

Vladimir was quiet as he accompanied them home, watching Henning, the spy. Henning must be very, very good. Vladimir, in spite of his careful observation, couldn't find a thing about him that didn't fit his role as a refugee.

Almost he decided to excuse himself and avoid Brandy in the future. On the other hand, he needed her, or someone like her, for access to the knowledge in Grantville. No, he would be polite and cordial and continue to cultivate her as a source. Vladimir knew he was lying to himself even as he decided this.

* * *

Dinner was a pleasant torture. Pleasant because the conversation was interesting and the food was good. Torture because it was becoming clearer and clearer that whatever Brandy's interest in Henning was, Henning's interest in her was not in the least brotherly. Vladimir was a diplomat and a good one, if young and not that experienced. Part of that was reading people and a lot of it was knowing when to keep your mouth shut. Henning had apparently decided that Vladimir's interest in Brandy was more than professional. He, a bit clumsily, tried to bring up things that would cast Vladimir in a bad light. That was actually helpful. It gave Vladimir clues about what to avoid and how to handle subjects like serfdom in Russia. Yet it didn't fit with Henning's previous skill at pretending to be just a refugee. What was the man

after?

Vladimir decided to turn the subject to something else he was interested in. Turning to Brandy's mother, he said, "Your home is very nice. I am looking for a house to buy here in Grantville. Do you know of any that are available for purchase?"

Donna shook her head. "Not in the town itself. Everyone is holding on to them, right now. But there is that new subdivision out to the north of town. What are they calling it again, Henning?"

"Castle Hills." Henning's face came alive. "You might be able to find something there. A lot of new homes are being built out there and it is on the bus route now. I work there, learning the electricity."

Vladimir filed that information away and determined to go and see. "Perhaps I will go and look. Meanwhile, I have very much enjoyed the evening, ladies, gentleman." He nodded at each of them. "But it is growing late and I am keeping you from your business. I will take my leave. Perhaps," Vladimir looked directly at Brandy, "you will consider allowing me to entertain you one evening, after I have acquired a home?"

Brandy blushed a bit. She cast a look toward Henning, who was glowering at Vladimir. The she appeared to shake off his opinion and answered, "I would be very flattered."

Vladimir felt a bit triumphant as he left the Bates' home. That was simply because he was cultivating Brandy as an information source. So Vladimir insisted to himself anyway. Perhaps Henning would make a mistake in his treatment of Brandy. Vladimir didn't think she would care for an overly protective attitude. I need a beer, he thought. I believe I'll try the loud and raucous Thuringen Gardens.

* * *

"I wish all this hadn't happened." Bernie had to admit it was really good beer he was muttering into, but it didn't make up for all the crap he'd gone through since the Ring of Fire.

"You wish what hadn't happened?" a well-dressed man asked from the next table. Well, well-dressed, but a bit weirdly. This guy's clothes didn't look much like those of any German he'd seen. But Bernie was getting used to weird clothes. There were a lot of them around these days.

Bernie raised his mug and indicated the world around him with a sweeping motion of his hand. Unfortunately, about half the beer spilled. "Damn. Something else to wish hadn't happened."
The man at the next table chuckled out loud. "You should be more careful. The beer is good, and should not be wasted. It's a bit, ah, high-priced to throw around the room."

"No shit, Sherlock." Bernie snorted. "Oops. Sorry. I forget sometimes that I'm not back in the world. I guess I shouldn't say things like that anymore. Somebody might take it the wrong way."

The man rose. "Perhaps I could join you at your table?" He walked the two feet that separated them. "I would like to know what 'no shit, Sherlock' means. You Americans, you have such odd expressions. And another one I don't understand is 'having a screw loose.' And how that is different from 'being loose' or 'screwing around'?"

"Sure, join me." Bernie used his foot to move a chair out from under the table. The stranger might buy him a beer if he answered some questions. Bernie was broke again. He was drinking too much beer lately, and didn't have enough money to pay for it, not from working on the work gangs. "Have a seat."

"I am*Kniaz* Vladimir Yaroslavich of Muscovy." The stranger took the vacant seat. Vladimir waved and the waitress and mimed his desire for a pitcher of beer. The waitress nodded.

"Ah... is*Kniaz* your first name?"

"No.*Kniaz* is a title. It can mean anything from a prince to a duke or perhaps a count." Vladimir shrugged. "I am a relatively low ranked*kniaz* . So, what did you mean by 'all this'?"

"I mean all of it." Bernie waved at the room, carefully not waving with the beer mug. "The Ring of Fire mostly, I guess. It kind of shot my career down the toilet. No cars to work on, at least not any of the really good ones. I did my part. I was at the Crapper and Jena. But there's too many mechanics for the private cars we have running. No way I'm going to tie myself down into the Mechanical Support Division with dopes like G.C. Cooper and Bobby Jones working for the government.So now I'm stuck on the work gangs, trying to get by."

"You are not in your army?" Vladimir asked. "I thought most of the young men were in the army."

"Nah. Reserves. I'll go if they call, but not until. I didn't end up covered in glory like Jeff Higgins. Imagine a nerd like Jeff Higgins ending up a hero." Bernie still remembered Jeff from when they had been in high school together. Bernie had been a senior and a football star. Jeff, a few years behind, was a glasses wearing nerd. "Not me, though. Just the breaks. They haven't been running my way since the Ring of Fire." He paused a moment, thinking, then shook his head. No matter. "What's Muscovy? Your turn to answer a question."

It was a question Vladimir had gotten before. "Russia, but most nations of western Europe don't call it that yet."

"So what are you doing in Grantville?"

"Spying." Vladimir grinned.

"Are you supposed to tell people that?" Bernie grinned back. "I mean James Bond would never just walk up to someone and say 'Hi, I'm a spy.'"

"Well, it saves time. Officially I'm a representative of the czar, here to determine if the stories about Grantville are true." Vladimir grinned again. The grin was one of his best things. It gave the person he was dealing with the feeling that he was being let in on the joke. "Everyone in Europe has spies in Grantville. I'm expecting spies from China to show up any day now."

Bernie laughed. "Yeah, China. Why not? So, what vital secret are you trying to get out of me, Mr. Spy?"

"How many planets are in the solar system?"

"Huh?"

"How many planets are in the solar system?"

"Why do you want to know that?" Bernie looked at Vladimir with puzzled face.

Vladimir took a sip of beer. "Do you know?"

"Well, yes. Nine, but so what? Everybody knows that."

"I'm afraid not. What people outside of Grantville know, if they know anything, is that there are six."

"Six?"

"Yes. Mercury, Venus, Earth, Mars, Jupiter and Saturn. And they only know that if they're educated and not too conservative. Otherwise they think that the sun and all the planets go around the earth. And now that I have done my work for today, care for another beer?" Vladimir took up the recently delivered pitcher and poured Bernie a refill. "And after that, we can do tomorrow's work, if you like. What are the names of the other three planets?"

"Gee, I don't know, Vladimir." Bernie smirked. "Well, I might know. But a beer isn't going to buy that information. A sandwich might, though."

Bernie wasn't quite sure how it happened but by the end of the evening he had a part time job. As a spy, no less. He did make it clear that he wouldn't betray the folks in Grantville. That didn't seem to be what interested the Russian dude, though.

* * *

The next morning Vladimir mentioned to Boris that he thought he had spotted a spy. He failed to notice the looks exchanged by Boris and Grigorii. They listened politely and, just to be on the safe side, Boris put a watch on Henning for a few days. Not that he thought there was much chance that the lad was a spy. Both Boris and Grigorii knew exactly what was going on. Grigorii was worried about Vladimir's involvement with the young woman. She was a commoner, though he wasn't entirely certain of that. The outlanders, and especially the up-timers, handled rank differently. Boris was, too, if for rather different reasons. While Russia had agents, sometimes those agents didn't choose to come home. Vladimir was showing some of the signs.

Spring, 1633

Vladimir was buying a house just outside the Ring of Fire. In a way Boris approved but he worried that the princeling was too enamored of these up-timers.

Finally Vladimir tore himself away from the view. "Your network?"

"Progressing." Boris looked around the area. Castle Hills, it was called. "Several good down-timer prospects. The up-timers are not nearly as good. Too many James Bond movies, I think. Bernie Zeppi is especially bad. I would fire him except hiring up-timer spies is so difficult. I only use him when I want the target to know he is being followed."

"Perhaps then he should be offered other work," Vladimir suggested. "He's not that stupid and better someone that is not a good spy if we're to send him to Muscovy."

* * *

The loud ringing of his old Big Ben alarm clock jerked Bernie out of his dream. It was a pity, really. In the dream, he'd been cruising in the restored 1972 Dodge Charger. He'd had the paint done just the way he wanted. No flags for Bernie, no sir. Flames, that's what he wanted. Red, orange and white flames on the black car. It would have been better than the old "General Lee."

Bernie laid against his pillow, daydreaming for a moment. It hurt, in a way. He had the car and he'd been saving for the paint job. Now it sat in the garage on blocks, useless. No gas yet, and not for a while longer. Life sucked.

He was drifting back into the dream when his bedroom door slammed open. He jerked back awake.

"Bernard." John Zeppi's voice held a certain amount of irritation. "You are a pig. Look at this room. It's a sty. A sty."

Bernie, still a bit groggy from the beer last night, nodded. "Yes, Dad. I'll get it cleaned up."

"The girls were never like this." John turned away, grumbling as he walked.

Bernie laid back on his pillow and did a bit of grumbling himself. Twenty-two years old with a curfew and Dad telling him to clean his room. No car. No prospects. The Russian guys were probably going to fire his ass. He was a lousy spy and he knew it. Then it would be back to doing labor on a work gang. His sister had moved in with the kid, now that rents had shot up so high. All the complaints about Tom Ruffner and how rotten men were. Every day. All day. Shit. He had to find a way to get out on his own again. Then he looked at his clock.*Ohshit. I'm late for the meeting with Boris again.*

* * *

Bernie is a possibility, Boris thought.*Not brilliant by any stretch of the imagination, but not really stupid, either.* Right now he was muttering about girls, again. Bernie, it had to be admitted, had girls on the brain. Not surprising in a twenty-two year old. This was the most recent in a series of weekly interviews that Boris was paying Bernie for. It covered things like what he had seen when following people around and general knowledge.

Boris changed the subject. "Tell me about carburetors?"

Bernie looked at Boris clearly working out how to explain. "The carb does two things. It controls how much fuel and it mixes it with the air . . ."

Boris didn't really give a damn about carburetors but he listened anyway. What he was trying to gauge was how clear Bernie's explanations were when he understood the subject he was talking about.

Several times he had to call Bernie back and have him explain what was clearly obvious to the youngster. A couple of those times it turned out that Bernie didn't actually know why it worked just that that was how the part was made. Bernie knew that a venturi was needed and he knew that it was a narrowing of the barrel but he didn't know why the barrel had to narrow. "It just does, dude. I can look up why in the library if you really need to know."

That was less than encouraging to Boris, who was thinking in terms of how Bernie would answer questions in Muscovy when the library was weeks away.

The conversation drifted to other areas where Bernie had less knowledge. He knew that a transistor was

an electronic doohickey but not what it did or how it worked. About lasers he knew even less. They were just lights, very intense lights that burned through stuff.

* * *

Brandy laughed. Then, seeing Vlad's face, laughed some more. She couldn't help it. "Good grief." With difficulty, she repressed a snort. "Who have you been talking to, Vladimir?"

"Bernie Zeppi." Vladimir grinned at her laughter. "In his defense, he did warn us that it was just a guess."

"That explains it. If it's not part of an engine, Bernie doesn't care. Lasers aren't necessarily very intense; they are just all one color. Coherent light all traveling in the same direction." Brandy was bragging just a bit. She hadn't known that much about lasers herself but it had come up in researching compact disks recently. She decided to change the subject before Vlad asked for information she didn't have. "So, how are you doing in the library science class?"

"Well, I think." Vladimir grinned. "And your up-time English is getting easier for me, some of it. Perhaps another month, then I will join you in the Research Center more often. It certainly helps to know what to look for, rather than to wander through that massive amount of information without a direction. And the 'modern' English! I wonder if I will ever fully learn it."

"Well." Brandy settled back in the booth at Marcantonio's Pizza and took a sip from her wine glass. "It's really the only way to do it. I've seen people who wanted one specific bit of information spend hours just looking at pictures from the future."

"Enough of work." Vladimir motioned toward the waitress. "We will deal with work some other day. Tell me about you."

* * *

Vladimir Yaroslavich was pretty happy with the results of the last few months work. "Well, Boris, what do you think?" He put down his tea cup. "Not so bad, eh? This should work. Bernie is not my first choice, but of the available up-timers, perhaps he is the best. He is at least not as arrogant as the other up-timer possibilities. The really qualified up-timers will not be tempted. They are too dedicated to this 'new US' of theirs."

Boris nodded. "Or too busy getting rich."

Bernie was one of several people that Vladimir and Boris were cultivating and one of two or three possibilities for recruiting to go to Muscovy. Others were being cultivated as information sources in Grantville. Few of them were up-timers.

Vladimir wasn't lying when he said every country in Europe had spies in Grantville. Spying works best when there are lots of spies. That way you can trade information or turn the other agents to your side.

Then there were the scientists from all over Europe who were showing up daily to see if their names got mentioned in the history books. Some of them were fairly decent sources of information.

"There are no better choices," Boris agreed. His finger traced a circle on the table. "Bernie at least knows more than some. He can read the English and interpret all these unusual words and phrases. Neural net? What does that mean?"

"I don't know." Vladimir shrugged. "That's why I'm going to make Bernie an offer." Then, in a fairly bad imitation of Marlon Brando, "I suspect it will be an offer he cannot refuse."

* * *

"A place of my own?" Bernie wanted to be sure what was being offered. "You'll furnish me with a house? And a shop? And people who will work for me?"

"Yes, we will. You understand, we are not asking you to tell us secrets. We wish only to understand this technology of yours. The cars, for instance. How does one build a car?" Vladimir looked interested.

"With a lot of blood, sweat and tears." Bernie shook his head, remembering the days at the shop. "Sometimes the darn things are like people. You just can't make them do what you want."

"And there are other things, Bernie. Things we would like to know. The shape of an airplane wing is one. There are a hundred little details that you grew up with that we have never seen. They seem natural to you but are strange to us." Vladimir used his hands to help him explain things, drawing the shape of an airplane wing.

"Boris, here, will make the trip with you, and introduce you to people. You will meet the czar, and give him some gifts from me, and from you. Any books you might have, your clothing, all that can go with you," Valdimir added. "It is a long trip. And you will be there, perhaps, for a long while. Of course, you will be paid for your time."

Bernie thought hard for a few moments. Life at home with Dad was no picnic He really didn't have any strong ties to Grantville, when he thought about it Even the girls he used to date were off getting married and working jobs. He couldn't afford to take anyone on a date, anyway. He couldn't drive his car. Why not?

"Why not?" Bernie said out loud. "Why the heck not? When do we leave?"

"As soon as possible. I made the trip in winter, but believe me, you don't want to." Vladimir shuddered. "A week, two weeks, whatever you need. I will arrange the trip. Pack carefully. And be sure to bring any books you have."

* * *

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NON-FICTION:

Refrigeration and the 1632 World: Opportunities and Challenges

by Mark H. Huston

Barflies have an amazing working knowledge on a lot of subjects. They are, on the whole, a bunch of pretty bright people, having great fun playing at this "what-if" exercise that is Eric Flint's 1632 universe. Hanging out in cyberspace, and in real life with some of these 'flies, has been an educational, intellectually stimulating, and an occasionally intellectually humiliating, experience. While putting this article together, I have learned more than just the basic history of refrigeration, which by itself is fascinating. (In fact, I knew quite a bit to start before I started this, but that is another story.) I have learned much more about how truly complex life really is.

It has been said that it is a truly wise man who realizes that the things he*does not* know are far, far more important that what he truly*does* know. I have finally figured out what that means.

As one of those (hopefully) bright barflies, I can come up with a pretty good technical argument and occasionally spin a halfway acceptable yarn. Occasionally even contribute! But I was unprepared for the "AH-HA" moment that hit me during the third rewrite of this article. That "AH-HA" is this.

We do not know what we do not know.

We do not even know what questions to ask.

We are unconsciously unaware incompetents.

In all things associated with this universe—up to the "AH-HA" anyway—I seriously and consistently underestimated the complex interdependence of industry, suppliers, and processes, which make up our modern world. If I need to order five gallons of ammonia, or thirty pounds of R-22, I do not have to invent that infrastructure to make everything from the containers the material is shipped in to the tires on the delivery truck. It is beyond the comprehension of any single individual. Even the most talented engineers you know couldn't do it. The young and aggressive ones would think they could, but the wise ones would know better.

Doing what needs to be done in this fictional world is hard. Even those tasks that we consider easy to do. For Grantville to survive and prosper, up-timers and down-timers will need to recreate the systems and that web of interdependence. Mike Stearns is right. Open the library to all comers. It is impossible to do otherwise.

So when you are kicking back on the sofa after reading one of the many Gazettes, or some of Eric's original books, and the thought crosses your mind, "Why did they do it that way? That is silly. It would be easier if they just painted it blue, or built a sterling engine, or used a rigid design airship. . . ." Stop and think.

Think about what you do*not* know, and start from there.

In this article, we are going to discuss refrigeration, how the various processes actually work, and analyze the resources available to Grantville. We are also going to look at ways we can move major

industries forward by utilizing existing refrigeration resources. Finally, we want to look at how we can develop down-time methods of refrigeration with down-time available technology and speculate on the market forces that will drive investments. We are also going to touch briefly on the process of air liquefaction, which is critical for industrial gasses.

Refrigeration is one of those things that nobody thinks about, but many processes and systems depend upon. It is nearly as critical to a technical and manufacturing economy as our famous nitric acid. A substantial portion of the refrigeration industry keeps food cool, chemical plants and refineries running specific processes, and operating rooms at the correct temperatures. Modern machining and manufacturing depends greatly on climate control.

Beer is important

Beer is as important to 1632 Germany as water is to a fish. It is the all-purpose beverage, one of the few liquids that will generally not give you some sickness after ingesting it. At least as long as it is not consumed in excessive quantity. Prior to refrigeration, beer could only be brewed until February or March, and then restarted in the fall. Wort cooling (an important step in the brewing process) could not be accomplished, as there was no supply of cooling that occurred naturally during those times of the year. Equipment was idle for parts of the year, not making any beer or money for the owners. As soon as down-time brewers hear about the magic process of refrigeration, there will be a stampede to acquire this technology. This "new" technology, combined with a better knowledge of yeast and its influence on the fermentation process is revolutionary.

Down-timers do not yet understand yeast and its function in the brewing process. Proper yeast fermentation temperatures are critical to a palatable beer. Up-timers*can* teach the Germans a thing or two about beer. If not flavor, then technique. There may be initial issues with German beer purity laws, as they did not take into account refrigeration and forbade summer production of beers. However, those rules were changed in OTL when refrigeration became the standard. And who says that any brewer in the USE has to follow those laws? Besides, that is Bavaria, and who listens to them?

The first practical vapor compression refrigeration system (there are several such claims with many variations), was developed and installed by Carl Paul Gottfried Von Linde in 1871, in Munich. It was for a brewery. It is conceivable that the brewing industry will invest heavily in this technology. (They gave Linde 70,000 florins after only reading his research paper!) I see no reason why the same thing would not happen again in this time line as in ours. Beer is important.

The other industry that drove refrigeration in OTL was ice. There was a tremendous infrastructure developed prior to refrigeration to cut ice from fresh bodies of water, store, and deliver it to market. Walden Pond was used as an ice harvest location. My grandmother called her refrigerator an "ice box." Two things killed the ice harvesting. The first was the pollution that increased in ponds and lakes made the harvested ice unsanitary. The second was the advent of vapor compression refrigeration. Vapor compression refrigeration was initially used in "icehouses" where ice was made year round. Later, icehouses were replaced by the electric refrigerator, which finally killed the home ice delivery industry.

The ice making and brewing industries drove the early refrigeration market in OTL, and the dynamics will be similar in the 1632 world.

However, there is another important factor to consider that did not happen in our time line.

Seventeenth-century investors are simultaneously starting the chemical industry, petrochemical industry, pharmaceutical industry, steel industry, precision manufacturing and instrumentation industries, gunpowder industry, textile industries and electronics industries, to name a few.

And every one of those industries is reliant on refrigeration in some manner. Many could not exist without advanced climate or process cooling apparatus. Some can "get by" without it for a while. Steel is a good example.

Steel? Refrigeration is needed to make steel? Well, not exactly the steel itself. But without refrigeration, there will be no basic oxygen furnaces, and therefore fewer specialty steels. Refrigeration is needed to extract the oxygen from the air, along with argon, helium, nitrogen and other gasses. We cannot even use our oxy-acetylene torches until we develop an economical process to separate the oxygen out of the air, which will generally require refrigeration. It can be made by electrolysis and capturing the oxygen from the process, but that provides wet oxygen that is more difficult to use.

Unlike OTL, the demand for refrigeration and air conditioning is going to be explosive. This dynamic economy will have a need for the existing refrigeration resources of Grantville to quickly develop the brewing, ice, and cold storage industries. This means your small home air conditioning system will be worth quite a bit, possibly more than the home and land that it services. This may satisfy a few small prototype industrial applications, or possibly the Captain General's new palace in Magdeburg, but the demand will be strong. Far stronger than the number of viable systems in Grantville.

The challenge will be to best utilize existing resources, such as home systems, supermarket refrigeration, automobiles, restaurants, slurpee machines and even home refrigerators. We will need refrigeration that can operate without electrical power, while at the same time we develop new sources of refrigeration from the 1632 tech base.

The technology will not have the luxury to gradually evolve with the industries it serviced, like in OTL. Instead of evolving gradually over a period of fifty years, we are going to need cooling almost instantly, across a wide range of industries.

Before we get too far with all of these applications, let's learn a little more about the different refrigeration processes and how they work.

What is Refrigeration?

In its simplest form, it is the controlled movement of heat from one location to another. When you are cooling something, you are removing heat from one location, and are relocating it to another. That is why it is cool in the house and the condensing unit (the box with the fan on it) outside the house has all of that hot air blowing out of it. We are just moving the heat around. There are whole bunches of ways to accomplish this. The two main methods are vapor-compression and absorption. From there the options take off to an almost infinite number of permutations and modifications.

"Refrigeration" is the process of mechanically moving heat from one place to another. "Air Conditioning" is controlling the temperature and humidity in an occupied space. Many times, refrigeration is used in the air conditioning process.

In the United States, the amount of refrigeration that any particular machine is producing is stated in

"tons" of refrigeration. This has nothing to do with ironclad displacements, but is based roughly on a ton of ice.

In the early days of refrigeration, if you owned a theater, you wanted it cool. Early theaters (and other buildings) were cooled with ice. If you go to one of these old vaudeville houses that became a movie theater, you will notice little vents in the floor. Many times they put lighting in them now.

Underneath the rows of seats, there were blocks of ice that were placed in front of large fans, sometimes steam powered fans. As the air left the fans, it blew across the ice and cooled down. It then was discharged out of the little vents in the floor.

If you wanted to sell a theater owner a machine to take the place of his ice (which he ordered by the ton) you would want to give him the equivalent rating.

"How many tons of ice will I get out of this, Mr. Carrier?"

"This is a thirty ton machine, Mr. Ziegfeld."

This measurement was a brilliant marketing tool, which bridged the gap between ice delivery and the newfangled refrigeration process. It made the mysterious (and sometimes dangerous) technology accessible.

Today we are looking at a ton as 12,000 BTU/hr. Equipment selection is based on rate of heat removal. And 12,000 BTU/hr is about how much cooling you will get from a two thousand pound block of ice as it melts.

How does refrigeration move the heat around?

It was discovered that if you took a high-pressure liquid, and released it through a controlled opening that allowed the liquid to flash (change from a liquid) to gas at a lower pressure, a cooling effect was created. There is a fixed relationship between the liquid state of a material, the gaseous state of a material, the pressure surrounding the material and the temperature. The manipulation of these factors creates the refrigeration effect.

By changing the pressures, a refrigerant can move between the liquid and gaseous states. The liquid, changing state to a gas, requires energy, so it grabs it from the surroundings. The net result is cooling. How does that work? Well, it is pretty simple actually.

For example, we have a tank of liquid CO2 (carbon dioxide). It is at 1000 PSI (pounds per square inch) of pressure. When we open a valve on the bottom of the tank, what is going to happen?

Well, we will have a bunch of CO2 that starts out as a liquid, and now because of the relative low pressure, it really needs to be a vapor. The only way it will become vapor is for it to grab heat from the surroundings. Our valve on the liquid CO2 will become very, very cold as the escaping gas gets its energy from the surroundings. Voila, instant refrigeration.

This works great until the CO2 tank is empty, then the refrigeration stops. In technical language, this is called an open refrigeration system. There is no way to repeat it unless you get another cylinder of CO2.

This is the same thing that happens at a higher temperature if you remove the radiator cap on an overheated engine. The typical automobile engine cooling system is pressurized to around 15PSI. That pressure keeps the water from boiling. When the cap is opened, steam sprays out of the opening, not hot water. That is why they say never to open a radiator cap when the engine is hot. With the pressure released, the 250DegF liquid is going to rapidly boil, and as it expands it sprays out the opening. It creates an instant unpleasant and burning steam bath. It is absorbing heat from the engine as it flashes to steam.

Think about an aerosol can. If you use the pressurized can non-stop, it rather quickly grows cold. When the propellant is exhausted, the process stops. This is called an open refrigeration system, because none of the components are recovered.

If the above is called an open refrigeration system, then the one that we want is going to (obviously) be called a closed refrigeration system. A closed system is one that uses the refrigeration effect of a high-pressure liquid that changes state to a gas, creates a cooling effect, and then recaptures and condenses the vapor back to a liquid as it rejects the accumulated heat. Your household refrigerator is a closed vapor compression system.

It turns out that this phenomenon works both ways, up and down. When you increase the pressure on a vapor, it will condense and release all of the heat gathered while it was changing state the first time. Hence the warm air blowing out of the box outside the house.

Absorption Refrigeration

Absorption is what is used in RV refrigerators, or in some large-scale chillers and process applications. It has a single and substantial advantage over vapor compression. In smaller sizes, there is no need for a motor drive, only the application of heat to the system. You read that right, heat to a system to make cooling.

This chemical process was actually the first refrigeration. Thomas Cullen was exploring the nature of gasses in a vacuum in 1748. Initially, he got water to boil at room temperature by reducing the pressure in an enclosed vessel. Later, his device consisted of a pair of vessels connected with a pipe, with one vessel containing water, and the other containing sulfuric acid. When a deep vacuum was placed on the chambers, and the acid chamber was agitated, the water in the adjoining chamber evaporated and was absorbed by the strong acid. As the water changed state from a liquid to a gas, a refrigeration effect was created. The water chamber would actually freeze. When the acid became diluted with water vapors, the process stopped. Unfortunately, nothing practical was done about with his invention until 1850, when the first of the Carre brothers built a practical machine in France.

The first practical absorption machine used Cullen's sulphuric acid and water. The second brother patented the ammonia/water absorber in America in 1859. These machines made their way around the world. There were several in the United States when ice shipments from the North were stopped during the American Civil War. The southern states imported several of the machines. What is very interesting about the Carre machines is that they were able to operate with no energy input with the exception of heat, and some manual manipulation. A history described the operation of the machine in 1880 Texas as, it had "a furnace that was fired with chips and kindling wood, to heat the aqua ammonia." It was an entirely manual operation. That is important for any "off grid" operation of refrigeration. Heating and

agitation of the absorbent are accomplished manually.

On a large-scale installation a perplexed operator once described it to me, as "This is impossible. Steam goes into the top of the machine, and cold water comes out the bottom!" It admittedly is somewhat counter-intuitive.

But that is basically how absorption refrigeration works. You apply a heat source to the absorption refrigeration cycle, and cooling is produced. Many smaller systems such as in RVs, use ammonia as the refrigerant, and water as the absorbent. Large-scale absorbers, that would be large enough to cool a fifty-story high-rise office building for example, are operated with water as the refrigerant, and lithium bromide (a strong salt solution) as the absorbent. These came into widespread use in the early 1950's in OTL.

I know absorption seems difficult to understand on the surface. But bear with me. Instead of a compressor inside this machine, there is a chemical reaction taking place. Ammonia is attracted to water. The same is true for salt and water. Think of a saltshaker during high humidity. The salt absorbs moisture from the air. The result is that your salt clumps up in the shaker. The same sort of thing goes on inside an absorption machine. This chemical reaction of absorption acts as the removal process for the refrigerant vapor, sort of like the inlet of the compressor in vapor compression. The refrigerant and absorbent are then pumped to a heat source and separated. From there they return to their respective areas of the machine and begin the cycle again.

The 1911EB describes the process wonderfully. It says that the absorbent "becomes greedy" for the refrigerant. Not an exact technical description of the process, but one that certainly captures the spirit.

Continuous Process and Generating Cycle Absorption

There are two main types of absorption refrigeration. There is the continuous process, and the generating cycle method. The simplest and most basic is the generating cycle method. With this, a heat source is set to the device (usually very small) once and then removed. After being heated for a period of time, it becomes "charged." The charging process separates the ammonia (refrigerant) from the water (absorbent), and allows the system to start the refrigeration process. Gradually the ammonia inside changes state from a liquid to a gas in the evaporator, creating the cold. It is then re-absorbed into the water. The next cycle (usually the next day) it is charged (heated and separated) again. Thomas Cullen's sulphuric acid device was one such system, although to charge it, the sulphuric acid was replaced, instead of being heated and separated.

For the 1632 universe, the generating cycle offers some interesting opportunities. This has a simple operation, and something the size of a small suitcase could provide refrigeration on a daily basis for food transport or home refrigeration, particularly where there is no electrical service. It opens up tremendous flexibility to the existing food transport and storage business on a smaller scale. These systems are generally very small, and can only provide a constant load. Think of them as a portable 10 pound bag of ice, which refreezes after it is used.

Unfortunately, like most things, simple operation on the surface usually means that it is more complex and well designed beneath the surface. And how would anyone in Grantville know about this process?

This process was widely used in the late 1920's as a household appliance, transitioning between the

periods where ice was delivered to homes, to modern vapor compression refrigeration. It was called a Crossly IceBall. The only way that it could be reproduced is if there is an old unit lying around somewhere, which is unlikely. It is possible that it could be developed, but the developers would need a lot of research money and time. If an old timer remembered it, just from the concept, development would be very difficult. And remember, this cannot be scaled up much beyond a few pounds of ice making per day, per unit.

Besides the internal complexity, it needs to withstand pressures of over 300PSI. This will push the envelope of construction techniques for our early modern refrigeration researchers. If the oil fields and the boiler shop can build sufficient small pressure vessels then this is a possibility. And only uses a little bit of ammonia. While this process is neat, it is doubtful that the product will be rediscovered.

The other absorption process that uses ammonia is the continuous cycle. These are the machines that the Carre brothers developed. It is also something that is familiar to the population of Grantville. This is the more common RV refrigerator. This too will be mostly a small-scale operation in Grantville for similar reasons. It can, however, develop temperatures well below freezing. There are two blind spots in this method: Internal pressures and a mix of hydrogen inside the circuit that is required for operation.

These are what are called "critical charge" systems, where the amount of each gas component needs to be exactly right in order for it to work. Very tricky, but not impossible. Again, research time and money. However the real kicker is that these units, with the hydrogen added, operate at up to 500PSI. This alone will limit the scalability. It is not particularly difficult to build a 2" diameter pipe that will hold 500PSI. To make a three foot diameter tank that holds 500PSI is another thing altogether. Scaling will be hard, but not impossible. And there are many examples around Grantville to take apart for templates. Hopefully, our guys at Clarence's Plumbing and Heating are very versatile, having tried to repair one of these units in the past.

Again, the above absorption methods use ammonia, and we have concerns over ammonia production, not to mention developing a pressure vessel industry.

So, how do we help the brewers and change the face of brewing beer forever? And how do we move other industries forward all at the same time?

Vapor Compression and 1632 Technology

Vapor compression refrigeration has been going on in one form or another since the 1850's. Yup, that long. Which means the technology is reproducible with nineteenth-century technology. Good news for us. As Grantville "gears down" many things that are possible to build with early- to mid-nineteenth-century technology will be possible.

This is the technology that the citizens of Grantville will be most familiar with. There is a wide installed base of vapor compression equipment in town, with many qualified people to work on it.

Okay, here are the basic parts of a vapor compression refrigeration system that we will need to build. We have, in order of flow in the system:

- Evaporator where we are changing from a liquid to a gas,
- A compressor, which raises the pressure and temperature of the gas.
- A condenser, where our high-pressure, high-temperature gas changes back to liquid as its

temperature is reduced.
- And finally, the expansion device, which meters the amount of refrigerant liquid being fed to the evaporator.

Here is where the myriad of options comes into play. There are many different combinations of the individual pieces (evaporator, compressor, condenser, and expansion device), and they range from fractional horsepower refrigerators and water coolers, to 10,000 HP centrifugal compressors, from the size of a shoe to the size of a medium office building. The temperatures can range from –300DegF to only 55DegF. But they all work the same, and have basically the same components, arranged in the same way.

And all of these basic components are re-creatable with basic nineteenth-century technology in one form or another, and are therefore accessible to the Grantville "geared down" tech base. Basically, as the boiler and locomotive industry gears up, that technology is similar to the basic vapor compression refrigeration process. However, it will be a few years, similar to the time line that the boiler industry developed.

It is conceivable that the steam industry will gain additional financial investment by the brewing industry, or others that wish to move the technology forward. A steam condenser is essentially the same thing as a refrigeration condenser. A piston driven steam engine is essentially a compressor when turned the other way. A valve is a valve, and a pressure vessel is—you get the idea.

Refrigerants

The trickiest part of the industry expansion is not necessarily the hardware. Pressure vessels and compressors are within reach. The pinch point for expansion of refrigeration beyond the existing resources of Grantville is the development of new refrigerants for absorption and vapor compression refrigeration.

Prior to the development of "Freon" in 1929, just about any refrigerant in use at the time could either explode, poison you, or both. (Freon was invented by Thomas Midgely, Jr., who had also developed tetraethyl lead as an additive for gasoline.) The industry really took off when the risk of dying from using the products decreased.

The terminology in the early days of refrigerant was "volatile fluids." It was an apt description.

Early refrigerants that were popular were ammonia, carbon dioxide (very high operating pressures), methyl amine, ethyl amine, methyl formate, sulfur dioxide, methyl chloride, blends of sulfuric acid and hydrocarbons, ethyl bromide, isobutane, dielene, gasoline, methylene chloride, and propane. Propane was marketed at one time as the safe alternative refrigerant.

The main refrigerants that came out of this period were ammonia and CO2. Ammonia is used today still in many applications, and CO2 was a prominent refrigerant of choice for marine applications well into the 1970's. However, neither of these gasses are easy to produce with the existing 1632 tech base. Significant investments will have to be made in the chemical industries to bring these into common production.

Large-scale low-temperature refrigeration is still done with ammonia today, in food applications and ice

skating rinks. It is a good industrial refrigerant, but for obvious reasons (toxicity and flammability) it is not generally used in unsupervised operation. However, ammonia is not an easy thing to make in the technology of 1632, or with early nineteenth-century technology. It can be made in small quantities from human and animal urine, but large scale production is difficult. And by 1640, we will need large quantities.

CO2 generally requires air liquefaction technology, which brings us back to Herr Linde (who invented the air liquefaction process) and the breweries. Ammonia requires complex processes to manufacture in quantity. However, ammonia has other uses. It is a fertilizer, and it helps things go boom. The "go boom" part is important, and will drive production of this material. It makes the most sense to pursue ammonia refrigeration instead of CO2 at this time, mostly because pressure vessel and compressor construction will be simpler and lighter, and ammonia will be a priority for production.

Grantville has quite a bit of natural gas. We have another opportunity to utilize a refrigerant that is easy to distill from natural gas. Propane. As we will see below, it has very similar characteristics to the R-12 and R-134a gasses and is an excellent refrigerant.

The technology that is needed to rebuild "Freon" refrigerants, which are Chlorofluorocarbons (CFCs), is many years away. So we are going to have to utilize some of the toxic or flammable refrigerants above to drive our industries, as was done in the past. For the medium term, after existing resources are fully used up, our new refrigerants will most likely be:

- Ammonia
- CO2
- Propane

Existing resources

There is substantial availability of refrigerant in Grantville, and a fair amount of devices to use it that can be modified in a lot of ways, at least for the short term. But in the long term, as the demand for the process grows, old refrigerants will have to be rediscovered, and the more toxic and dangerous refrigerants will be pushed to the front.

The largest single quantity of refrigerant in Grantville is what is known as R-22. The letter and number codes of refrigerants have been set up over the years by the industry engineering association known as ASHRAE ("Ash-ray"). R-22 is what is used in home AC units, window units, and most of the refrigeration cases in the grocery stores at that time. We are going to assume that the stores in town were not into leading edge technology and have not changed to the non-CFC refrigerants. By careful management of refrigerant and constant monitoring of leaks, this can be expected to last in existing equipment for several years. There will probably be systems operating in Grantville well into the 1670's or 1680's if care is taken with existing stocks. It is a matter of managing the resources at hand.

Based on the grid, there will also be some refrigerant stock in town with Clarence's Heating, Plumbing, and Air Conditioning Company. They will also have vacuum gauges and a stock of vacuum pumps at their disposal. Based on the number of employees, there are at least a half dozen pumps available, as well as a dozen or so recovery tanks for storage of recovered refrigerant. They will have special tools and, more importantly, manuals for detailed repair and installation specifications on a great many varied systems.

A side note needs to be mentioned here on small market air conditioning shops. In many ways, these types of contractors must be a "jack of all trades" shop. In larger markets, a contractor can concentrate on a particular segment of that market. The company that services residential units often is not set up for service of hotel ice machines and neither of them would be set up for supermarket refrigeration. They are different systems and require different tools and skills to service cost effectively. But in smaller markets, the shop must be far wider ranging, and willing to take on a much wider variety of systems than a similar sized shop in a larger area. Therefore, Clarence's group is going to be, based on its market, a highly diverse shop. A better choice than a bigger shop that only specializes in a particular market segment.

There are a sufficient amount of R-22 compressors and components to continue servicing of the systems for a number of years. With proper care, this type of equipment can run a long time. Most people do not maintain systems to the level required to achieve that longevity because it is generally not cost effective. But when the one you have is the only one, you are very careful with it.

There are a fair number of R-22 walk-in coolers (Freedom arches, IGA, other food stores) that can be relocated to the hospital for plasma storage and drug storage. They can potentially be purchased and reconfigured for almost any other use. There are a lot of individual refrigerators in homes and businesses, so there is a long-term supply of both the cooling available in the refrigerators, and the refrigerants that are made available when units go out of service. Remember that refrigerant does not wear out, and does not have to be changed unless there is a significant problem with the system. It can be recycled and reused until it is lost.

The next largest amount of refrigerants is going to be the R-12/R-134a type that is found in cars. These are generally mutually exclusive due to lubricant incompatibilities. Using demographic data, the average number of vehicles per household inside theRing of Fireis about 1.5 vehicles per household. With approximately 1,700 households, this represents 2,550 cars and light trucks. This does not include farm vehicles and non-registered vehicles, but most of those will not have functioning air conditioning systems. West Virginia is hot and humid; I would expect that a fair number of the vehicles in this group still have their air conditioning operational. This is open to some debate, but I am going to bet that at least 75% of the registered vehicles have functioning air conditioning. This gives us a theoretical reserve of 1,912 systems. At an average of three pounds per system, we will have a theoretical reserve somewhere in the area of 5700 pounds total of these refrigerants. This, along with the automotive AC components, is an excellent source of small-scale refrigeration equipment that is highly adaptable. This is a terrific resource to cool the operating room at the hospital for example, or support production of nitroglycerin by keeping the reaction temperatures low. It is also perfect to support beer making.

Don't scoff at automotive air conditioning as a source of industrial refrigeration. Your average sedan has as much cooling capacity as a 1500+ square foot home. And it is a highly adaptable system, capable of operating under a wide variety of compressor rotational speeds and ambient conditions. All that is needed is motive power for the compressor, which is an external drive. That means that the air conditioning system does not have the motor inside the system, like a refrigerator. It can be powered by anything. A steam engine, water wheel, electric motor; any rotational force around five horsepower. These compressors can also be used as vacuum pumps in a pinch.

For the removal and storage of this refrigerant, the community has tools and methods in place for the job. Independent garages and the auto dealers in town will have equipment that is specifically designed to service automotive air conditioners, including vacuum pumps. In fact, it is required by the Clean Air Act, which imposed fines and other penalties for the outright release of refrigerants to the atmosphere. This was started in the mid 1990's, so all of the equipment was in place for our Grantville. Some of the automotive equipment will have minor issues of compatibility, but all of these compatibility problems are easily remedied with some creative shade tree engineering.

We also have the ability to distill propane out of the natural gas that is plentiful and cheap in Grantville. Propane is much more than a fuel. It is also an excellent refrigerant that is very close in its operational characteristics to the R-12/R134a. Recall that R-12 and 134a are used in automotive systems. At one time, propane was considered as a replacement for R-12, but it was decided that R-134a is a better choice, particularly in automotive applications, where an AC system will hold from three to five pounds of gas by weight. The distillation of propane out of the natural gas stream will provide these components with a very long lifespan.

So, how will this all shake out?

In the fictional 1632 rapidly expanding economy, the market dictates the direction that refrigeration is going to take. And the best guess that we can give is the one that came from our time line. Beer and ice. However, the complexity of a rapidly expanding technical industrial base, which is growing exponentially, is going to be difficult to predict. There are far more factors involved in this time line as opposed to ours. Far more industries know that they can do things better, faster and cheaper with this technology.

And we haven't even begun to discuss the beneficial impact to the textile industry of refrigeration and air conditioning. When that industry takes off, there will be another major user of the technology. The phrase "air conditioning" was first used in a patent for mills, where the air was used to "condition" the yarn. But as indicated in "A Looming Challenge,"*Grantville Gazette,* Volume 4, that technology is some years in the future, possibly up to twenty. The refrigeration and air conditioning industry will be mature enough to accommodate a new industry by that time.

It is safe to say that if you develop a working system that will function off grid (away from the electrical power grid at Grantville) with automotive components, you will have a problem keeping up with demand. In the short term, it is very probable that smaller scale process refrigeration can be developed out of the remnants of automobile air conditioning components. The amount of existing refrigerants, plus the collection of propane from the natural gas, gives us a strong candidate. It is conceivable that the brewing industry will be willing to invest heavily in this technology. (Remember the 70,000 Florins.) Car AC systems and components just became very valuable.

The other off grid technology that will be approached is the ammonia absorber. Remember, that this was the first real refrigeration system, and is re-creatable with some very basic technology. We only lack enough ammonia. One machine is feasible with maybe five hundred pounds of ammonia. But if we want to produce thirty machines per year, say around 1635, we are going to need a comprehensive industrial ammonia production facility to meet the demand.

It is also safe to assume that any available system that is able to operate on the electric grid will be in significant demand for beer wort cooling, ice production, comfort cooling, or any of the other industries we discussed above. What this means is that the home central system is going to be worth quite a bit to a manufacturer that has located within the reach of Grantville's power grid. This will place a demand on the technology, driving up the prices of the limited number of systems, to where the refrigeration system may be worth more than the land or the structure.

The steel and metal fabrication industry is going to need air liquefaction for oxygen production and other gasses, such as argon and nitrogen. This will likely be a separate heavy industry redeveloped parallel to the more familiar and typical applications. There will be much crossover as the air liquefaction industry

grows with the refrigeration industry. Of course, there are medical uses for oxygen that are critical as well.

The other benefiting group will be the steel business, and the availability of liquid air (oxygen) that is needed for a blast furnace, as well as dehydrating the airstreams for regular furnaces, and filling oxygen tanks for oxy-acetylene welding rigs. Remember the beginning of the article. This is a technology that is not readily visible, but is a key to modern industrial production. However, the air liquefaction process is only given a passing mention in the 1911EB. This will be a major hurdle for the steel industry. But once it is done, it is scalable with the "geared down" technology.

Do we pursue the absorption method, or should we prefer the vapor compression methods?

My bet is vapor compression, at least in the short term. Utilize the substantial resources that currently exist. Correctly managed, they should last several years, and can be modified into a wide variety of uses. Brewing will drive the market, as it did in OTL. Supplement the R-12 and R-134a stocks with propane to achieve maximum life from the compressors and components.

Medium term, ammonia or CO2 vapor compression is an excellent option for industrial and process operations. But we need ammonia. As soon as a reliable source of producing ammonia becomes available, the industry can make a major impact. An ammonia compressor is as simple as a steam engine. There is little new mechanical tech to develop, but the implementation of actual ammonia systems is complex. This will take some development.

It is possible to use CO2 as a refrigerant, but here too we are going to have issues with pressure vessels that can contain 1500PSI. If that can be safely overcome and is scalable, then CO2 becomes the viable option. The important point is that there are options available for vapor compression both on and off grid.

Long term, it is likely that there will be a need for pure heat powered absorption refrigeration. However the chemistry and infrastructure is going to be tricky to develop and even trickier to keep operating. These took many years of very hard work to develop. Lithium bromide absorption (the most common and easiest to work with) is going to be hampered by a lack of the basic lithium bromide solution, as well as the multiple chemicals required to keep the machine internals from rusting away to nothing. Even Albert Einstein helped in their development in the 1920's.

Overall, it looks as if the short term needs can be met with careful management of resources, and some creative application of available systems. Once the breweries get the message, there will be an influx of cash, and development will then increase. Work should begin on ammonia and CO2 vapor compression refrigeration, and then on the ammonia absorption chillers.

Just like everything else: steam, railroads, steel, and power generation, we need to gear down, and go back to basics. Refrigeration is a marvelous process, especially to down-timers. It can fire the imagination in ways that no one before has thought of. Who knows, it could inspire methods and new applications that were never thought of in our time line. There is an ability to make a viable and valuable product from the technology. Temperature control of an environment is important.

But then again, so is beer.

Bibliography

Proclaiming the Truth, an Illustrated History of the American Society of Heating and Air-Conditioning Engineers, Inc. ASHRAE, 1995

Willis Carrier, The Father of Modern Air Conditioning. Margaret Ingels. Garden City [N.Y.] Country Life Press, 1952

Air-Conditioning America, Engineers and the Controlled Environment, 1900-1960. Gail Cooper. Johns Hopkins University Press, 1998.

2001 ASHRAE Fundamentals Handbook. ASHRAE, Atlanta Ga.

1911 Encyclopedia Britannica "Refrigerating" article.

Centrifugal Compression as applied to Refrigeration. W.H. Carrier, Refrigeration Engineering, February 1926

Trade Offs in Refrigerant Selections, Past Present and Future. James M Calm and David A Didion. Trane Company, Lacrosse Wi.

Carrier Operating Instructions, Book #175 for Carolina Theater, Charlotte NC. 1927 Carrier Engineering Corporation, 750 Frelinghuysen Avenue. Newark New Jersey

A Brief History of the Artificial Ice Industry in Southern Texas. Corner of History, ASHRAE Alamo Chapter Newsletter, Sixty Years of Ice. George C Briley PE.

The Impact of Refrigeration, Barbara Kastner-Khait, History Magazine, http://www.history-magazine.com/refrig.html

1951 Carrier Product Catalog, Carrier Corporation.

Carrier Construction Department Service Bulletins (Various), 10-1-1950 Through 2-11-55. Centrifugal Refrigeration Machines. J.G. Manning.

US Department of Health and Human Services, September 1978. "Occupational Health Guidelines for Methylene Chloride"

ASHRAE Press Release, "Was the Caveman Better Off than We Are?" Speech by AE Stacey, March 25, 1949. ASHRAE Library

Speech, "Air Conditioning and the Development of New Industries" A.E. Stacey. March 17, 1947. ASHRAE Library

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New France in 1634 and the Fate of North America

by Michael Varhola

1634 was a pivotal year for the indigenous peoples of North America. It was in that year that the French Jesuit missionaries, in spite of their highest motives, set in motion a series of events that led ultimately to the destruction of those whom they came to both civilize and save for the greater glory of God. The result of these events, one hundred and fifty bloody years later, was an unstoppable European settlement on lands where disease and internecine warfare had so thinned the native population that resistance, no matter how resolute, had become futile. The Jesuits, with their holy motives, and the French and Dutch, with their more worldly ones, exacerbated the preexisting tensions and upset the tenuous balance of power that had existed for generations between the two great powers in the northeastern part of the North American continent, the Huron and Iroquois Confederations.

A small group of Jesuit priests, led by the indomitable Father Jean de Brébeuf, set forth in July, 1634 from the French trading post of Three Rivers on the Saint Lawrence River. The French had finally succeeded in cajoling a group of Huron traders to allow the missionaries to return with them to their own country, Huronia, on the southern shore of Georgian Bay.

The Jesuits were bursting with missionary zeal and optimism. They had a vision and it was a grand one. They intended to build a Catholic empire in the wilderness. The Huron, converted, civilized, and, so they hoped, loyal to the French crown, were to be the cornerstone of that empire. Francis Parkman, in his prodigious work,*France and England in North America,* used these words to describe the Jesuit dream:

A life sequestered from social intercourse, and remote from every prize which ambition holds worth the pursuit, or a lonely death, under forms, perhaps the most appalling—these were the missionaries' alternatives. Their maligners may taunt them, if they will, with credulity, superstition, or a blind enthusiasm; but slander itself cannot accuse them of hypocrisy or ambition. Doubtless, in their propagandizing they were acting in concurrence with a mundane policy; but, for the present at least, this policy was traditional and humane. They were promoting the ends of commerce and national expansion. The foundations of French dominion were to be laid deep in the heart and conscience of the savage. His stubborn neck was to be subdued to the "yoke of the Faith." The power of the priest established, that of the temporal ruler was secure. Those sanguinary hordes, weaned from intestine strife, were to unite in common allegiance to God and the King. Mingled with French traders and French settlers, softened by French manners, guided by French priests, ruled by French officers, their now divided bands would become the constituents of a vast wilderness empire, which in time might span the continent. Spanish civilization crushed the Indian; English civilization scorned and neglected him; French civilization embraced and cherished him.

The Jesuits hoped to succeed where their predecessors, the Franciscan Recollets, had failed. The Recollet Fathers had labored in vain for years to bring Christianity to the semi-nomadic Algonquin bands

that roamed the northern forests. These hunter-gatherers, however, preoccupied as they were with the daily struggle for survival, had little time for or interest in the missionaries' message. The Jesuits, accepting this reality, and also building on the successful experience of their Spanish brethren among the Guarani in South America, selected an entirely different and geographically quite distant population for their conversion efforts. They chose the Huron, the sedentary "farmers of the North," who in 1634 represented what was probably the most advanced and most concentrated indigenous population in North America. The Jesuits were not going to replicate the experience of the Recollets chasing their flock through the snowy forests of the north, only to find their prospective converts breaking into ever smaller groups as they pursued game, fish, and fur.

The Huron were not like that at all. They lived in a small number of semi-permanent villages in a relatively compact area. From that base the Jesuits hoped to reach out to the surrounding tribes, both settled corn-planters and nomadic hunter-gatherers. It was a grand plan, and not without its merits, but the Jesuits, themselves ignorant of the ways of the Huron and impatient for results, destroyed what they came to save. Intelligent and well-meaning, they often recognized their mistakes—but not until it was too late and the damage was done. The Jesuit message effectively divided the Huron into two opposing camps, both of which were weakened by disease. In addition, their fellow Frenchmen in Quebec and the Dutch in New Amsterdam gave the Iroquois, traditional enemies of the Huron, reason and means to destroy their hereditary enemies.

Of course, it did not all begin in 1634. One has to go back a quarter century before then, to when the eminent French explorer and later governor of New France, Samuel de Champlain, made the fateful decision to support the Huron and Algonquins in their unending war with the Iroquois. The first exposure of the Iroquois to European firearms was on the receiving end when a mixed force of French, Huron, and Algonquins attacked a small force of Iroquois warriors near the site of the future Fort Ticonderoga. With one discharge for his arquebus, Champlain succeeded in killing two Iroquois chiefs and mortally wounded a third. The slaughtered chiefs, seemingly safe in breastplates of wood, provided a dramatic lesson to the stunned warriors: the nature of war had changed. That which was defense against a stone arrowhead, was of no use against firearms or even arrowheads or axes of iron. The Iroquois fled in disarray. Far from being cowed by their defeat, however, they quickly adapted to the new realities. The attacks served to awaken the Iroquois to the threat that this French alliance with their Huron and Algonquin enemies posed to their survival. It served to motivate them to strengthen their own confederation and seek their own sources of metal weapons and firearms.

The Iroquois were living proof of the maxim: that which does not kill you, makes you stronger. They saw themselves as having no alternative. They were surrounded by enemies who were not only better situated geographically but who also, taken together, vastly outnumbered them. To the south were the Susquehannocks blocking access to the European settlements in Pennsylvania, Delaware, and New Jersey. To the east, interfering with their trade with the Dutch settlements, were the Mohicans, another hereditary enemy. To the north were the Algonquins and Montagnais, redoubtable fighters with double advantage of access to both the French traders and the quality furs, which the Europeans coveted. To the west and northwest were other Iroquoian tribes, such as the Wenro, the Erie, and the Tobacco nation. These latter tribes, sometimes neutral and sometimes hostile, lay between them and the Huron, and the Huron lay between these tribes and the beaver-rich country along the upper Georgian Bay.

In spite of the Mohicans, the Iroquois managed to establish trade with the Dutch and, in so doing, secured a reliable source of muskets as well as other European goods. Their supply of beaver was, however, soon exhausted. That turned their eyes to the north and northwest, to a seemingly inexhaustible supply of beaver controlled by small, disorganized bands of Algonquins. These wandering bands that could be made submissive to the Iroquois were it not for their alliance with the Huron. If it were not for the Huron, the Algonquins could be forced into trading their pelts for Iroquois corn rather than Huron

corn, pelts which the Iroquois could trade for Dutch muskets, copper kettles, and hatchets. If the Huron could be destroyed or dispersed, then the way to the north would be clear.

The Huron sat astride the gateway to the fur country of the north much as the Trojans had guarded the trade route to the Black Sea and the Carthaginians had controlled access to the Atlantic from the Mediterranean. The Iroquois, like the Mycenaeans and Romans before them, found the situation intolerable. Much like their predecessors in the ancient Mediterranean, they were successful in leveraging an economic disadvantage into a popular and successful war. Just as Roman senators shouted*Carthago Delenda Est* ! Iroquois chieftains must have called for the annihilation of the Huron and any others who might seek to interfere with their trade. Just as young Roman nobles and Mycenaean freebooters longed for glory and loot, so the young Iroquois warriors dreamed of returning from Huronia in triumph bearing prisoners, scalps, and European booty!

The Huron, like the Iroquois, were a confederation. Theirs consisted of four tribes, while that of the Iroquois had five. They constituted the other major power in the northeastern part of the North American. In their own language, they called themselves the Wendats, and their country was Wendake, the "land apart," which is sometimes translated as "the island." While not literally an island, Wendake occupied a relatively compact area bordered by water on most sides: Lake Simcoe on the east, Nottawasaga Bay and the Georgian Bay itself on the north and west, with streams and low lying marshy areas in the south completing the circle. Wendake lay nine hundred miles by river to the west of Quebec.

The Huron economy, like that of the Iroquois was based on the growing of corn. Because the economies of these two "super-powers" were basically the same, they had little basis for trade and cooperation. Prior to the arrival of the Europeans, this manifested itself in a continuing, if not particularly intense, cycle of warfare motivated primarily by revenge and glory. The European demand for pelts, particularly beaver, lent a serious economic motive to what had been little more than blood sport. Add the French to the mix, the result was a situation that was perilous in the extreme for the Iroquois, or, at least so it looked to them. They were cut off from both object and the currency of the fur trade. They were underdogs, much as were Romans and the Mycenaeans were before they resolved to change the situation.

What the Iroquois had going for them more than anything else was desperation and a sense of purpose. This translated into cooperation and even a unity of effort among the five tribes of the Confederation, which had started as little more than a mutual non-aggression pact. While certainly not reaching the Roman level of organization, they probably surpassed that of the Mycenaean-led coalition that had for ten years laid siege to Troy. For the first quarter of the seventeenth century, all the cards seemed to be stacked against the Iroquois. But, as it turned out, fate dealt a blow to the Huron and changed the situation irrevocably to the Iroquois advantage. That change came in the form of Jesuit missionaries—uncompromising men of God, whose only goal was to save souls and, using Huronia as a base, covert the Huron and neighboring tribes—and, God willing, someday even the dreaded Iroquois. What they accomplished, through tireless labor and selfless sacrifice, in the years between 1634 and 1649, was to bring disease and dissension to the Huron Confederation. The combination of which so weakened the Hurons that they ultimately could no longer withstand the unremitting onslaughts of their ancient enemy.

The Jesuit efforts were initially crowned with a measure of success. Their mission of Sainte Marie among the Huron was by 1640 the second largest French settlement in North America after Quebec. A full third of the French population of New France lived there. However, with the French came the diseases of Europe. Wave followed wave. First, there was the flu epidemic of 1636. This was followed by a smallpox epidemic. Measles, chicken pox, both killers for the Huron, and myriad other European diseases were also being continuously transported to Sainte Marie. The effect was like, not one, but a

succession of Black Deaths, reducing the population of Wendake by as much as three quarters over a period of fifteen years.

The Huron were reduced to terror and despair. Many believed that the Jesuits were sorcerers, purposefully spreading disease with the intent of forcing the Indians to accept the French God or die a horrible death. While the Jesuits denied that they were the cause of the epidemics, they did give the Huron to believe that baptism could sometimes work a miraculous cure, and, indeed, the Jesuit reports make many references to such occurrences. In any event, or so the Jesuits assured them, even when baptism did not save their bodies, it would guarantee them eternal life in the French heaven. Both these messages were divisive in the extreme. The Huron could see that the baptized died as readily as those clinging to the traditional beliefs, yet some, hoping against hope, clung to the new religion and prayed fervently to the Christian God for deliverance. For others, the epidemics gave them reason to hate the Jesuits and plot their destruction.

The message of eternal life was also divisive. Traditionally, the Huron wished for little more than to join their people who had gone before them in the land of the dead. This land was neither heaven nor hell, but was rather a place much like the land of the living, but without the rough edges of disease and starvation. Those that were baptized could not, according to the Jesuits, join ancestors who had not been baptized. For a tribal people, this prospect was as bad as death itself. Yet many of the Huron, possibly as many as half, accepted baptism, thereby severing themselves from their people in both life and death. By the mid-1640's the Hurons, never as cohesive as the Iroquois to begin with, had been split into two mistrustful and often hostile camps: Christians and non-Christians. Both groups were greatly depleted by disease.

The Iroquois, with their own supply of beaver exhausted, but with their population still united and relatively strong, capitalized on the weakness of the Huron. They engaged in a protracted war of attrition, interdicting the Huron trading expeditions sometimes almost in sight of the walls of Three Rivers. They attacked Huron hunting parties and Huron women tending the corn fields. They were merciless and implacable. Then, in the spring of 1649, they mounted an expedition that finally succeeded in bringing the Huron Confederation to its knees and dispersing its people. Even as weakened and disorganized as the Huron were, it was still no mean feat. An Iroquois war party, chiefly Senecas and Mohawks, had set out the previous autumn for Wendake. They foraged through the winter as they traveled at a leisurely pace toward their prey. In the spring, still undiscovered, they attacked unsuspecting Huron villages and quickly overwhelmed them. The Huron rallied and counterattacked. The Iroquois were eventually forced to withdraw, laden with booty and prisoners, but Wendake was no more. The surviving Huron sought refuge at Christian Island in Lake Huron, where they spent a miserable winter, many perishing from disease and starvation. Those who were left dispersed, some going east to settle near Quebec; some joining the Algonquins to the north. Most went south and west to join the Eries on the southern shore of Lake Erie.

With the Huron destroyed, the balance of power was permanently altered. No tribe could now stand up to the Iroquois. In short order, the Iroquois destroyed the Neutral Nations on the north shore of Lakes Erie and Ontario, the Susquehannocks to the south, and the Eries to the west. They wiped out all but the last the Mohicans. They were unstoppable and they soon reigned supreme in a vast area that stretched from the Mississippi River to the Atlantic Ocean and from the Saint Lawrence River to the Chesapeake Bay. They did not, however, have the people to occupy this area. While they had made their world safe from their traditional enemies, they had opened themselves up to a threat they could never have anticipated—European settlement. Most of central and western Pennsylvania as well as large portions of New York had been virtually depopulated. Few tribes were there to confront the settlers. The Iroquois tried desperately to move client tribes into these lands and, once there, encouraged them to fight the Europeans, but it was too little too late. The Iroquois had become victims of their own success. Their

victory was the seed of their undoing. In destroying all those around them, they ultimately had to stand alone, not against the trivial population of French but against an unstoppable tide of English settlers. Ironically, the French, whom they had hated ever since that day in 1609 when Champlain brought down three Iroquois chieftains with one discharge of his musket, were no real threat to them. The French wanted trading partners, albeit pliant ones, and souls for God, but the French had no intention of opening the continent to settlement by their dissidents and outcasts.

It was the English, the Puritans and Quakers, Catholics and Coventers, seeking religious freedom, and the tens of thousands of others who sought a better life in a new world, who were ultimately the real threat to the Iroquois. Their warriors fought valiantly for another hundred years, but with the defeat of the French in 1763, their fate was sealed. Pontiac, Tecumseh, and others tried to unite the tribes, but there were too few left and the European population was already too great. The Iroquois had been instrumental in their own undoing.

If, in an alternate world, somehow the events of 1634 could be altered and the Huron somehow preserved, then the history of North America would surely have unfolded differently. With the Huron intact, the Iroquois could not have taken on the tribes around them. Rather than moving into depopulated areas, English settlers would have come up against tribes that had not been dispersed by the Iroquois. Then, when the Iroquois finally could see where the European settlement was leading and resolved to stand up to the invaders, they would have potential allies on their flanks. In fact, in a 1632 universe, they probably would even learn eventually, as the countries of Europe had learned, how things had unfolded in the other timeline: that European settlement led to the almost complete destruction of the indigenous tribes and cultures, with those remaining relegated to poverty and reservations at the bottom rung of the American ladder.

The Iroquois, in their wars against the Huron, Algonquin, and French, demonstrated resourcefulness and resolve in standing up to numerically and technologically superior enemies. They were more successful than most tribes in adjusting to the westward expansion of the United States. One can only wonder how it all would have turned out if the cards had been stacked a little more in their favor and that course of events set by the founding of the Jesuit mission in Huronia in 1634 had been somehow shifted in a direction more favorable to the indigenous peoples.

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Aluminum: Will O' the Wisp?

by Iver P. Cooper

There is no doubt that aluminum is a wonder metal. Pure aluminum has a density only about one-third of iron, it is as reflective as silver, and a good conductor of heat and electricity. When exposed to air, it quickly acquires a protective coating of aluminum oxide, which shields it from further corrosion. Alloys of aluminum are extensively used as structural materials in the construction of buildings and vehicles.

Because of the extensive up-time use of aluminum, a substantial amount of aluminum products passed through the Ring of Fire. This aluminum will certainly be recycled, where possible (more on that later). What is much more difficult is producing aluminum, and its alloys, from scratch.

The process which made it possible to produce reasonably pure (over 99%) aluminum at a reasonable cost was the Hall-Heroult smelting process (1886), involving the electrolytic reduction of aluminum oxide (alumina) to the metal. Finding the ore (bauxite) and extracting alumina from it are relatively straightforward. However, the Hall-Heroult process has some additional, potentially ticklish material requirements (large amounts of electricity, the rare mineral cryolite, and highly pure carbon). Also, the more important uses of aluminum are in alloys, so we need to purify the major alloying elements, too.

Finding Aluminum Ores

Aluminum is the third most abundant element in the earth's crust. While hundreds of minerals contain aluminum, the principal ore is bauxite (a name for a family of aluminum oxide minerals). The bauxites include gibbsite [Al(OH)3], boehmite [AlO(OH)] and diaspore [also AlO(OH)].

When granitic rocks are weathered, the feldspar minerals (which are complex silicates) are converted into "clay minerals," such as kaolinite (hydrous aluminum silicate). If the granite has a high aluminum content (e.g., aluminum silicates), bauxite is formed. (Hochleitner, 39) The implication is that if you are looking for bauxite, a good starting point is to find out where clay is mined for porcelain.

However, the encyclopedias provide additional clues. The*Encyclopedia Americana* articles on "aluminum" and "bauxite" reveal that bauxite can be found in Europe (France, Ireland, Greece, Hungary, Yugoslavia, Croatia, Bosnia, Herzegovina), the Americas (Arkansas, Jamaica, Suriname, Guyana, Brazil), Africa (Guinea), and Asia (Indonesia). The 1911*Encyclopedia Britannica* (1911EB) adds Styria, Austria, India, Italy, Alabama and Georgia (EB11-A), and the modern EB, Hawaii, Australia, Malaysia, China, the Soviet Union, and Ghana. (EB-IEP, 389)

Bauxite takes its name from the town of Les Baux, in France, so that pinpoints one deposit, albeit one in enemy hands. There, it is found as a reddish rock. (EB11, "Les Baux")

The Irish deposit is at Irish Hill (near Larne), in county Antrim, Ireland. The Arkansas deposits are in Saline and Pulaski counties.

Several atlases likely to be in personal libraries, such as the*Hammond Citation World Atlas*and the *Rand McNally Family World Atlas* , show the location of major "Al" deposits.

{The up-timers, of course, are most interested in finding bauxite in Germany. There are several clues: (1) it is in basaltic rocks of the "Westerwald," and these rocks are tertiary basalts interbedded with pisolitic iron ore, like those of Antrim (EB11-B); (2) it is found in Hesse (EB11-A), and (3) it is deposited as a reddish clay, between layers of tertiary basalt, at Vogelsberg in Germany. (EB11, "Laterite")

The term "Westerwald" is pretty nondescript ("western forest"), but there is a forest so named at the modern border of Hesse and the Rhineland Palatinate. Vogelsberg is likewise shown by modern maps as a mountainous area in south central Hesse, west of Fulda.

Unfortunately, the German deposits are not significant enough to be shown in the Hammond atlas.

* * *

We know, within several miles, where to look, the next question is, would we know what are we looking for?

Both*The Audubon Society Field Guide to North American Minerals* , and the*Eyewitness Handbooks: Rocks and Minerals* provide photos and "tests" for bauxite. Bauxite isn't necessarily red; it can be white, yellow or brown. (EB11-B) Red is a sign of the presence of ferric iron oxide, although the ore's color "is no sure criterion of the iron content." (EA)

* * *

We want bauxites with a high alumina content. The 1911EB gives Grantville researchers the following composition data:

* Antrim (Irish) bauxites: 33-60% alumina, 2-30% ferric oxide, 7-24% silica, balance titanic acid and water. (Encyclopedia Americana says that the finest Antrim bauxite is "almost free from iron.")

* French bauxites: 58-70% alumina, 3-15% "foreign matter," 27% silica, iron oxide and water.

* American bauxites: 38-67% alumina, 1-23% ferric oxide, 1-32% silica. (EB11-Al, 768) (EA says that in America, ore is available with "as little as 1 percent iron oxide and 3 percent silica").

Would-be aluminum barons will no doubt show prospective investors the encyclopedia page which states "by far the greatest quantity of commercially exploited bauxite lies at or near the Erth's surface. Consequently, it is mined in open pits requiring only a minimum removal of layers of soil and rock covering the ore." (EB-IEP 389)

The modern EB says that "bauxite beds are blasted loose, dug up with power shovel or dragline, and the ore transported by truck or rail to a processing plant. . . . Refining plants are located near mine sites, if possible, since transportation is the major item in bauxite costs."

In the 1632 universe, we will still be able to use explosives to blast away overburden, if necessary. However, access to power shovels and dump trucks will initially be limited to mining sites within driving distance of Grantville. Hence, if we are mining it further away, we will be collecting the bauxite with pickaxe and shovel, carrying it out of the mine by wheelbarrow, hoist, or mine car, and shipping it to the processing plant by pack mule, wagon, barge or ship.

How much ore do we need? Assuming an alumina content of 50%, it takes two pounds of bauxite to make one pound of alumina, and two pounds of alumina to make one pound of elemental aluminum. (EA)

Bauxite Confidential

How easy is it to find and mine bauxite? Bauxite was discovered in 1821 by Pierre Berthier. Berthier was an amateur geologist, on holiday in Provence, and his attention was caught by a conspicuous band of red earth in the white face of a limestone ridge near Les Baux. (Raymond, 220-1)

In 1858, the prominent chemist Henri Deville, who had developed the first commercial process for making aluminum, was sent a sample of an "iron ore" which an engineer in Marseilles had been unable to smelt. Deville identified it as high-grade bauxite. The sample came from nearby Les Baux, and was found in a kilometers-long exposed seam—much like the one which Berthier had found previously. (Raymond, 224)

Germany. While Germany is not even listed in Brubaker's 1963 overview of bauxite countries, a German website says that in 1918, Germany was the "world's fourth largest bauxite producer." It adds, "The pit "Eiserne Hose" near the town of Lich has been in production until 1975. Miocene basalt is weathered to depths up to 100 m and overlain by bauxite." A photograph shows a roadside falloff on which a red soil is exposed. http://mindepos.bg.tu-berlin.de/mk/mkb1.htm

Rest of the world. About 80% of world bauxite production is from surface mines, usually exploiting "blanket deposits." (International Aluminum Institute, IAI) Blanket deposits may be exposed, or covered with some kind of overburden which must be removed by open-pit techniques.

According to IAI, "large blanket deposits are found in West Africa, Australia, South America and India. These deposits occur as flat layers lying near the surface and may extend over an area covering many kilometers. Thickness may vary from a meter or less to 40 meters in exceptional cases although 4-6 meters are average." That sounds promising.

In British Guiana and Dutch Guiana (Suriname), we can find blanket deposits up to forty feet thick, and covered by up to sixty feet of overburden (typically sand and clay, not rock). The ore is 58-63% alumina, 2-5% silica, and 3-6% ferric oxide. The Gold Coast deposits are fairly similar: average thickness is 33 feet, maximum 60 feet; and as much as 64% alumina. (Bateman, 558-9)

Lancashire says that Jamaican bauxite is also near the surface (usually not more than 100 feet underground). Moreover, the overburden is soft, and thus easily removed. A map of bauxite mining areas shows that they cover about half of the central third of the island (the region earmarked by the*Hammond Citation World Atlas* as being of interest).

According to IAI, in southern Europe and Hungary, bauxite is most often found in pockets. These may need to be reached by tunneling.

Extracting Alumina

The alumina can be isolated from bauxite by the 1888 Bayer process. There is a general description of this process in both the*Encyclopedia Americana* and the modern*Encyclopedia Britannica* . The bauxite is washed with a hot sodium hydroxide solution, converting the aluminum oxide to a "green liquor" of saturated sodium aluminate. The bauxite impurities (silica, iron oxides, and titanium dioxide) are less soluble and to some degree are filtered out, using cloth filters, as a "red mud."

Crystal "seeds" are added to the liquor, and the solution is allowed to cool, so that an aluminum hydrate (hydroxide) precipitates out. The aluminum hydroxide is then heated (EA says to 1093.3 deg. C (2000 deg. F) to produce the purified aluminum oxide (alumina) in the form of a sugar-like powder. The 1911

EB provides some additional information, such as the specific gravity of the sodium hydroxide solution (from which a chemist can calculate its concentration).

The modern*Encyclopedia Britannica* says that alumina, after purification for smelting purposes, usually contains less than 0.1% of other oxides.

Alumina Confidential

Our heroes will be pleasantly surprised to discover that most bauxite will not require a great deal of processing. If there is a lot of clay mixed in, it can be removed by "washing, wet screening, cycloning or hand picking." (International Aluminum Institute) The ore should also be crushed so as to increase the surface area over which the dissolution can take place.

The necessary temperatures are dependent on the nature of the bauxite mineral. Gibbsite requires just 135-150 deg. C; Boehmite, 205-245; and diaspore, even higher temperatures. Sodium hydroxide concentrations may also need to be increased to complete extraction of the more stubborn minerals. (Lancaster)

The real bugbear is silica content. Lancaster says that ores with more than 7% silica cannot be economically processed, but of course that depends on the prices and availability of alumina and aluminum. Bateman says the allowable silica is only 4.5%. (554)

Essentially, the problem is that the same sodium hydroxide which dissolves the alumina (aluminum oxide) also dissolves the silica (silicon dioxide). The dissolved silica reacts with sodium aluminate to form sodium hydroaluminosilicate, which is essentially a waste product. "As a result, 0.666 kg NaOH and 0.85 kg Al2O3 per 1 kg of silica are lost irrevocably." (Rayzman) Silica content varies from one deposit to the next, and hence it would be prudent to assay it before beginning mining operations.

There is a trick for processing high-silica ores, and it is mentioned in the modern Encyclopedia Britannica. The infamous red mud is heated with limestone (calcium carbonate) and soda to regenerate sodium aluminate, and the solution is fed back into the Bayer process. The residue, rich in silicate, is called "brown mud."

Another possible problem impurity is ferric oxide. Bateman says that bauxite ore should have not more than 6.5%. (554)

The amount of "red mud" waste generated for each ton of alumina produced depends on the ore, being just 0.33 tons for Surinamese bauxite, one ton for the Jamaican, and two tons for the Arkansan. Efforts have been made to find uses for it, or alternatively to treat as a low grade iron, titanium or aluminum ore and extract metal from it. (Chandra, Waste Materials Used in Concrete Manufacturing, 292)

From Alumina to Metallic Aluminum: The Hall-Heroult Process

In nature, aluminum exists in an "oxidized" state (combined with other elements, especially oxygen). To

obtain the metal, the aluminum must be "reduced," usually in an electrolytic cell.

The cell (pot) is the reverse of a battery; a battery uses a chemical reaction to create an electric current; an electrolytic cell uses a current to force a chemical reaction to occur.

Inside the cell is an electrolyte, a fluid medium in which ions and electrons can move. Like a battery, a cell has two poles. The cathode provides the electrons, and they leave the cell at the anode. Reduction occurs at the cathode and oxidation at the anode.

There is a decent description of the Hall-Heroult process in the*Encyclopedia Americana* . The electrolyte is a melted (982 deg. C) solution of alumina in cryolite; no water is involved. (Cryolite is needed because the melting point of pure alumina is 2050 deg. C.)

The cryolite is held in a carbon-lined cast-iron shell, whose bottom serves as the cathode. Carbon rods are suspended in the melt; they are the anode. Current is passed from the anode to the cathode, reducing the aluminum oxide to aluminum, and releasing oxygen (which attacks the carbon rods, producing carbon dioxide).

The Hall-Heroult process was developed in 1886, and by 1892, it was routinely producing aluminum which was over 99% pure. (Wallace, 9) If you need material of, say, 99.9% purity, you will need to further refine it.

The principal inputs are: alumina (aluminum oxide), cryolite, electricity, and carbon (for the rods). We have already discussed alumina. What about cryolite?

Cryolite

The 1911EB says that, except for "mechanical losses," the initial charge of cryolite would last indefinitely. That makes sense, because cryolite acts a flux, reducing the melting point of the alumina, not a reactant. So, the amount of cryolite you need should be dictated just by how much alumina you want to process at one time.

In practice, as the encyclopedia implies, some cryolite is lost. However, there are some tricks (which Grantville must re-invent) for regenerating it once smelting is underway.

Natural Cryolite. Cryolite ("frost stone") is a mineral, sodium aluminum fluoride (Na3AlF6, so NaF:AlF3 is 3:1). 1911EB reveals that cryolite can be found "almost exclusively at Ivigtut (sometimes written Evigtok) on the Arksut Fjord in SW. Greenland." The article on "Greenland" notes that the mines are in the district of Frederickshaab, and provides a lovely map showing the location of Ivigtut, "Arsuk" Fjord, and a prominent landmark, Cape Desolation.

This information will be meaningful to down-time mariners, at least the whalers who frequented Greenlandic waters. Both the Cape, and a fjord of the correct shape, are shown on a map made by William Barents and published in 1598. (Braat)

Once our shivering crew of geologists is disembarked at Ivigtut, they know that they want to look for a "granitic vein running through gneiss," and that the cryolite is "accompanied by quartz, siderite, galena, blende, [and] chalcopyrite."

Once they locate the correct formation, they can look for the actual mineral. 1911EB sets forth its color, crystal form, cleavage, hardness, specific gravity and "flame test" result. Most distinctively, it is "nearly transparent on immersion in water."

A picture would still be nice, and there we are in luck. There is one in Hochleitner,*Minerals: Identifying, Classifying, and Collecting Them*(1992), which also mentions that it is found in pegmatites (probably more accurate than "granitic veins"), in association with siderite, fluorite, topaz and quartz. There are more photos in*The Audubon Society Field Guide to North American Minerals*, and *Eyewitness Handbooks: Rocks and Minerals* .

Whittaker states that cryolite "was traded as early as the beginning of the 18th Century amongst the native people of the western coast of Greenland." It is possible that the mineral was already known in 1632 to the Inuit Eskimos, in which they can be paid to guide an expedition to the source.

Still, it doesn't take much imagination to appreciate that mining cryolite in Greenland will be arduous and perhaps dangerous. According to 1911 EB, Deville toyed with the idea of using cryolite as an aluminum ore, but, "finding the yield of metal to be low, receiving a report of the difficulties experienced in mining the ore, and fearing to cripple his new industry by basing it upon the employment of a mineral of such uncertain supply," decided to produce aluminum instead by chemical reduction of aluminum chloride (see below).

Anyone seeking to raise money for a cryolite expedition will have to explain away Deville's mid-nineteenth century objections. One possible excuse would be that Deville was influenced by the French supply of bauxite, which might not be made available to other powers.

Synthetic cryolite. The uptimers know that cryolite can be synthesized (EA), and they at least know its chemical formula (Na3A1F6).

There are several chemists in Grantville and each will have a personal library of chemistry texts. It is within the realm of possibility that even a general chemistry book will explain how cryolite is made. For example, my own library includes a 1993 introductory college chemistry text which suggests adding sodium hydroxide and hydrogen fluoride to aluminum hydroxide (from the Bayer process). The reaction is 3NOH + Al(OH)3 + 6HF -> Na3AlF6 + 6H2O. (Ebling, 880)

But I think that a good chemist could probably work it out without this help.

Cryolite Confidential

More on Natural Cryolite. There are contradictory accounts about early mining at Ivittuut. What I think is most accurate is that there were two separate operations there. Julius Thomsen and George Horwitz obtained a license to mine cryolite in 1854, but didn't commence large-scale mining until 1859. In the meantime, in 1854-55, two other entrepreneurs extracted forty tons of silver-bearing galena (itself lead sulphide). (Greenland BMP) They decided, after six months, that the formation wasn't rich enough to warrant further work. (Whittaker)

About 3.7 million tons of cryolite ore, with an average cryolite content of 58%, were mined in the period 1854-1987. The mine closed because it had become uneconomic to compete with synthetic cryolite (see

below).

Cryolite was initially wanted for use in a new process for production of soda (sodium carbonate), which Thomsen had patented in 1853. Thomsen decomposed cryolite with calcium hydroxide into calcium fluoride and sodium aluminate. He filtered off the former, and added carbon dioxide to get aluminum hydroxide and sodium carbonate. (Hornburg 31)

The Thomsen synthesis was used until the 1890s, when it was superseded by the 1864 Solvay ammonia-soda process. (Hornburg) The handwriting had been on the wall for several years, of course, and Thomsen's company, Oresund Chemiske Fabriker, had been trying to develop other markets: soap factories, manufacture of enamel, insecticide ("cryocide"), abrasives. (Hornburg; Grossman)

The advent of the Hall-Heroult process, which used cryolite as a flux, was extremely fortunate for the Danish-owned cryolite operation. In 1904, about 25% of cryolite was sold for this purpose, while, by 1939, it was 82% of their market. (Travis, 335)

Cryolite was also used, in the period 1855-64, as an aluminum ore in the Rose-Dick process (see Alternatives to Hall-Heroult Process, below). However, only about fifteen tons was exported from Greenland for this purpose.

According to a University of the Arctic course, "it was mined in an open-pit with easy accessibility and an ice-free harbor." However, while Hurlbut's*Minerals and Man* (88) admits that the cryolite is "easily extracted," it warns that the harbor was only free of ice for a "brief period," and asserts that "mining is difficult because of the harsh climate."

It is certainly promising that in OTL, cryolite was mined for 128 years. The very volume of the industry tells us mining cryolite was quite practical in the late nineteenth and early twentieth centuries. Production was 14,000 tons in 1857-67; 70,000 in 1867-77 (Johnson's) Obviously, we're talking about more than one shipload a year.

However we do need to ask whether, in 1859, when the cryolite operation began, Europeans were better equipped to sail in Arctic waters (e.g., better maps and navigational equipment) and to live and work under Arctic conditions (e.g., Burberry garbardine windproofs) than they would be in the 1632 Universe. Indeed, by the end of the nineteenth century, they could have used steel-hulled steam ships.

Moreover, our ability to reliably access cryolite will be hindered by both war and piracy, neither of which were serious concerns for Thomsen in 1859.

Even the climate is probably worse; the 1630's fall within the Little Ice Age (which lasted until 1850). Brian Fagan, in his book of that title, refers to the seventeenth century as "bitterly cold." A volcanic cold spike is due to occur in 1641.

The fact that cryolite has significant uses, other than as a flux in the Hall-Heroult process, will make it easier to attract investors for a cryolite mining venture; they can turn a profit even if the aluminum industry dies stillborn. However, bear in mind that sodium carbonate, while a very important industrial chemical, can be made not only by the Thomsen cryolite process, but also by both the earlier Le Blanc process (1791) and the later Solvay process, both described in Grantville encyclopedias.

I think natural cryolite will be of greater interest to the French, rather than the up-timers, since they are less likely to figure out how to synthesize cryolite, and hence will need natural cryolite as a flux for alumina.

More on Synthetic Cryolite. Hall didn't use imported cryolite, he made it himself. Which in turn implies that the process isn't real complicated. After all, Hall was working in the woodshed behind his family home. And he had very little formal training in chemistry. (Oberlin)

Synthetic cryolite was commercially available at least as early as 1900, and, by 1930, was offering "serious competition" to the natural product. (Travis, 335)

Safety. It may appear that a big disadvantage of synthetic production of cryolite is that hydrofluoric acid, which is quite nasty stuff, is directly or indirectly involved.

However, even if natural cryolite is used, it is standard practice to add other fluorides to improve the properties of the liquid—and these may also be made using hydrofluoric acid. Moreover, processing cryolite itself is not without risks—fluorosis was discovered in the workers at the cryolite-to-soda factory in Copenhagen.

Electricity

It will be obvious to anyone reading the encyclopedias that aluminum smelting is energy intensive, although the sources disagree somewhat as to how much electricity is needed. The 1911EB reports an aluminum yield of one pound per twelve e.h.p. hours (nine kilowatt hours). According to the *Encyclopedia Americana*, it takes about ten kilowatt hours (kWh) to produce one pound of aluminum. The modern EB reports that while, in 1930, it required 12 kWh to produce one pound of aluminum, this had dropped to 4.5 by the early 1980s. (IEP 391) I'll use the 10 kWh figure for now.

The Grantville power plant is a 200 megawatt steam turbine plant, operating at 58% load at the time of the Ring of Fire (Loren Jones, "Power to the People,*Ring of Fire*). The plant is expected to fail in eighteen to twenty-four months, by which point they expect to have a steam engine and generator running which will supply ten to fifteen megawatts.

According to DOE, in 2001 the average electrical consumption in the United States was 10,656 kilowatt-hours per household. There were about 1,000 households in the Grantville area transported by the Ring of Fire.

The current power plant can produce a maximum of 1,752,000 megawatt hours annually. But the immediate post-Ring of Fire load, considering only the remaining residential customers, is just 10,656 megawatt hours—less than one percent of the production capacity.

Once the power plant gears down from 200 megawatts to ten megawatts, it still can output 87,600 megawatt hours/year. And the residential load would absorb just 12% of that. The remainder is still sufficient to smelt over 700,000 pounds/year aluminum—not that we'll be making that much anytime soon!

With most of its customer base left behind, and a payroll to meet, the power plant needs to find new customers, fast. Power companies love smelters because they exert a steady, high demand for electricity.

Electricity Confidential

In 1995, the electricity required by modern plants—not counting generation and transmission losses—was 13 kWh/kg (1 kg = 2.2 pounds). The theoretical minimum is 6 kWh/kg(Choate, 25).

However, it is probably more meaningful to look at early practice; the first commercial cells in Pennsylvania (Hall) and Switzerland (Heroult) were drawing over 40 kWh/kg. (Id.) That's about twice as high as the most conservative encyclopedia value.

Carbon

Carbon is needed, both to line the electrolytic cell, and for the anodes. The lining protects the pot from corrosion by molten aluminum and fluorides.

Carbon Confidential

In Grantville, there is*no* design information on either the linings or the anodes, so that will all have to be worked out empirically.

One important design parameter is the thickness of the carbon lining. This must vary so the electrolyte (the cryolite) freezes on the inner walls but not on the bottom. (Kirk-Othmer, 195) The advantage of this "ledge" is that it protects the lining from corrosion. Cryolite also freezes to form a crust at the top of the pot, which helps retain heat (and reduce the heating bill).

Another parameter is the chemical nature of the lining. The bottom lining acts, initially, as the cathode. (Once the process has commenced, a pool of aluminum collects at the bottom, and that becomes the true cathode.) Since the carbon lining must be conductive, it is either natural graphite, or carbon baked to form a "graphitic" structure (carbon atoms mostly connected in closely-spaced layers). Anthracite can be used, as high purity is not as important as in the anodes. (Totten, 2:38)

With regard to the carbon anodes, there are two major designs in modern use. "Prebaked anodes" are made by baking blocks of petroleum coke and coal tar pitch ("paste") at 1,000-1,200 deg. C. The advantage of petroleum coke is that it is low in ash (silica, iron oxide, etc.); as the anode is consumed, any silicon or iron would deposit in the aluminum. Coke can be made from coal, but then it has to be purified to remove the ash.

Soderberg anodes are "continuously self-baking." What that means is that the operators are continuously feeding petroleum coke and coal tar pitch into a casing. These materials are baked by the heat of the pot, forming the carbon anode at the bottom of the casing. A smelter using Soderberg anodes doesn't need a carbon baking facility.

The prebaked anodes are about 30% more conductive, but Soderberg anodes are baked using waste heat. Overall, smelters using prebaked anodes are about 3% more energy efficient. (Brubaker)

Prebaked anodes are also more environmentally friendly; the hydrocarbon waste gases are collected

more readily in a carbon-baking facility than at the pot.

Small operators may prefer Soderberg anodes because they don't require capital investment in a carbon baking facility and have slightly lower labor requirements. (Beck; Brubaker, 91-96)

The problem for Grantville is not so much the choice between prebaked and Soderberg anodes, but rather appreciating the advantage of using low-ash carbon. The ash content of bituminous and anthracite coals is 1-10%, while that of a typical oil distillate is 0.5-1.5%. (Scurlock)

Grantville Knowledge of the Hall-Heroult Process

The electrical current has two functions: (1) heating the cryolite-alumina mixture so it melts, thus forming the electrolyte solution, and (2) reducing the aluminum. Curiously, while the current density was given, the total current wasn't. The working temperature is said (by EB11-Al) to be 750-850 deg. C., and of course this must be maintained for the reduction to continue.

The voltage applied to each cell was 3-5 volts, and 10-12 such cells were connected in series, so the total voltage drop was 30-60 volts. The essayist recognized that part of the voltage was needed to overcome the resistance of the electrolyte, and that, in doing so, it heated it. I will say more about that in the next section.

* * *

We next turn to the modern*Encyclopedia Britannica* . This, of course, is describing more recent practice. The normal pot voltage is about the same (4-6 volts), but pot lines are now 50-150 cells, requiring a total line voltage of 200-900 volts. The currents are much higher, 50,000 to 100,000 amperes.

The reported pot temperature is 950 deg. C (higher than before), and the alumina is apparently preheated at this temperature to drive off moisture.

A figure shows an alumina supply hopper over the cell, with the anodes flanking the hopper outlet. The molten aluminum is periodically siphoned off the bottom of the cell. While not shown, there is reference to the addition of aluminum fluoride to "restore the chemical composition of the bath." (EB-IEP 390-1)

Hall-Heroult Process Confidential

In the cell, aluminum oxide is being reduced to aluminum at the cathode (requiring 2.2 volts), while carbon is oxidized to carbon dioxide at the anode (supplying 1.0 volts), for a net minimum requirement of 1.2 volts direct current (at 960 deg. C.) to drive the reaction.

Higher voltages are used because there are electrical energy losses as a result of the electrical resistance of the cryolite, the anodes, the deposited aluminum, and so forth.Each resistance requires a certain voltage to overcome it, and that voltage drop equals the product of the resistance and the current. The biggest voltage drops are in the anode (0.3-0.42 volts), cathode (0.45-0.68 volts), and electrolyte (1.75-1.535 volts). Also, overvoltages at the anode (0.51) and cathode (0.08) help to drive the reaction.

(Prasad; Kirk-Othmer 2:197-8; Choate, 31)

* * *

Electrical energy is converted by the resistance into heat energy at a rate equal to the voltage times the current. Thus, the energy bill exacted by the resistance of the materials is proportional to the*square* of the current.

Some of this heat is put to good use; it keeps the electrolyte molten, or, if the anodes are of the Soderberg type, it bakes them. The rest is just waste heat. Heat loss occurs at the top of the bath (through the cryolite crust and the carbon anodes), and at the sides and bottom (through the cryolite "side freeze" and the carbon lining). Some heat loss at the sides is desirable to form that "side freeze," which reduces corrosion of the lining. The aluminum metal protects the carbon at the bottom.

It follows that both the electrical conductivity of the electrolyte, and its melting point, are of concern. Density is also important, as the produced aluminum must be able to sink through it to the bottom of the pot, lest it short out the anode rods.

* * *

The 1911 EB says that cryolite dissolves about 30% of its weight of pure alumina (EB11-Al, 78), implying an alumina content of 23% of the melt. That's way too high for economical production. The cryolite-alumina solution with the lowest melting point (960 deg. C) is one which is 89.5% cryolite, 10.5% alumina. (Kirk-Othmer) The solubility of the alumina increases with temperature, being about 15% at 1050 deg. C. Of course, the higher the temperature, the higher the energy requirements, so you want to limit the alumina content.

Usually, other fluoride salts are added to improve the characteristics of the electrolyte. Each addition can affect the melting point, the solubility of the alumina, the electrical conductivity, and the density. Reducing melting point or increasing conductivity saves electricity. A high solubility makes it easier to maintain proper alumina levels. The density must be less than that of aluminum, so the metal sinks.

The addition of other salts reduces the solubility, perhaps to about 6%, but also reducing the melting point to as low as 920 deg. C. (Prasad; Aurbach, Nonaqueous Electrochemistry, 503) A typical electrolyte is 2-8% alumina, 5-7% calcium fluoride, 5-7% excess aluminum fluoride, 0-7% lithium fluoride, and 80-85% cryolite. (Kirk-Othmer 2:193, 11:282)

The calcium fluoride usually is not added intentionally, because it reduces conductivity and increases density (so there is a risk that aluminum will float to the top and get re-oxidized, or short out the cell). It is derived from calcium oxide in the alumina. The level in alumina is perhaps 0.4%, but the calcium accumulates in the melt. Calcium fluoride does offer one benefit; it reduces the melting point.

The effects of aluminum fluoride are similar. However, it's deliberately added for several reasons. First, to compensate for loss of the aluminum component of the cryolite. Molten cryolite dissociates to some degree into NaF and NaAlF4. The latter vaporizes more readily, reducing the aluminum-sodium ratio. Also, the moisture in the air reacts with the cryolite to form sodium fluoride, hydrofluoric acid, and alumina, thus further worsening the ratio. (Kirk-Othmer, 11:280)

Another reason to add aluminum fluoride is to eliminate sodium oxide (Na2O), an alumina impurity (~0.6%). The reaction is 3Na2O + 4AlF3 -> 2Na3AlF6 + Al2O3 (Kirk-Othmer, 2:192) Conveniently, this reaction also helps replace cryolite lost as a result of vaporization, absorption by the pot lining, etc.

The conductivity of the electrolyte is improved by adding lithium fluoride, which also reduces both melting point and density.

* * *

In the course of the operation, the level of alumina will drop. If it drops below 1-2%, the pot voltage rises, and the cryolite is itself electrolyzed ("anode effect"). The fluorides react with the carbon anodes to form polyfluorocarbons, which are carcinogenic. (Beck) If, to avoid or stop an anode effect, you add too much alumina (concentration over 4%), some alumina is deposited, forming a sludge which reduces the current flow. Lowering the pot temperature below the normal 960 deg. C. saves energy, but narrows the "safe" alumina concentration range (Choate, 35)

The pot must be agitated to keep the alumina solubilized in the cryolite. However, if you agitate too aggressively, you run the risk of short-circuiting the pot (by bringing the aluminum in contact with the carbon rods).

* * *

There are just two basic ways of increasing production: increasing the current running through the pots, and adding more pots (either to an existing pot line, or to a new one).

The theoretical production rate per cell is proportional to the current; if the current is 180,000 amperes, Faraday's Law predicts that the cell will produce 1,450 kilograms aluminum per day.

Hall's first commercial cell used only 1,750 amperes, and in the Thirties, Wallace thought that the maximum amperage was 30,000. Modern cells can reach as high as 500,000 amperes, but 180,000 is quite respectable.

While higher currents increase production, they also create more heat (leading perhaps to ventilation problems) and stronger magnetic fields (which can disturb the aluminum pool). (Brubaker, 94) If currents are increased, without changing pot size, there is faster corrosion of the cathode, and fluorocarbon formation at the anode.

A small amount of the current is wasted, as a result of side reactions, concentration gradients, transient short circuits, and so forth. (Prasad, Kirk-Othmer, Choate) In the first commercial cells, the current efficiency (the percentage of the current which actually resulted in net production of aluminum) was only 75-78%. (Choate, 25) For modern cells, it is 85-95%. So a 180,000 ampere pot which was 90% efficient would produce 1,305 kilograms daily.

Don't confuse current efficiency with energy efficiency (the percentage of the electrical energy entering the smelter which actually is used to reduce aluminum). Because additional voltage must be used to overcome electrical resistance, energy efficiency is only about 26%. (Choate, 31)

The total amperage useable by a smelting operation in Grantville may be limited by the power generation and transmission equipment, or by allowable current densities in the pots. At that point, adding pots is the only way to increase capacity. Modern potlines usually don't exceed 300 pots, but of course you can add potlines.

The total size of the smelter is limited by the local availability of electricity, land, building supplies and labor.

Subsequent Processing

The molten aluminum is transported to a holding furnace. If the intent is to make an aluminum alloy, the alloying elements are added at this point. When the composition is correct, the alloy is poured into a mold, in which it cools to form an ingot. The ingot can then be further manipulated.

Aluminum (and its alloys) can be cast by melting it and then pouring it into a packed sand mold or a permanent iron or steel mold. Aluminum has a relatively low melting point (660 deg. C.), which facilitates casting.

Molten aluminum dissolves iron, so if it is cast in an iron receptacle, the latter needs a protective coating. If silica is present, perhaps as a binder, the aluminum will reduce it, producing elemental silicon.

The molten aluminum can be worked in a variety of ways, depending on the alloy, including rolling (into sheets or foils), forging (hammering), extrusion (pushing through a hole) or drawing (into wires).

Heat-strengthening a suitable aluminum alloy (e.g., aluminum-copper) requires controlled temperatures and uniform heating of the furnace. (Hultgren, 297-8) The modern EB describes the process (which it calls "solution heat treatment") in general terms: (1) heating the metal for 6-24 hours at temperatures of 370-535 deg. C., (2) quenching, in hot (66-100 deg. C.) water for casting alloys, or in water at room temperature for wrought alloys; and (3) "aging" the metal, either at room temperature or, to accelerate the process, at a higher one (the encyclopedia says, "somewhat above the boiling point of water"). (IEP 392, 395)

The optimal time-and-temperature conditions are alloy-specific. More detailed specifications may appear in the personal library of one of Grantville's engineers or machinists—for example, treatments for five common alloys appear in Walsh's*Machinists' and Metalworkers' Pocket Reference* (9-25).

Of course, to make sure the temperature is correct in practice, we will need pyrometers.

Welding aluminum, especially to other metals, can be somewhat tricky but hopefully the welders of Grantville already know something about this.

Quality Control

An important consideration in aluminum production is the minimization of impurities, whether you are engaged in primary production (from ore) or secondary production (recycling of foundry scrap or aluminum articles).

The basic problem is that, of the common metallic elements, only potassium, sodium, calcium and magnesium are more reactive than aluminum. Once a less reactive element is associated with the aluminum, it is "practically impossible" to remove it. (NAP, 53) Hence, impurities—at least those which adversely effect the properties of the desired alloy—must be minimized. That means that the raw materials should be as pure as possible.

The impurities come primarily from the anodes and the alumina. (Kirk-Othmer, 2:196)

The most common impurity in aluminum is iron. In general, it is considered undesirable (note that the Bayer process deliberately removes iron oxide), and the iron content of commercially pure aluminum is typically 0.08-0.5%. (Belov, 185-6) If iron content is excessive, iron aluminide crystals form, which have an undesirable effect on formability, fatigue resistance and surface finish. (Key to Metals) Iron also interferes with heat hardening. (Hultgren, 302)

Next most common is silicon, which is problematic because it can render the aluminum more brittle. However silicon is deliberately added to some alloys to increase castability. The other principal impurities in "primary" aluminum are titanium, vanadium and manganese.

Calcium, lithium and sodium are derived from the fluoride electrolyte. Hydrogen and oxygen can also be troublesome, and are found in the raw materials and in the air. In recycling "secondary" aluminum, elements (e.g., zinc, magnesium) deliberately added when making the original alloy may be undesirable if the desired alloy is different.

* * *

If the ultimate goal is to manufacture an aluminum alloy, then the quality of the source of the alloying element must also be known, and, the melt will be tested, and adjusted, until the desired alloy composition is achieved.

Modern chemists and metallurgists are accustomed to relying on instrumental methods. After the Ring of Fire, the up-timers have access to two appropriate instruments. The power plant has a "Metallurgist XR," which is a portable X-ray fluorescence spectrophotometer specifically designed for alloy analysis. (Boyes) And, even more surprisingly, the high school has a $300,000 atomic absorption spectrophotometer given to them in October 1997 by LaFarge Corp.

Neither of these instruments is going to remain in working order for very long. However, while they last, we can assay a lot of ores from different suppliers, and also reconstruct the compositions of the many different aluminum alloys which are available in Grantville. Just analyzing the parts of an automobile could allow reconstruction of the composition of representative alloys of all of the major types, including the high strength aluminum-magnesium 7000 series. (www.autoaluminum.org)

After they fail, we'll have to rely on wet chemical techniques and microscopic examination of etched metal sections. Fortunately, the two spectrophotometers allow us to assemble a library of photographs of the microscopic appearance of alloys of known composition.

Uses for Pure Aluminum

The uses for pure aluminum are constrained by its relatively low hardness and tensile strength. Nonetheless, there are significant markets for it.

Historically, the first uses of aluminum were as jewelry and novelty articles (e.g., aluminum knives and forks for court banquets). Perhaps the most dramatic prestige pieces were the Eros statue in London and the cap of the Washington Monument. For these uses, the high cost of aluminum was actually part of the attraction.

The first significant use for aluminum was in steel foundries; aluminum could be used in small quantities to scavenge oxygen, and thereby reduce blow holes and occluded gases that would otherwise weaken the steel. (Wallace, 10)

Prior to 1900, the largest market (30-50%) for aluminum was in cooking utensils, where aluminum's heat conductivity, lightness, and corrosion resistance were all big advantages. The de-oxidant market was about half the size of this one.

Aluminum gradually infiltrated other markets, including bicycle parts and locomotive headlights. However, the next major development was the adoption of aluminum for long-distance electrical lines. Aluminum has only 63% the conductivity of copper, but it weighs only 30% as much. Thus, by making the aluminum wire thick enough, you can equal the current-carrying capability of copper wire with wire which weighs only 48% as much. This in turn meant that as soon as the price (by unit weight) of aluminum dropped to double that of copper, it would have a price advantage. By 1903, 37% of aluminum sales were for conductor use, even though in that year the price ratio was actual 2.5. (Bear in mind that with lighter transmission lines, the supporting structures could be scaled down.)(Wallach, 15-17)

While aluminum wire was not as strong as copper wire, this problem could be overcome (as it was in 1908) by wrapping aluminum strands around a steel core. This increased the weight (e.g., to 80% that of copper) but the composite was 57% stronger.

Aluminum could be rolled much thinner than tin, so that allowed it to make inroads into the foil industry before 1908. (Wallace, 18) Ultimately, this led to the use of aluminum foil in electrolytic capacitors. (Calvert)

Aluminum was also used in paints, beginning in 1900. (Wallace, 18) The aluminum flakes reflect both visible and ultraviolet light, and protect the substrate from corrosion (Calvert).

Another important use of unalloyed aluminum was in the "thermite" process. Aluminum was added to an oxide of another, less reactive metal, such as chromium, manganese, vanadium, tungsten, or molybdenum. The aluminum would reduce the oxide, liberating the elemental metal and producing a great deal of heat in the process.

Aluminum was also used to make reciprocating parts for machinery (where lightness was important), and vessels for handling chemicals (think corrosion resistance). A surface coating of aluminum could also be applied to other metals ("calorizing," developed in 1911).

Finally, metallic aluminum could be reacted to form various useful aluminum compounds, such as aluminum nitrate (used in explosives).

Aluminum Alloys

The impetus for alloying aluminum with other metals came from the automotive industry. They had to research the properties of the alloys, and also figure out how to cast or otherwise handle them. Bear in mind that there was relatively little use of any alloys (other than brasses and bronzes) prior to World War I. Nonetheless, duralumin (a copper-magnesium-manganese wrought alloy of aluminum) was commercially available by 1909. By 1915, one-quarter of aluminum production was used to make alloys,

and most of this went into motor vehicles. (Wallace, 20)

Aluminum alloys can be divided into two categories, casting alloys and wrought alloys. Casting alloys are formed into their final shape by, surprise, casting. That is, the molten metal is poured into a mold, the metal is allowed to harden, and the mold is removed. Wrought alloys are cast, initially, but can be further worked, by rolling, hammering, etc., "hot" or "cold." Most production is of the more versatile wrought alloys.

There is a standard classification for aluminum alloys. It is not in the encyclopedias, but it may be known to the engineers and machinists of Grantville (and even to the auto buffs). Wrought alloys are given 4 digit numbers, in which the first digit indicates the principal alloying element, as follows:

1xxx (No major alloying element, i.e., aluminum of 99% or higher purity)

2xxx (Copper)

3xxx (Manganese)

4xxx (Silicon)

5xxx (Magnesium)

6xxx (about equal amounts of silicon and magnesium)

7xxx (Zinc)

8xxx (Other)

* * *

Aluminum alloys can be light, hard and strong, thereby endearing themselves to the USE's transportation industry. Unfortunately, there are some practical problems with recreating the standard aluminum alloys in Grantville.

First, we need to know the composition of the alloy. EA says that aluminum can be alloyed with copper, magnesium, manganese, chromium, silicon, iron, nickel, and zinc. It also mentions tin, cadmium, lead, bismuth, cobalt, titanium, vanadium, boron, sodium and zirconium as special purpose additives.

EA gives the specifications for several alloys:

2024: "duralumin type," 4.5% copper, 0.6% manganese, 1.5% magnesium. (EA also explains how to heat-strengthen this alloy)

3003: 1.25% manganese

7075: magnesium, zinc, copper, chromium (unspecified amounts)

"Alclad" is described by EA as a composite material having an "alloy core" which is "coated" with "aluminum or an aluminum alloy." This allows for the combination of the strength of the alloy core (which can be aluminum, such as 2024, or steel) with the corrosion resistance of the aluminum. The cladding is usually high purity aluminum rather than an alloy.

EA doesn't describe the coating method. It isn't electroplating or vapor deposition, as one might guess. Rather, the aluminum is hot-rolled onto the alloy. (Engineering Metallurgy, 284)

In its article on "Bronze," EA lays out the composition of four aluminum bronze alloys, and suggests uses for each (e.g., gears). It also explains how to heat treat them to increase their hardness.

The modern EB describes several casting alloys in general terms: (1) 5-10% silicon, (2) 7-10% copper, (3) 4-5% copper and 10% magnesium, (4) 5% silicon, 0.5% magnesium, 1.5% copper.

With respect to wrought aluminum alloys, it suggests adding (not at the same time!) about 1% manganese for strength, about 10% silicon for low melting point alloys suitable for welding wire, and 5-6% magnesium for strength, hardness, weldability, and corrosion resistance. It says that aluminum-zinc alloys are hard, strong, and heat treatable, but doesn't suggest a particular zinc content.

Finally, it provides compositions for aluminum bronzes (which are primarily copper, but up to 11% aluminum), "superplastic zinc" (which is 22% aluminum), and two aluminum-tin alloys suited for bearings use.

EB1911 is less useful, as aluminum was relatively new at the time of publication. It generally speaks about light alloys with 1-2% of other metals, and heavy alloys in which the aluminum content is just 1-10%. In the latter category, it specifically mentions the aluminum bronzes (90-97.5% copper, 2.5-10% aluminum).

There are engineers in Grantville, and they are likely to own handbooks which provide some information. For example,*Perry's Chemical Engineer's Handbook* (1963) has nominal compositions for the wrought alloys 1100, 3003, 2017, 2024, 5052, 6063, and 7075, and cast alloys (these are old designations) 13, 380, 43, 195, 214, and 220.

I would be very surprised if Hal Smith, the retired aeronautical engineer (1633, Chap. 11) didn't have a book with the formula for the premiere aircraft alloy, 7075—assuming he didn't have it memorized. And he probably knows the proper heat treatments, too.

* * *

Secondly, we need to be able to purify the alloying element. That may mean that before we can make, say, aluminum-manganese alloys, we have to develop manganese refining technology to the point that we have a consistent material free of impurities which could adversely affect the properties of the alloy.

Generally speaking, the specifications for aluminum alloys specify that there not be more than 0.05 percent of individual "mystery" elements, and that such elements not total more than 0.15 percent of the alloy.

If you are adding just 1% of a second metal to aluminum, then if the second metal is at least 85% pure, then no more than 15% of it will be unknowns, and that will introduce no more than 0.15 percent of unknowns into the alloy. On the other hand, if the second metal is 5% of the final alloy, it had best have a purity of 97%.

My gut reaction is that the first practical aluminum alloys will be those using copper. It is my understanding that even the ancients were able to produce copper with a purity of 98 to 99%. (Garrison, 91)

Pure zinc is of particular interest, and, by the seventeenth century, it was already being produced, by smelting calamine, in China and India. (Habashi) In Europe, pure zinc was first deliberately manufactured in the 1740's. While an analysis of zinc technology is way outside the scope of this essay, that leads me to believe that the jump to zinc distillation is not a huge one for the down-time Europeans to make.

According to "Canon," Doctor Gribbleflotz succeeded in first isolating zinc from premium quality Harz Mountains sphalerite (zinc iron sulphide) by December, 1633 and, by February, 1634, had processed five tons of ore. (Offord, "Dr. Phil Zinkens a Bundle,"*Grantville Gazette,* Volume 7) Thus, a zinc smelter was a "going concern" at that point.

In April, 1634, not knowing of Dr. Phil's triumph, Magda and Sharon arranged for Grantville to receive two hundred tons of Japanese zinc by midsummer, 1635. (*1634: The Galileo Affair*, Chap. 29) It is unclear whether what they ordered was zinc ore or zinc metal.

The upshot is that I think that at least the aluminum-copper, aluminum-zinc, and aluminum-copper-zinc alloys could be made in Grantville as soon as pure aluminum was available.

* * *

What about manganese and magnesium? There are known sources of magnesium and manganese in existing mines, or in areas friendly to the USE. (Runkle, "Mente e Malleo,"*Grantville Gazette,* Volume 2)

Manganese dioxide (pyrolusite) can be reduced with carbon, and pure manganese was first produced in 1774. The 1911 EB notes that at the end of the nineteenth century pyrolusite was "extensively minded at Ilmenau and several other places in Thuringia . . ." and it describes a method used in 1893 to prepare 97% manganese from pyrolusite.

John Leggett has written a series of "USE Steel reports," which envision that, in December 1632, manganite (another manganese ore) will be imported for conversion into "spiegeleisen," a pig iron which, because of its manganese content (about 12%) is useful in the removal of oxygen and sulfur from steel (especially in the Bessemer process). The 1911 EB also mentions use of ferromanganese, which is 80% manganese.

While even ferromanganese has too much iron to be used as is in the preparation of aluminum alloys, it can certainly be refined further, perhaps electrolytically, for that purpose. Or prepared from pyrolusite, by the 1893 method.

Manganese of purity suitable for use by the aluminum industry is likely to be available two or three years after the first large-scale use of ferromanganese in the steel industry.

* * *

There are two standard methods of making magnesium, and both are briefly discussed in Encyclopedia Americana. The more common method is to obtain it electrolytically from magnesium chloride (as was done in 1808), since magnesium is even more reactive than aluminum.

It is actually easier to recover magnesium than aluminum (as I hope to elaborate upon in a future article). And magnesium has some interesting uses in its own right, for example, in pyrotechnics.

I would expect that there will be small-scale production of magnesium by alchemists like Dr. Gribbelflotz (he would fall in love with the burning magnesium ribbon experiment), but that large-scale extraction would come much later, perhaps not until two to four years after the aluminum industry commences ingot production. (In the long-term, magnesium could be serious competition for aluminum.)

In short, I am expecting that manganese and magnesium will be available for alloying use sometime in the 1640's.

Predecessors of the Hall-Heroult Process

The first method (Wohler, 1845) used to make aluminum was to pass aluminum chloride over molten potassium (an even more reactive metal). The aluminum was produced in the form of globules, each weighing ten to fifteen milligrams. Unfortunately, both aluminum chloride and metallic potassium were expensive.

In 1854, St. Claire Deville chose to reduce aluminum chloride with sodium rather than potassium. The reducing power of sodium was greater, and sodium was also less expensive. Later, he replaced the simple chloride with a double chloride of sodium and aluminum. So reformulated, the Deville process became the dominant commercial process for making pure aluminum until Hall and Heroult's simultaneous discovery of the feasibility of electrolytic reduction of alumina in a cryolite bath.

* * *

There are two other early methods which warrant discussion. One used a different ore, cryolite, already familiar to us as a flux. In water-free form, it has an aluminum content of 12.85%.

In 1855 and thereafter, John Percy, Allan Dick, and Heinrich Rose all advocated reducing it, rather than aluminum chloride, with sodium.

Deville himself experimented with cryolite, perhaps as early as late 1855, but by 1856, had received a discouraging report concerning the practicality of mining cryolite in Greenland, and probably ceased using it after 1857. In 1859 he wrote a book on aluminum which warned against using cryolite.

There were two aluminum smelters in France in the late 1850s, one at Amfreville-la-mi-Voie, near Rouen, and the other in Nanterre. Kragh says that "most" of the aluminum produced at Amfreville was made from cryolite. However, the only cryolite purchase made by the Amfreville facility was of ten tons, in late 1855. Thus, its maximum possible production of aluminum from cryolite was about 1,300 kilograms, The plant in Nanterre, it only acquired five tons of cryolite.

Most sources (e.g., EB11-Al; Johnson's; Wagner 113; Freer, 21-22; Hiorns, 347) consider the Deville method, using chemical reduction of aluminum double chlorides, to have been the dominant method of making aluminum prior to Hall-Heroult.

* * *

It is possible to electrolytically reduce cryolite, rather than alumina, to obtain aluminum. Unfortunately, as pointed out by 1911 EB, a slight variation in voltage can result in the reduction of the sodium, as well as the aluminum, producing a sodium-aluminum alloy.

* * *

Eugene and Alfred Cowles found (1885) that copper reduced the melting point of alumina to the point that it could be melted in an electric furnace and reduced with carbon. This produced a copper-aluminum alloy, called "aluminum bronze," with an aluminum content of up to 10%. The effective cost per pound of the aluminum content was one-third of that of the Deville aluminum (Wallace, 509). Unfortunately, the copper could not be separated from the aluminum, and that limited the use of the method.

* * *

The difficulties attendant on the early methods of producing pure aluminum can be judged by charting its price. Note that no attempt has been made to express these amounts in constant dollars. Prices are per pound unless otherwise stated.

Wohler method: "more expensive than gold" (Raymond, 224) "twice as much as platinum or gold" http://www.arkansaspreservation.org/historic-properties/national-register/siding_materials.asp?page=theo 1852: $545 (presumably Wohler method)(Ammen, 12) 1852: $1200/kg (CRC) 1854: 3000 francs/kg (Raymond, 224) Note: in 1854, price of potassium was 17 pounds sterling (EB11-Al)

Early Deville method: 1855: $155 (Ammen, 12) 1000 francs/kg (Raymond, 224) 1856: 300 francs/kg *Deville double chloride method:* 1859: $ 17 (Ammen, 12) 1884: $ 12 (Wallace, 4) $16 (Binczewski—same as the 1884 price of silver; laborer paid $1/day) 1886: $25/kg (CRC) 1889: $ 10 (Wallace, 9), 16s/pound (EB11-Al) 1880s: 40 francs/kg (Raymond, 224)

Hall-Heroult method: 1889: $ 5 1890: $ 2 (in 1,000 pound lots) 1891: $ 0.50 (Wallace, 13); 4s/pound (EB11-Al) 1899: $ 0.33 1910: $ 0.22 (Brubaker, 59) 1920: $ 0.31 1930: $ 0.24 1940: $ 0.19 1942-45: $0.15 1950: $ 0.17 1960: $ 0.26 1970: $ 0.29 (USGS) 1980: $ 0.76 1990: $ 0.74 1999: $ 0.66 20C high, $1.10 (1988), low 0.15 (1942-5)

Recycling Aluminum

Some writers have dubbed the twentieth century "the Aluminum Age." Because of the pervasive use of aluminum in our society, it is safe to assume that a substantial amount of aluminum was in Grantville at the time of the Ring of Fire. Some articles (e.g., aluminum wiring and some aluminum foil) will be fairly pure, others (e.g., siding, automotive parts) will be alloys containing significant amounts of other elements.

Which articles will be offered for recycling? Those for which there are reasonable (cheap, functional) substitutes available down-time.

Which articles will be accepted for recycling? Those which can be processed without unreasonable expense. The acceptability ultimately depends on how easily the aluminum alloy can be separated from the other materials with which it is now associated, and how similar that alloy is to the one which is now desired.

In general, the alloys used to make aluminum articles fall into two categories, wrought alloys and cast alloys. If you are making wrought alloys, impurities can be a serious problem, and hence even cast alloy

scrap direct from the foundry isn't usually recycled to make wrought alloys.

While wrought alloy scrap from the foundry can be recycled to make either wrought or cast alloys, once wrought alloy is incorporated into a consumer product, its recycling potential is dependent on what contaminants it has acquired.

If scrap from diverse sources is melted together to make a secondary alloy, it will limit the latter's strength and other qualities. The only common alloying element that can be removed from aluminum scrap is magnesium. (Hultgren, 298)

Aluminum Articles in Grantville

Aluminum Cans. Used beverage cans are 80% aluminum packaging. The typical contaminants for cans are dirt, moisture, plastic, glass, and other metals. Some of these were part of the can and others were mixed in with it before recycling. Lead is one of the more troublesome contaminants. (Miller)

Cans are made of wrought aluminum alloys. They may have sides made of manganese-rich alloys 3004 or 3104, ends made of alloy 5182, and tabs made of magnesium-rich alloys 5042 or 5082. (NAP, MatWeb, etc.)

Kitchen foil. Reynolds' aluminum foil is made from alloy 8111; it is about 97% aluminum, but contains 0.4-1% iron, 0.3-1.1% silicon.

Siding. Aluminum siding is one of the more obvious articles to recycle. (On Feb. 14, 2006, UPI reported that in response to increased scrap metal prices, Indianapolis thieves were stripping siding off houses.) The usual siding alloy is 3105, which is 0.2-0.8% magnesium, 0.3-0.8% manganese, and up to 0.7% iron, 0.6% silicon, 0.4% zinc, 0.3% copper, 0.2% chromium, and 0.1% titanium. I have also found reference to use of 3003, another manganese-rich alloy.

Air conditioning condensers. One heavy household or light commercial unit provides several hundred pounds of aluminum alloy. In OTL, condensers are sold for scrap when houses are remodeled or the air conditioning system is upgraded. (Knox, private communication)

Wheel Rims. These are likely to be alloys of the 6xxx series, such as 6082. Thus, they will contain silicon and magnesium.

Aluminum wire. These tend to be 1xxx series (unalloyed aluminum), such as 1350.

Cooking utensils. A typical alloy would be 3003. Actually, we are more likely to be recycling siding into cooking utensils (for the military), than the other way around. Teddy Roosevelt had an aluminum canteen when he led the charge up San Juan Hill.

Grantville Aluminum Reserves

How much aluminum was trapped by the Ring of Fire? I can estimate this by a simple top-down approach. During the period 1978-1988, the per capita aluminum consumption in the USA was 25-30

kilograms per year (Kirk-Othmer, 2:207). Let's go with the higher figure.

In 2004, about 20% of North American aluminum use was in packaging (cans and foils) (Aluminum Association). Packaging is going to make a relatively small contribution to our aluminum reserves. People don't usually buy a year's supply of soda or foil at one time. In fact, I would guess that the average person had only the equivalent of a six pack of soda cans, and a roll or two of foil, when the Ring of Fire occurred. You would need thirty-two all-aluminum cans to provide just one pound of metal. The can-and-foil reserve is so small I am going to ignore it, for now.

The other 80% of aluminum products include building materials, cars, and wiring. The period from when the product is sold to when it's discarded or recycled is called the recovery cycle, and has been estimated as being ten years for transportation (especially cars) and consumer durables, twenty for producer durables (machinery), and up to fifty years for cabling and construction. (Brubaker, 76; Choate, 61) A United Nations agency has used a weighted average life for aluminum products of twenty years (Id.), but I am going to assume a more conservative average recovery cycle for aluminum products, other than cans and foils, of ten years.

So that means that the per capita reserve of aluminum is ten times the 80% of 30 kilograms, or 240 kilograms. Eric and Virginia agree that there were about 3,500 people trapped by the Ring of Fire, so that's a total of 840,000 kilograms (about 925 American tons).

We know that's an overestimate. After all, we are crediting every inhabitant of Grantville with his or her share of aluminum use in locomotives, ships and aircraft, and they aren't actually present. (On the other hand, if aluminum is used in coal mining equipment, Grantville has more of that than does, say, Washington D.C.) But to play it safe, let's knock the estimate down to 800 American tons.

Does that still seem like a lot? In 2000, the average aluminum use was 100 kilograms per car in Western Europe. (Key to Metals) American cars are larger, but probably make less proportionate use of aluminum. If there were just 1,000 cars in Grantville (one for every 3.5 residents), that alone would add up to 100,000 kilograms (about 110 American tons).

Of course, much of the Grantville aluminum is locked up in products which people want to keep.

Recycling Technology and Economics

NAP says that if you want to use cans (3104 sides, 5182 ends) to make fresh 3104, that is possible, as the excess magnesium (from 5182) can be removed by various treatments.

On the other hand, suppose your target alloy was 7020 (used in armored vehicles and military bridges) or 7075 (used in airframes)(azom.com)? The manganese content of 3104 deliberately exceeds the standard tolerances for 7020 and 7075. And it may (because of its higher tolerances) have too much silicon or iron.

* * *

Reclamation technology is a big subject, which I will just touch upon here. Scrap is sorted based on what impurities it is likely to contain. It is then processed in a variety of ways. The first stage is likely to be mechanical, reducing the scrap to powder. Next comes "cleaning."

In pyrometallurgical cleaning, the organic contaminants are removed by heating the scrap to a temperature high enough to vaporize the impurity, while staying below the melting point of aluminum. Then, to separate aluminum from iron (and other high-melting elements), you raise the temperature enough to melt just the aluminum, and it trickles down from the furnace ("sweating").

In hydrometallurgical cleaning, the scrap is washed with water, thereby removing water-soluble components ("leaching"). After drying, the powder is passed through a magnetic separator, which removes some of the iron. If the material is placed into a viscous medium, you can separate low-density aluminum from high-density metals such as copper and iron. Of course, magnesium, another light metal, is going to keep the aluminum company.

After these cleaning processes, the scrap is ready for smelting. Scrap can be "demagged" by smelting the scrap in the presence of a flux, and a chlorinating or fluorinating agent (liquid chlorine, aluminum chloride, aluminum fluoride). The agent reacts with the magnesium to produce a magnesium chloride or fluoride which rises to the surface and is trapped by the flux. There, it is skimmed off. All of the common "demagging" agents are nasty stuff, by the way. (EPA)

* * *

Assuming that there is no impurity that must be removed, and no new alloying element to be added, the energy cost of recycling aluminum is very low. The aluminum, except at the surface, is already in reduced (metallic) form, so all you need to do (after removing, if possible, non-aluminum components) is to melt the aluminum, which has a melting point of 669 deg. C.

The energy requirement is only 0.3-0.4 kWh/kg (Choate, 63), about 3% that for smelting aluminum.

Adding alloying elements to refined scrap isn't much different than adding it during primary production.

* * *

In our time line, primary aluminum usually sells for a slight premium over secondary (recycled) aluminum. Gorg Huff has pointed out to me that products made from recycled aluminum may receive a "bonus" valuation in the 1632 universe because they were brought into that universe by a miracle, the "Ring of Fire." That would apply especially to, say, a cross or other religious artifact made of recycled aluminum, perhaps complete with a "certificate of authenticity."

Aluminum Substitutes

Aluminum has many desirable characteristics. However, for each of these, there is an alternative material, used in the seventeenth century, or obtainable with uptime assistance, which it is seeking to compete with:

- lightness: wood and, eventually, plastics
- electrical and heat conductivity: copper, silver, gold
- corrosion resistance: lead, tin, copper, silver, gold, and, eventually, nickel and galvanized steel
- reflectivity: silver

The lack of aluminum would be felt, most acutely, by the aircraft industry. In 1952, military aircraft were about 75% aluminum alloys. (Hultgren, 291) Aircraft can still be built—as evidenced by the*Las Vegas Belle* and the*Gustav*— they will just be heavier, and thus have to sacrifice payload, or range, or speed.

Why Aluminum?

Since substitutes exist, we have to ask, "Why aluminum?"

In World War Two, aluminum was the "metal of war." World War One didn't see much use of aluminum in warcraft, but it did stimulate research on aluminum alloys. (Wallace, 46-7)

However, we aren't recreating twentieth-century military technology. Rather, Grantville's plan for survival is to "gear down": "Use our modern technology while it lasts, to build a nineteenth-century industrial base." (*1632*, Chapter 11) Our plans for military hardware likewise have an American Civil War flavor—rifled muskets using Minié balls, simple breechloaders, bayonets, ironclads, Requa battery guns. (*1632*Chapter 47; Weber, "In the Navy,"*Ring Of Fire* ; Hollar, et al., "Flint's Lock,"*Grantville Gazette,* Volume 3; Hollar, et al., "How to build a machine gun . . ."*Grantville Gazette,* Volume 4)

Aluminum will become a military necessity only when our enemies have "geared up" to the point that we need twentieth century military technology—especially massed airpower—to maintain battlefield superiority. But in 1633, even the most enlightened of our enemies (Turenne) is thinking in terms of percussion caps and rifled muskets (*1633*, Chapter 21), not machine guns and tanks.

Hence, the aluminum industry is not going to be another Manhattan Project. It will need to justify its creation to hard-nosed financiers, who are more interested in return-on-investment and risk-of-loss than in the wonders left behind by the up-timers.

That means that, within a reasonable time after start up, the new aluminum company will need to be able to sell aluminum products at a profit.

The ability to profitably make an aluminum product is going to depend on the price of aluminum, the cost of manufacture, and the utility of the product in Grantville and elsewhere.

Price. In 1884, world aluminum production was about 3.6 metric tons, about one-thousandth the level of silver production. However, the demand for aluminum was also small, and so it sold at the same price by weight as silver. (Binczewski)

Historically, the industry took off once the price of aluminum dropped to about double that of copper. It is at that price that aluminum electrical wire is cheaper than its copper conductor equivalent. Between 1945 and 1950, aluminum became cheaper than copper even on a "by weight" basis. (Brubaker, 61)

There are some products for which aluminum is initially more expensive, but provides lower operating costs. For outdoor structures, aluminum's corrosion resistance means less repainting. (Those sidings we recycle may return.) In the transportation industry, replacing steel with aluminum results in less weight and thus in lower fuel bills.

Cost of Manufacture. For those writing stories set in the 1632 universe, the issue is whether it is

plausible that aluminum could be economically produced. In this author's opinion, the manufacturing cost will not be much more than it was in our timeline in the 1890-1920 period. Those who want a more detailed cost analysis may consult the Appendix.

Utility. One advantage that aluminum entrepreneurs have in 1632 which their old time line counterparts lacked is that they are already familiar with many uses for aluminum. Heroult didn't commercially exploit his discovery because he heeded the advice of an "expert," who told him that "aluminum was a metal of restricted usefulness; at most it might be used for opera-glasses. . . ." (Wallace, 512)

It is convenient to classify the aluminum products into two categories, low-tech and high-tech. Essentially, the low-tech products are those which could be sold anywhere in Europe, as soon as they can be made, because they don't require an improved technological base to make or appreciate.

The low-tech category has a high-end (jewelry), and a low-end (what the industry calls the "pots and pans" market, but which would include camping and hunting equipment). The boundary isn't necessarily a sharp one; Napoleon III had aluminum utensils and a ceremonial aluminum breastplate.

The problem is really one of marketing: how do you make the nobility pay through the nose for the privilege of owning an aluminum piece and still exploit the mass market? One approach is to start by selling a small number of aluminum articles at high prices, then, when you have exhausted the upper class market, lower your prices and go after the bourgeoisie. Another is to find some way of distinguishing the high-end product; combine it with gold or gems, or anodize it distinctively, or have a craftsman "sign it."

Other low-tech aluminum products include mirrors, siding, cans, and, perhaps, carriage frames.

Foil is something of a special case. There will certainly be a market for means of retarding spoilage of food. However, to make foil you need a rolling mill.

The high-tech markets will open up first in the vicinity of Grantville, then widen as the necessary background technology diffuses outward. If historical patterns are followed, the first of these markets will be for treating steel, then electrical wiring, then self propelled land vehicles, and finally aircraft. While nominally high tech, the steel industry market was the principal one in the United States in 1889-1893. (Wallace, 10)

It is also possible to divide the products, independently, into those which are simply aluminumized versions of seventeenth century wares, and those which are altogether new products. In the former case, the goal of the industry will be to point out the special advantages which aluminum confers on an otherwise familiar product. In the latter case, they have to create demand for something new.

Evolution of the New Aluminum Industry

In Karen Bergstralh's story "One Man's Junk" (*Grantville Gazette,* Volume 4), Herr Glauber demonstrates a fine appreciation of the post-Ring of Fire role of aluminum. In a shed, he and his colleagues find an aluminum lawn chair. As a blacksmith, he is quite aware of the properties of the material: it is light, and it doesn't rust, but it is soft. "Unfortunately, it will be years before they can make more of it. Still, that lack makes what remains all the more valuable."

Clearly, the initial activity is going to be recycling aluminum articles. In the case of Glauber's find, that

didn't even require processing the aluminum: "that should clean up and with a nice new leather seat it will fetch a fancy price in Jena or perhaps Amsterdam."

At the same time, a lot is going to be going on in other industries. We will be coaxing Venetian and Thuringian glassmakers to make chemically resistant borosilicate glass, importing and refining Japanese zinc, and producing a variety of industrial chemicals. We will be mining coal, prospecting and drilling for oil, and scaling up steel production.

This activity is both good and bad for the aluminum industry. On the one hand, it will increase the demand for aluminum products. For example, if we have gasoline, and decent roads, motor vehicles will be returned to operation, and there will be a need for replacement aluminum parts.

The post-Ring of Fire industrial ferment will also create the infrastructure to support the aluminum industry. For example, hydrogen fluoride (which is stored in carbon steel, or other HF-resistant metals, not glass) will come in very handy. Steel-hulled ships would make it safer to fetch Jamaican bauxite or Greenland cryolite. It would be nice to have pure zinc, magnesium, manganese and silicon for alloying use, too.

On the other hand, these new or improved industries are going to be competing with the aluminum industry for electricity, which is the very lifeblood of the Halt-Heroult process.

So, I see an uncertain "window of opportunity" for early development of the aluminum industry. It starts when we have in place the infrastructure, and ends when it becomes too expensive to buy electricity from the Grantville power plant. If I had to make a guess, this window will run (please don't shoot me) from ROF+5 to ROF+10.

The single most critical issue determining whether this early development occurs is probably going to be whether the up-timers figure out how to make cryolite synthetically. That at least eliminates the need for a Greenland expedition. And they do know how to make hydrogen fluoride and carbon steel.

If everything comes together, we are probably talking about production, ultimately, on the scale of Hall's 1895 New Kensington plant—up to 2,000 pounds a day. At 10 kilowatt hours a pound, that's an energy draw of 20 megawatt hours each day. Bear in mind that it took Hall five years (1888-1893) to go from fifty pounds daily to 1,000 pounds, and then two more to reach 2,000 pounds. (Beck) And we can't work out the inevitable "bugs" in the electrolytic process until we have on hand the raw materials: bauxite (to make alumina), cryolite, and suitable carbon.

Moreover, the first alloys we make are likely to be the easier ones, where the alloying element, if any, is copper or tin.

If this first window of opportunity is missed, then the next one will open when other power plants come on line. That probably means ROF+15 or later.

It is thus uncertain whether newly manufactured aluminum will be the "wonder metal" of the 1630's, or just a will o' the wisp, something pursued but never captured.

APPENDIX: Manufacturing Cost Analysis

It is extraordinarily difficult to determine how much it would cost to manufacture aluminum in the 1632 universe. Suppose we know the capital and operating costs for bauxite mining, alumina production and aluminum smelting in the twentieth century. If we try to translate the amount into seventeenth century terms, we run into the usual problems of determining the relative purchasing power of, say, the 2000 American dollar and the 1632 shilling or guilder. The economies are so different. Still, the usual rule of thumb is that one 1632 Dutch guilder is worth $42 in 2000 currency, and that one English shilling is worth half that.

Inflation also affects, to a lesser degree, the purchasing power of the cited nineteenth and twentieth century prices. Aluminum sold for about $700 per metric ton in 1900, but that is worth more like $14,800 in 2000 dollars. (USGS) Or about 700 shillings in 1632. Inflation from 1963 to 2000 was about 5.6-fold.

We can instead use a "bottom-up" approach: try to determine the labor and material requirements, and cost those out using seventeenth century sources. However, that is harder than it seems. Even if the raw material is one which is commercially available in the seventeenth century—soda, for example—its availability and cost is also going to be altered by the influx of uptime technology. And how does one cost out cryolite, or electricity?

Capital costs are another problem. Calculating the contribution of capital costs to the cost of production requires making assumptions about the loan term, the interest rate, and the ratio of production to investment. Ugh. Rebecca does offer Gustavus Adolphus loans at four percent annual interest, for economic projects, but private parties may find the rate "quite a bit higher." (*1632*, Chap. 47)

Our data are mostly based on the perfected Hall-Heroult process, as practiced recently in industrial countries. The up-timers of Grantville will undoubtedly recreate the process in a cruder, less efficient form, and they will have much less in the way of infrastructure to support them. The best we can do is to draw our data, where possible, from the early days of the industry, or from Third World countries.

Bauxite mining

Bauxite, generally speaking, is inexpensive. In 2000, the price of Bauxite imported into the United States was $23 per metric ton. That includes both mining and shipping costs, as well as the seller's profit. In 1963, the cost of mining and drying bauxite was estimated as being 1.75-4.50/ton, and its selling price, at the port of shipment, at $7.23-13.82/ton. (Brubaker 149)

The main difference between bauxite mining today and bauxite mining in the 1632 universe is that the latter will not have the advantage of power equipment. However, this advantage ought not be exaggerated. In 1900 Arkansas, bauxite was mined manually, and transported by wagon to the railroad station at Bryant.

In 1913, French bauxite was imported into the United States at a price of $3.94 per short ton. In 1915, the price of Arkansas bauxite, ready to be shipped by rail, was $4.70-5.50 a ton, whereas in 1902 it was $2.50-3.00. (ICC Reports, 37:142-3) I suspect that these prices were for bauxite mined by hand. Multiply by 15-20, and you get the equivalent 2000 prices.

Bauxite mining, at least in France, Arkansas, Jamaica, Guyana and Suriname, will be surface mining. I would therefore expect it to be somewhat cheaper, per ton of ore, than the underground mining of the seventeenth century. After all, you are just digging an open pit, not a tunnel. You don't need scaffolding to keep the tunnel from collapsing, and the tunnel dimensions don't limit the number of workers who can be extracting ore simultaneously. You don't need to pump air in, or water out.

Surface mining was definitely more labor efficient. In the case of mid-eighteenth century iron mining, "mine holes forty to fifty deep required eight miners to produce the same daily tonnage as six had done from a surface trench." (Kennedy)

I realize that the cost of labor in the New World will be higher than that in Europe. However, it is mistaken to think that the only way to obtain enough miners is to import slaves from Africa. The majority of the miners in Mexico and Peru were free Indians who were paid wages. (Bakewell,*Mines of Silver and Gold in the Americas*)

It is likely that the cost of shipping will be as high as the cost of mining. In 1963, the cost of shipping bauxite from Surinam to Holland (4,600 miles) by steamship was $6.50/metric ton, or fourteen cents per ton-mile. (Brubaker 158) That probably added 50-100% to the price at the source. Our early shipments will, at best, be by sailing ship.

It is difficult to predict what the price of bauxite will be, but it seems safe to assume that the priority will be to find deposits which are either near navigable rivers in Europe, or near the coast overseas. The cost of overland movement can be three to ten times that of the same movement by sea.

Alumina Production

In 2000, the price of metallurgical grade alumina was $226 per metric ton, whereas in 1963 it was about $60 (USGS).

Usually, the bauxite ore is processed near the mine itself, thus reducing shipping costs. Bauxite and alumina move at about the same cost per ton-mile, but if you process first and then ship alumina, you are moving only half the weight (or less).

In 1963, producing one metric ton of alumina required 2.1 tons of trihydrate bauxite (gibbsite), 80 kilograms caustic (sodium hydroxide), two tons of steam, 200 kilowatt hours of power, 130 liters of fuel oil, 3 man hours of labor, and $3.00 in equipment maintenance. If the ore was the monohydrate (boehmite, diaspore), the requirements were 2.5 tons bauxite, 140 kilograms caustic, 2.4 tons steam, 275 kilowatt hours power, 130 liters fuel oil, 4 man hours labor, and $4.00 maintenance. If the ore is high in silica, more caustic is needed, and alumina recovery is lower. (Brubaker, 88-9)

In 1963, the capital cost per metric ton of annual bauxite processing capacity was $110-150 for a trihydrate plant and $140-180 for a monohydrate plant (assuming large plants of more than 330,000 ton capacity). A plant of "only" 100,000 ton capacity would cost $50-60/ton more. The recommended minimum size for a plant in an third world country was 30,000 metric tons. (Brubaker)

Wallace said (194) that after alumina plants reach a size sufficient to produce 15-18,000 tons alumina per year, there is no further economies to be gained by further increases in scale. He also said that labor was only 10% of the final cost of alumina, and that the cost of producing alumina was primarily attributable to the raw materials (bauxite, soda, coal).

In 1995, alumina production was at a total cost of $194/metric ton, with the breakdown 30% bauxite, 18% energy, 18% labor/overhead, 15% capital, 10% other materials, and 9% "target profit." (Hadley, 10)

Smelting Costs, Generally

In 1963, producing a metric ton of aluminum in a pot with prebaked anodes required 17,000 kilowatt hours of electricity, two tons alumina, 500 kilograms carbon, 18 man hours labor, and $20 in operating and maintenance supplies. (Brubaker 96)

Cost breakdowns vary somewhat. Hadley (11) says that in 1995, the total smelting cost was $1215/metric ton: 31% alumina, 21% energy, 21% labor, 18% depreciation/overhead, 9% carbon. Welch reports that electricity, alumina and capital are each about one-quarter, with the last quarter divided between carbon and labor in roughly a 2:1 ratio. Electricity is often quoted as being as high as one-third of the total.

Smelting: Electricity

Loren Jones says to assume a payroll budget of $625,000; that corresponds to an average charge of $625 a household, or an effective 5.9 cents per kilowatt hour. At 1999 prices, the coal needed to meet the 1999 residential electrical use would be another $75 per household (see Addendum).

A single aluminum smelter comparable to Hall's 2,000 pound a day plant (1895) would be using 7,300,000 kilowatt hours a year—about 63% of the immediate post-Ring of Fire residential consumption.

The payroll is virtually a fixed cost, whereas the coal is a variable cost. In theory, to attract the aluminum smelting business, the power plant could offer a price of one cent a kilowatt hour (the coal burnt would cost seven-tenths of a cent). As the demand for aluminum increased, and other industries increased their demand for electricity, the power plant could raise the price, perhaps reaching or even exceeding the pre-Ring of Fire standard industrial rate of four cents a kilowatt hour.

Other industries will be demanding electricity, too. Eventually, the price of electricity might reach the point at which it would be advantageous for the aluminum smelting industry to relocate.

A coal-based power plant requires three times as much energy (10,290 Btu/kWh) to deliver the same amount of onsite electricity as does a hydroelectric plant (3,412 BTU/kWh) (Choate 9). Hence, I expect that the industry will eventually move to where there is ample hydroelectric power.

Smelting: Capital Costs

In our time line there were economies of scale in building larger smelters, at least up to those which produce 200,000 metric tons per year. The smallest smelters for which I have capital cost figures are those in the 20,000 ton range, costing $1,000-1,300 (assuming use of pre-baked anodes). The capital cost per ton for a 200,000 ton facility is about half that.

Smelting: Labor Costs

Labor requirements aren't great, but still they were one of the reasons for the gradual migration to larger

pots. Smelter workers will need to monitor and correct the electrolyte content, lower the anodes as they are consumed, make new anodes in the carbon baking plant, break the top crust of cryolite when alumina is added, and siphon off and cast the metal. Obviously, the 1632 universe smelters are going to be much less automated than that which is the norm in twentieth-century industrial countries. Hence, while the 1963 American norm was about 18 man hours (and $65 wages) to produce one metric ton of aluminum, in third world smelters, which are a better model for what we would be building, the likely labor investment is 30-50 man hours/ton. (Brubaker, 93-4, 155)

Smelting: Carbon

The 1911 EB says that in theory, two pounds of carbon are consumed for every three pounds of aluminum produced, but in practice, it is a pound for a pound. According to the modern Encyclopedia Britannica, the ratio is one pound carbon for every two pounds aluminum. The theoretical minimum consumption rate is actually one pound carbon for every three pounds aluminum, but the average ratio is 0.45:1.

In 1963, carbon for prebaked anodes cost $55-70 per ton. (Brubaker 91)

Smelting: Cryolite

The initial requirement for cryolite is a function of the amount of alumina which can be processed simultaneously. Hall's first pots each held 300-400 pounds (136-181 kg) of cryolite for dissolving the alumina. These pots operated at 1750 amperes. (Beck)

I am going to stick my neck out here, and say that the pot size, and more particularly the required initial charge of cryolite, are both proportional to the amperage running though the pot. In Prasad's 216,000 ampere experimental cell, which was intended to represent a modern commercial one, the ratio was 78 kilograms per thousand amperes. I don't know Hall's bath depth, but if he used 85-87% cryolite, and the bath depth is adjusted to yield the right total amount of cryolite, then his ratio is 77 to 103 kilograms per thousand amperes. That's not much of a change considering the amperage was increased more than one hundred fold.

Cryolite is lost as a result of absorption by the carbon lining of the cell, vaporization, and so forth. The consumption data is somewhat contradictory. The low estimate is that it is the equivalent of 2.5-4 kilograms fluoride per metric ton of produced aluminum. (Kirk-Othmer, 2:192; Brubaker, 96) If the fluoride all came from cryolite (it doesn't), that would be 4.6-7.4 kilograms cryolite per aluminum ton. But elsewhere Brubaker says that consumption of cryolite is 30-100 kilograms per ton (97).

The price of cryolite is also somewhat uncertain, with the quoted values ranging from $130 to $360 per ton. Cost of electrolyte in 1963 is set forth as $16-25 per ton aluminum (Brubaker 154). If the price is assumed to be $200 per ton electrolyte, that implies a usage rate of 80-125 kilograms/ton.

* * *

If the reader wishes to estimate post-Ring of Fire production costs by the "bottom-up" method, the cost of alumina can be determined from the last section. For the cost of electricity, I would assume one to four cents per kilowatt hour. Graphite was an article of commerce in the seventeenth century, and there is

data on contemporary laborer's wages.

Bibliography

Encyclopedias available in Grantville

[EB11-Al] is "Aluminum," [EB11-B] is "Bauxite," [EB11-C] is "Cryolite," all from 1911*Encyclopedia Britannica*

[EA-A] is "Aluminum," and [EA-B] "Bauxite," in*Encyclopedia Americana* . Also cited: "Hydrofluoric Acid," "Bronze."

[EB-ICP] is "Industries, Chemical Process," [EB-IEP] is "Industries, Extraction and Processing," [EB-CE] is "Chemical Elements," [EB-F] is "Fluorspar," all from the modern*Encyclopedia Britannica* .

Aluminum Industry ALCOA, "Aluminum Smelting," http://www.alcoa.com/global/en/about_alcoa/pdf/Smeltingpaper.pdf Aluminum Association, "North America Aluminum Industry - A Quick Review," (Nov. 2005) Ammen, Casting Aluminum (1985) Belov, *Iron in Aluminium Alloys* (2002) Brubaker, Trends in the World Aluminum Industry (1967) Choate, "U.S. Energy Requirements for Aluminum Production: Historical Perspective, Theoretical Limits and New Opportunities" (USDOE, 2003), http://www.eere.energy.gov/industry/aluminum/pdfs/al_theoretical.pdf Hadley, "Aluminum R&D for Automotive Uses and the Department of Energy's Role," http://www-cta.ornl.gov/cta/Publications/Reports/ORNL_TM_1999_157.pdf Key to Metals, "Aluminum Alloys – Effects of Alloying Elements," http://www.key-to-metals.com/Article55.htm "Aluminum and Aluminum Alloys," . . ./Article2.htm "Automotive Trends in Aluminum . . ." . . . article135.htm "Aluminum and Aluminum Alloys," Kirk-Othmer Encyclopedia, vol. 2, pp. 184-251. Beck, "Electrolytic production of aluminum," Electrochemistry Encyclopedia, http://electrochem.cwru.edu/ed/encycl/art-a01-al-prod.htm Binczewski, "The Point of a Monument: A History of the Aluminum Cap of the Washington Monument," JOM 47(11): 220-225 (1995), http://www.tms.org/pubs/journals/JOM/9511/Binczewski-9511.html Calvert, "Aluminium," www.du.edu/~jcalvert/phys/alumin.htm [Oberlin], "Charles Martin Hall and the Electrolytic Process for Refining Aluminum,"www.oberlin.edu/chem/history/cmharticle.html Prasad, "Studies on the Hall-Heroult Aluminum Electrowinning Process,"*J. Braz. Chem. Soc.* , 11(3): 245-51 (May/June 2000), http://www.scielo.br/scielo.php?script=sci_arttext&pid=S0103-50532000000300008 USGS, "Aluminum," http://minerals.usgs.gov/minerals/pubs/commodity/aluminum/050798.pdf Wallach,*Market Control of the Aluminum Industry* (1937) Welch, "Aluminum production paths in the new millenium," JOM 51(5): 24-28 (1999)

Bauxite Mining Primarily Bateman, Economic Mineral Deposits (1950) [IAI] International Aluminum Institute, "Bauxite Geology," http://www.world-aluminium.org/production/mining/geology.html "Bauxite Mining Methods," . . ./production/mining/methods.html "Aluminum Use by Product," . . ./applications/use.html Lancashire, "The Chemistry and Processing of Jamaican Bauxite," http://wwwchem.uwimona.edu.jm:1104/lectures/bauxite.html Rayzman, "Extracting Silica and Alumina from Low-Grade Bauxite, JOM 55(8) 47-50 (August 2003)

Cryolite; Greenland Exploration Braat, "Dutch Activities in the North and the Arctic during the Sixteenth and Seventeenth Centuries" Arctic. 37(4) 473-80 (1984) Freer, A Textbook of General Descriptive Chemistry (1892) Greenland Bureau of Minerals and Petroleum (BMP), Annual Report on Mineral and Petroleum Activities in Greenland 1998 (April 1999), http://www.bmp.gl/E/administration/periodical_shelf/EC2_10aa_aa10_1998-BMP-annual-rpt.pdf Grossman, Building a Business Through Good Times and Bad (2002) Hiorns, Principles of Metallurgy (1895) Kragh, Helge, "From Curiosity to Industry: The Early History of Cryolite Soda Manufacture," *Annals of Science* , 52: 285-301 (1995) "Greenland,"*Johnson's (revised) Universal Cyclopedia* "Cryolite,"www.mineralszone.com/minerals/cryolite.html Travis,*Determinants in the Evolution of the European Chemical Industry, 1900-1939* University of the Arctic, Course BCS331, Module 11, "Mining in the North Circumpolar World," http://www.uarctic.org/bcs/BCS331/module_11.pdf Wagner, A Handbook of Chemical Technology (1877) Whittaker, "Karl Ludwig Giesecke: His Life, Performance and achievements,"*Mitt.oesterr. Miner. Ges.* 146: 451 (2001), http://www.uibk.ac.at/earthsciences/oemg/bd_146/146_451-479.pdf

Recycling "Recycling (Nonferrous Metals),"*Kirk-Othmer Encyclopedia* , V20 Miller, Aluminum Packaging, Waste Age (2004) http://www.wasteage.com/mag/waste_aluminum_packaging_2/index.html [NAP] Separation Technologies for the Industries of the Future (1998, 2000) ***General Chemistry and Metallurgy*** Ebling, General Chemistry (1993) Garrison,*A History of Engineering and Technology* (1999) Habashi, "Discovering the 8th Metal: A history of Zinc," http://www.iza.com/zwo_org/Publications/Discovering/0202.htm Hochleitner,*Minerals: Identifying, classifying, and collecting them* (1992) Hultgren, Fundamentals of Physical Metallurgy (1952) Kennedy, "Iron mining and metallurgy," http://www.americanforeignrelations.com/Im-Ju/Iron-Mining-and-Metallurgy.html "Fluorine Compounds, Inorganic (Aluminum)," Kirk-Othmer Encyclopedia, 11:273 Raymond,*Out of the Fiery Furnace* (1984) Scurlock, Bioenergy Feedstock Characteristics, http://bioenergy.ornl.gov/papers/misc/biochar_factsheet.html

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Images

Note from Editor:

There are various images, mostly portraits from the time, which illustrate different aspects of the 1632 universe. In the first issue of the*Grantville Gazette,* I included those with the volume itself. Since that created downloading problems for some people, however, I've separated all the images and they will be maintained and expanded on their own schedule.

If you're interested, you can look at the images and my accompanying commentary at no extra cost.

They are set up in the Baen Free Library. You can find them as follows:

1. Go towww.baen.com
2. Select "Free Library" from the blue menu at the top.
3. Once in the Library, select "The Authors" from the yellow menu on the left.
4. Once in "The Authors," select "Eric Flint."
5. Then select "Images from the Grantville Gazette."

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Submissions To the Magazine

If anyone is interested in submitting stories or articles for future issues of the*Grantville Gazette,* you are welcome to do so. But you must follow a certain procedure:

1) All stories and articles must first be posted in a conference in Baen's Bar set aside for the purpose, called "1632 Slush." Do*not* send them to me directly, because I won't read them. It's good idea to submit a sketch of your story to the conference first, since people there will likely spot any major problems that you overlooked. That can wind up saving you a lot of wasted work.

You can get to that conference by going to Baen Books' web sitewww.baen.com . Then select "Baen's Bar." If it's your first visit, you will need to register. (That's quick and easy.) Once you're in the Bar, the three conferences devoted to the 1632 universe are "1632 Slush," "1632 Slush Comments," and "1632 Tech Manual." You should post your sketch, outline or story in "1632 Slush." Any discussion of it should take place in "1632 Slush Comments." The "1632 Tech Manual" is for any general discussion not specifically related to a specific story.

2) Your story/article will then be subjected to discussion and commentary by participants in the 1632 discussion. In essence, it will get chewed on by what amounts to a very large, virtual writers' group.

You do*not* need to wait until you've finished the story to start posting it in "1632 Slush." In fact, it's a good idea not to wait, because you will often find that problems can be spotted early in the game, before you've put all the work into completing the piece.

3) While this is happening, the assistant editor of the*Grantville Gazette,* Paula Goodlett, will be keeping an eye on the discussion. She will alert me whenever a story or article seems to be gaining general approval from the participants in the discussion. There's also an editorial board to which Paula and I belong, which does much the same thing. The other members of the board are Karen Bergstralh, Rick Boatright, and Laura Runkle. In addition, authors who publish regularly in the 1632 setting participate on the board as*ex officio* members. My point is that plenty of people will be looking over the various stories being submitted, so you needn't worry that your story will just get lost in the shuffle.

4) At that point—and*only* at that point—do I take a look at a story or article.

I insist that people follow this procedure, for two reasons:

First, as I said, I'm very busy and I just don't have time to read everything submitted until I have some reason to think it's gotten past a certain preliminary screening.

Secondly, and even more importantly, the setting and "established canon" in this series is quite extensive by now. If anyone tries to write a story without first taking the time to become familiar with the setting, they will almost invariably write something which—even if it's otherwise well written—I simply can't accept.

In short, the procedure outlined above will save*you* a lot of wasted time and effort also.

One point in particular: I have gotten extremely hardnosed about the way in which people use American characters in their stories (so-called "up-timers"). That's because I began discovering that my small and realistically portrayed coal mining town of 3500 people was being willy-nilly transformed into a "town" with a population of something like 20,000 people—half of whom were Navy SEALs who just happened to be in town at the Ring of Fire, half of whom were rocket scientists (ibid), half of whom were brain surgeons (ibid), half of whom had a personal library the size of the Library of Congress, half of whom . . .

Not to mention the F-16s which "just happened" to be flying through the area, the Army convoys (ibid), the trains full of vital industrial supplies (ibid), the FBI agents in hot pursuit of master criminals (ibid), the . . .

NOT A CHANCE. If you want to use an up-time character, you*must* use one of the "authorized" characters. Those are the characters created by Virginia DeMarce using genealogical software and embodied in what is called "the grid."

You can obtain a copy of the grid from the web site which collects and presents the by-now voluminous material concerning the series,www.1632.org . Look on the right for the link to "Virginia's Up-timer Grid." While you're at it, you should also look further down at the links under the title "Authors' Manual."

You will be paid for any story or factual article which is published. The rates that I can afford for the magazine at the moment fall into the category of "semi-pro." I hope to be able to raise those rates in the future to make them fall clearly within professional rates, but . . . That will obviously depend on whether the magazine starts selling enough copies to generate the needed income. In the meantime, the rates and terms which I can offer are posted below in the standard letter of agreement accepted by all the contributors to this issue.

Standard letter of agreement

Below are the terms for the purchase of a story or factual article (hereafter "the work") to be included in an issue of the online magazine*Grantville Gazette,* edited by Eric Flint and published by Baen Books.

Payment will be sent upon acceptance of the work at the following rates:

1) a rate of 2.5 cents per word for any story or article up to 15,000 words;

2) a rate of 2 cents a word for any story or article after 15,000 words but before 30,000 words;

3) a rate of 1.5 cents a word for any story or article after 30,000 words.

The rates are cumulative, not retroactive to the beginning of the story or article. (E.g., a story 40,000 words long would earn the higher rates for the first 30,000 words.) Word counts will be rounded to the nearest hundred and calculated by Word for Windows XP.

In the event a story has a payment that exceeds $200, the money will be paid in two installments: half on acceptance, and the remaining half two months after publication of the story.

You agree to sell exclusive first world rights for the story, including exclusive first electronic rights for five years following publication, and subsequent nonexclusive world rights. Should Baen Books select your story for a paper edition, you will not receive a second advance but will be paid whatever the differential might be between what you originally received and the advance for different length stories established for the paper edition. You will also be entitled to a proportionate share of any royalties earned by the authors of a paper edition. If the work is reissued in a paper edition, then the standard reversion rights as stipulated in the Baen contract would supercede the reversion rights contained here.

Eric Flint retains the rights to the 1632 universe setting, as well as the characters in it, so you will need to obtain his permission if you wish to publish the story or use the setting and characters through anyone other than Baen Books even after the rights have reverted to you. You, the author, will retain copyright and all other rights except as listed above. Baen will copyright the story on first publication.

You warrant and represent that you have the right to grant the rights above; that these rights are free and clear; that your story will not violate any copyright or any other right of a third party, nor be contrary to law. You agree to indemnify Baen for any loss, damage, or expense arising out of any claim inconsistent with any of the above warranties and representations.

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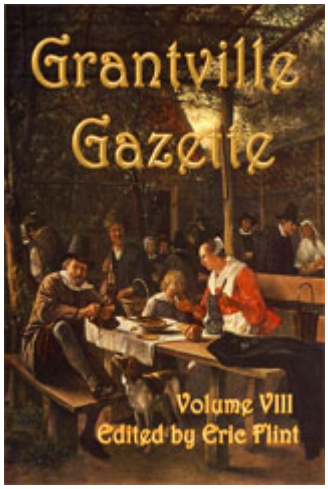

Assistant Editor's Preface

And here we go—on time, just as promised. Grantville Gazette Volume 8 is ready for our discerning readers.

Just what is going on in Europe these days of 1632 – 1635 or thereabouts?

Did you ever wonder where some of the old pick-up lines came from? Iver P. Cooper gives us a possible answer for one of them in "The Painter's Gambit." Tsk, tsk. Artists and their etchings . . .

Industrial magnate Louis De Geer finally gives in to curiosity and comes to visit in Kim Mackey's "Essen Steel Chronicles, Part 2." Of course, he does have his own motives. Not that Josh and Colette don't have theirs, for that matter.

Terry Howard's cracker barrel philosopher, Jimmy Dick Shaver, is at it again in "Not a Princess Bride," and you do have to wonder "who was that up-timer" after you read Barry C. Swift's "Got My Buck."

Virginia DeMarce shows us just how complicated things could be in "Prince and Abbot." Fulda will never be the same after that election. Anette Pedersen addresses "A Question of Faith." Has Father Johannes struggled with his conscience for long enough? That's a question only he can answer.

Richard Evans gives us a slightly darker view of things in "Capacity for Harm," but Russ Rittgers' Chad Jenkins accomplishes a parent's perfect revenge in "Three Innocuous Words."

The rest of the world isn't sleeping during all the changes that are taking place in Germany. Gorg Huff and I figure that something must be going on in Russia, so we told you about it in "Butterflies in the Kremlin," part one of a series. As well, a repressed sect of Christianity finds a new home in Jay Robison's "The Sons of St. John."

Faith in God comes in many flavors. Douglas W. Jones gives us another view of it in "Joseph Hanauer: Into the Very Pit of Hell."

Karen Bergstralh's new-made master blacksmith continues to build his business in "Rolling On," while Dr. Phil falls in love—wonder of wonders, not with himself—in Kerryn Offord's "Dr. Phil's Distraction." And Chris Racciato proves that there's not a new con game under the sun with "Dear Sir."

Our non-fiction in this volume covers a lot of territory, as usual. From "New France in 1634 and the Fate of North America" by Michael Varhola, to the real reason air conditioning was developed in Mark Huston's "Refrigeration and the 1632 World: Opportunities and Challenges." Last, but certainly not least, considering the reception from the Barflies, Iver P. Cooper gives us the rundown on the magic metal aluminum in "Aluminum: Will 'O the Wisp."

Fire up the coffee pot, stock up on the chocolate and settle in for a nice, long read. We hope you'll enjoy our latest offerings.

Paula Goodlett
June, 2006

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Fiction:

Joseph Hanauer: Into the Very Pit of Hell

By Douglas W. Jones

Fifteenth of Iyyar, 5391 (May 17, 1631)

The congregation for the Saturday evening service at the close of the Sabbath filled the small synagogue in Hammelberg. Several out-of-town visitors brought the number well above the minimum of ten men required for the service. It was not a congregation that placed great value on formality or decorum. Each man prayed at his own pace through many of the prayers, and at times, there were quiet conversations while slower members of the congregation caught up with the rest.

After the braided candle had been extinguished and the last words of the hymn to Elijah the Prophet had faded, the congregation began to drift apart. Several small groups remained in the*schul* talking quietly as others left.

"Reb Yakov," a large man said. "I enjoyed your comments on the Torah portion this afternoon. You say you're from Hanau? What brings you to Hammelberg?"

"Who are you again?" the rabbi asked, looking up.

"Yitzach ben Chiam, from Kissingen," the man said. His accent held almost no hint of*Judische Deutsch* in it, less even than in the speech of the Jews of Hammelberg. If they had not been speaking in a synagogue, the rabbi and his companions would have taken him for a Christian.

"We're on our way to Poland," the rabbi said.

"Poland? It's a long way to Poland, and with the war, is this a safe route?"

"Is anything safe for a Jew in this world? The route up the Fränkische Saale valley is direct enough. Moische Frankfurter here has traveled this way to the Hanover fair twice. He knows the road and he has his father's notes from many more trips. So far, they've proven to be pretty good."

"But the war?"

"Now that King Gustav has left Poland, the war in that land is over, so Polish life is getting better. It doesn't take much to make it better than life in this war-torn land. For the moment, the war is all in the north, and without wishing ill on those living there, we hope it stays that way. Tilly and Pappenheim are tied up at Magdeburg, and that should keep King Gustav busy and out of the way. After we cross the Thüringer Wald, we'll stay well south of the armies."

The conversation continued until only the out-of-town guests remained. Yossie listened quietly; Yakov handled the questions. He and his two companions had faced similar questions a week previously, in the Jewish quarter of Aschaffenberg. That had been their first Sabbath away from home.

After a short while, the two women in the group rejoined their companions. They had spent the Sabbath day visiting with the Jewish women of the town. The synagogue served many purposes. It was a house of prayer and a school for the Jewish children of Hammelberg and it housed the community ovens. The bath house was attached and when there were out-of-town Jewish visitors it served as a makeshift inn.

"It must take a fair amount of silver to travel all the way to Poland," Yitzach said.

"That's why we're traveling with an experienced merchant," the rabbi said. "Reb Moische, why don't you explain how we can afford this trip."

"If we wanted to travel quickly, like a court Jew," Moische said, "we'd hire a coach and trade horses at every town. Where the roads are good, we could make a hundred miles in a day covering the entire distance at a trot. At that speed, we could go to Poland and back in a few weeks.

"If we had expensive trade goods, silk, spices, fine pottery from Delft, we'd hire teamsters from Frammersbach to drive our freight wagons, and we might make thirty miles a day. Before this twice cursed war began, my father could afford that."

Yitzach chuckled. "Is it news that the war has ruined trade?"

"No," Moische answered, "but there are still goods that you can buy low here and sell high there. It does slow the trip to a crawl, stopping at every village to buy and sell, but if you have a horse and a cart and you know the market, well, Yossie, you can make a profit. What have you bought and sold?"

Yossie wondered why Yitzach was so curious about their business. "Not much, but I didn't start with much either."

The merchant grinned. "Didn't start with much. Just books. Now what have you got?"

Yossie had enjoyed the way Moische had parried Yitzach's questions, giving almost no information in his answers. Now, he was puzzled to find that he was being asked to say more. After a Sabbath day spent in study together, they were not total strangers, so he only hesitated briefly before answering. "Well, when we left Hanau, Rav Yankel and I had a chest of copies of the Hanau Prayerbook, unbound, and a few boxes of other books, mostly Jewish but some Christian."

Yitzach ben Chiam looked startled. "So many books? What did you do, rob a Yeshivah or a print shop?"

Yossie chuckled. "We didn't rob it. Rav Yankel and I used to work at Hans Jacob Hene's printing press in Hanau. Master Hene died last year, may his memory be a blessing, and the new owner, well, he doesn't deal in Jewish books the way Master Hene did, so there was little reason for either the books or us to stay."

"So you are paying for a trip with books?"

"We sell and trade. There are forges and glassworks in the Spessart, and there is a paper mill in Lohr. We found a good market for scrap iron and rags. Now that we're in the Fränkische Saale Valley, we're trading empty wine bottles for full whenever we can. Friday, I sold some prayer books,*bentschers* , and a*Chumash* here."

"You'd better be careful which Christian books you show people in this valley," Yitzach said. "This is a Catholic valley now. If you have books of the lives of the saints, you'll do well, but if you have Lutheran or Calvinist books, be careful with them."

As the conversation wound down, the Sabbath lamp that had burned since Friday evening was extinguished. Aside from small splashes of moonlight shining through the small eastern windows, the only light came from the eternal flame over the ark holding the Torah scrolls. It was not long before the only sound in the building was the sound of gentle snores.

Sunday morning, there was work to be done. Buying and selling within the Jewish community was safe,

but it was not a day to travel. Christians didn't like to be reminded that there were Jews living among them on their holy day, so the gates to the Jewish quarter remained closed.

While the merchants traded what they could, Rabbi Yakov ben Pinchas and Yosef ben Shlomo of Hanau worked as teachers in the Hammelberg*schul* . It was familiar work for the old Rabbi. He'd taught at the*cheder* in Hanau for many years, working only part time as a typesetter and proofreader at Hans Jacob Hene's print shop. He'd also worked part time as a scribe, writing the occasional marriage contract or divorce papers, or even repairing a Torah scroll when needed.

For Yosef ben Shlomo, the day's work as a school teacher was a new experience. Yossie had been a full-time print-shop worker since his parents died. Not an apprentice, though. Jews could not take apprenticeships in any of the guild trades.

Monday, after morning prayers, Yitzach ben Chiam set off with the group of travelers toward Kissingen. To Yossie, the small horse Yitzach was riding seemed large. Certainly, it was bigger and healthier than the old horse pulling the cart he and his sister shared with the old rabbi.

"Tell me," Yitzach said. "How is it that you can buy and sell so freely? I'm a*Schutzjude* . I know the laws that limit what we can do."

"Reb Moische, that's your business," Yossie said.

The young merchant, Moische ben Avram, gave a bow from beside the horse he was leading. "At your service. I might ask how you make a living. You face the same trade restrictions as we do."

"I'm a broker, cattle, feed, wine, you name it, I connect sellers with buyers. That's basically all a protected Jew is allowed to do aside from making loans."

"So do you ever take someone's cattle, for example, and give them silver now, before you go to look for a buyer?"

"Sure. Of course, what I do is loan them the value of the cattle, and then the buyer pays back the loan, plus a bit of interest, plus a commission."

Rabbi Yakov coughed. "But of course, you never take more than one sixth of the value."

"What?" Yossie asked. He had been admiring the way Moische had turned Yitzach's question away from their business.

"One sixth. It follows from*Parshas Behar* . Come Yossie, we just read it two days ago on*Shabbos* . What the Christians call Leviticus chapter twenty-one, but I forget the verse number. It says 'And if you sell anything to your fellow or buy anything from your fellow's hand, you shall not wrong one another.'"

"I know the text, but where does it say one sixth?"

"That is the oral tradition, the Talmud."

"But it says your fellow's hand, doesn't that mean only other Jews, not the goyim?"

"Except that the goyim around here worship our God, so they aren't idolaters. They bind themselves by the laws against theft and dishonesty, so we must treat them as our fellows in business."

"A good lesson, Rabbi," Yitzach said. "Was it Rabbi Chananya who said that where words of Torah are exchanged, the divine presence is there? But for the sake of argument, since I only act as a broker, not buying or selling, it doesn't strictly apply, does it?"

"Your status as a broker is just a legal fiction to satisfy the Christian authorities," the Rabbi said. "Of course, to support that fiction, you have to give your buyer an exact accounting, so he knows exactly what fee he is paying. A successful*Shutzjude* must always charge prices that are even more fair and more honest than any Christian merchant or they will cancel your protection and send you packing."

"That puts it well," Yitzach said. "Now, though, I think I'll send myself packing. My horse and I would both rather move a bit faster than you're walking. But, why not spend the night at my place? It's just outside Kissingen. When you reach the village of Aura on the north bank of the Saale, turn north up the hill to the next crossroads, then east across the upland toward Kissingen. My house will be one of the first you come to. It is on the hill looking down on Kissingen, easy to find. But if you get lost, just ask for me by my goyische name, Isaac Kissinger."

The Fränkische Saale valley led them along a winding path to the northeast through a land of chalky hills and vineyards. When the two loaded carts turned aside at the next cluster of farmhouses in the hope of selling something, Yitzach's horse quickly passed out of sight around the next bend.

The travelers slowed in every village they passed to see if they could find someone who wanted empty wine bottles or some of the ironwork Moische Frankfurter had picked up at a forge in the Spessart. They had pruning hook blades, sickle blades, hoe blades and shovel blades for sale. Whenever they had earned a surplus of silver, Moische disappeared into one of the wine cellars along the way to see if he could buy bottles of wine.

Moische did not need to emphasize that it was dangerous to have too much silver. They had already been robbed once on the trip. It was a small loss because the thieves only took silver, not the books, rags or scrap iron that represented the bulk of their wealth at that time. Wine was a more dangerous cargo than rags or scrap, but a thief who could easily take all of their silver would only be able to carry a few bottles of wine.

As required by law, they were all clearly identified as Jews. The three men in the group wore Jew badges, yellow circles, on their outer cloaks. The two women wore veils that were marked with the two blue stripes reserved for the Jews over their hair combs.

For Yossie and his sister, approaching each cluster of houses was an uncomfortable experience, even after two weeks of travel. They had always lived in the large Jewish communities of Frankfurt am Main and Hanau, while the others had much more experience in the larger world. Yossie's experience with non-Jews was limited to those who routinely dealt with Jews. Here in the Fränkische Saale valley, Jews were rare. Sometimes when they approached a village, children announced their arrival as if they were devils. Some of the men would cross themselves defensively after completing a trade.

Seventeenth of Iyyar, 5791 (May 19, 1631)

Monday afternoon, with the sun low behind them, the travelers turned east toward Kissingen, although the old road sign spelled it Kissick. The valley of the Fränkische Saale was spread out below them to the

right, turning north ahead of them and winding lazily away to the southwest behind them. There were vineyards on both sides of the road, but higher up the hills were woodlands. A haze of smoke rose from the valley ahead of them, marking the location of the Kissingen salt works.

"These vines aren't well kept," Moische Frankfurter said, walking beside Yossie. "And did you notice the empty houses in village we just passed?"

"The war, I suppose," Yossie said, as he led the horse pulling the rear cart.

"There hasn't been war in this valley for a decade," the young merchant said. "I suppose, though, that the taxes to pay for the war would be almost as hard on many farmers. Some of them seem to have more wine than they can sell."

"So the Christians are leaving the land, too?"

"More likely, when the families can't afford the taxes, their sons leave to take jobs as mercenaries."

"Can you two men talk about something less grim?" asked Basya, Yossie's sister. "How about a song?" she added, reaching into the back of the cart in front of her and pulling out her copy of the*Shmuelbuch* and starting to lead them in song.

"Rav Joseph said that if men sing and women respond, the law is broken," Yakov grumbled, quoting from the Talmud under his breath as he walked beside Yossie. "But if women sing and men respond, it is as if fire is sweeping a field of flax."

For the last mile into Kissingen, Basya led the travelers in verses from the epic ballad of Samuel the prophet, King Saul and King David. The subject was biblical and the dialect was Jewish, but the ballad form was as German as the countryside around them. Everyone in the group knew the melody. Only the old rabbi did not join in. Yossie kept his silence through a few verses, not wanting to offend his teacher, but when Yakov made no further comment about the evils of allowing women and men to sing together, Yossie finally joined in the song.

The house of Isaac Kissinger was easy to find. It was one of a small cluster of farmhouses on the hillside above Kissingen. All of the buildings were old, made of ancient plastered stonework below with timber, wattle and daub above.

"Welcome to Kissingen, almost," Yitzach said, greeting them from the door. "Jews aren't allowed in town after dark, so we must live outside the walls, closer to the farmers we serve. Let me help with the horses; they'll be comfortable in the field out back. We'll eat after we settle the horses. I warned my wife you were coming, so there's plenty to eat. We'll be done in time for afternoon prayers."

Yitzach's wife Chava was not as round as her husband, but she looked comfortable. He also had a daughter, Gitele, who was close to Yossie's age and who seemed to be alternately fascinated and shy in his presence.

Over the meal, as was the custom,*zmiros* took priority over conversation. Songs based on the Psalms or other biblical verses met the need for words of Torah at the table without sounding academic. Some of the tunes were very simple and repetitive, easy for the smallest child to join in, while others were complete psalms, sung like ballads. When everyone was done eating, Yitzach took out his*bentscher* and led them in the chanting the long grace after meals.

As the sun approached the horizon, the men gathered for the afternoon prayer service, abbreviated because there were only four of them, not the ten required for the full service. They finished just before the sun touched the western horizon. As soon as the sun was down, while the light was still good enough to read, they started again with the evening service.

"Praised be to the Lord, God of the universe, who has commanded us to count the days of the*Omer* ," Yitzach said, "on this, the thirty-third day of the*Omer* ."

"Amen," the other three replied, ending the service. There had been thirty-three days since the start of Passover, and until the festival of*Shauvos* , every day was to be counted.

"So," Yitzach said. "Time for a haircut, but we'll do that tomorrow. Chava, Gitele, we need to talk. Come, everyone, back to the table."

"I have a proposition for you," Yitzach said, as they sat down at the table by the light of one candle. "My son doesn't want to take up the life of a*Shutzjude* . He's a scholar at the Yeshiva of Heidingsfeld. I've married off one daughter and I think it's time for me to find someone to carry this house into the next generation. I'd like to find a husband for Gitele, and that won't be in Kissingen. Your trip to Poland has me thinking that perhaps we should join you.

"So, here is my proposition. Stay through the week, and then we'll come with you. That will give me time to transfer my protected status and will give us time to pack up what we can take with us. Waiting a bit will be worth your time because Wednesday is market day. That will give you a chance to lighten your load by getting rid of all those empty bottles before we leave the best of the Franconian vineyards."

There were several replies. "Father!" Gitele said. "Can we afford a week's delay?" Yankel asked. "Is it safe?" Gitele added. "How long have you been planning this?" Moische asked.

"There are too many Jews around Kissingen," Yitzach said. "We've known that for a while. If some of us don't leave soon, the Christians will force us out. Last winter Chava and I decided we should go, so this spring we've been watching for a group to join. Poland, Hungary, Turkey, they all look better than German lands."

"Too many Jews?" Yankel asked. "Do you have a*minyan* ?"

"No, Rav Yakov," Yitzach said, pausing to count under his breath. "There are eight over age thirteen. When I was a child, there was a minyan, but that was before the war."

"There are three of us," Yankel said. "So together, we have one extra. So long as we are here, we have enough for a Torah service."

"It's a long walk. My brother lives down by the river."

"Tell them I have a*sefir Torah* in my luggage," the old rabbi said. "We can do the full service Thursday and perhaps on*Shabbos* if the walk is not too far."

"I can't promise they'd come on Thursday," Yitzach said. "There is work to be done. If you stay through Saturday, though, they will come."

"I don't want them to come on*Shabbos* if they have to walk over two thousand cubits."

"The walk is longer," Yitzach said, "but we know our*eruv* laws. When one of us wants to visit the other on*Shabbos* , we arrange to eat a*Shabbos* meal at my cousin's place, halfway between."

"So Reb Yitz," Moische asked, once it was clear that the Rabbi was satisfied that no laws would be broken by the proposal to gather a*minyan* for*Shabbos* . "How many other groups of travelers have you spoken to?"

"There was a group of Jews out of Wertheim two weeks ago. They were traveling fast and didn't want more people. Last week another group came through. Like you, they were from Frankfurt and trying to peddle their way east. I would have been tempted to go with them if they had seemed competent. I've heard rumors of other groups but not everyone who travels up this valley stops in Kissingen to talk with me."

"Thank you for the compliment," Moische said, with a laugh.

"Don't thank me too soon," Yitzach said. "First, my wife and daughter need to be convinced that you are competent enough for us. And I suspect that we need to convince you that we are competent enough for you."

For the next hour, the travelers repeated many of the answers they had given two nights before in Hammelberg. This time, though, there were fewer evasive answers.

"My wife and I left Frankfurt Monday a week after Passover ended," Moische explained. "I'd hoped to leave the week before, the first Monday right after Passover, but that didn't work out. Instead, we left on the eighteenth day of the*Omer* . That seemed good enough, and eighteen is a lucky number."

"It took a day to pack up Reb Yankel, Yossie and Basya in Hanau, and then we spent the Sabbath of *Parshos Emor* with the Jews of Aschaffenburg. Last Monday, we set off into the Spessart. In a week, we made it to Hammelberg, buying and selling as we went.

Yitzach interrupted. "You know, Reb Moische, yesterday I asked how you could manage, buying and selling across the countryside, and we got off into matters of commercial law and legal fictions and Talmud. You never answered my question."

Moische Frankfurter answered, "A merchant can't afford to disclose the secrets of his trade."

Yossie chuckled. "He never lets us suggest a price, ever. Before we buy or sell, he always looks in his book and then tells us what offer to make, and he tells us what the final price should be. Sometimes, he's wrong, but mostly, his advice is good."

"When I'm wrong," Moische said, "It's because of the war. I've been this way twice before, to the Hannover fair and back, by way of Meiningen and Erfurt. My father did it many times. The first rule for any merchant is to constantly watch the prices of everything."

"I know that well enough," Yitzach said. "But I only need to know the prices of goods in and around Kissingen. You need to know the prices everywhere."

"We only know the prices where my father or I have been before. Of course, you have to correct for the season." He paused. "So, Reb Yitzach, if you come with us, what will you bring as trade goods?"

The answer to that question emerged after morning prayers and breakfast Tuesday, while Moische's

wife and Chava set to work cutting the men's hair. Between Passover and*Shavuos* , the thirty-third day of the*Omer* was the only day on which it was auspicious to have a haircut, so all of the men took their turn.

"So," Yitzach said, while his wife worked around his head with comb and shears. "What I propose to do is slaughter a cow and make sausage. I'll sell the meat I can't preserve and buy trade goods with the profit. There aren't more than a handful of Jews east of here. The Protestants did a good job of driving us out of Saxony back before my lifetime, so you'll want kosher meat that will keep. My sausage should keep all summer if it stays dry and out of the sun. I'll need help, though, because we'll have to keep the fire smoking, and we'll need to shave an awful lot of beef very thin.

"You're a*shochet* ?" Moische asked.

"The best in Kissingen, if you discount my brother's son Ari. He's the one I want to take over this place. I also have a cousin who is competent. We take turns buying cattle at the Neustadt market. Most of the meat we sell to Hammelberg."

"Where did you study?" Yankel asked.

"Heidingsfeld, where my son is now. When my father died, I left the yeshivah and came home to take over his business."

The cow was slaughtered that morning, and everyone was put to work, under the able direction of Yitzach and his wife. The larger butchering job, of course, was left to the*shochet* himself, but then the meat had to be salted and rinsed to get the blood out, and every bit of meat had to be stripped from the carcass excepting the hindquarters. That part would go, at a discount, to the Christian butchers in town because kosher preparation of the loins would have been too much work.

By evening, the big chimney in Yitzach's kitchen was festooned with thinly sliced beef hung from freshly cut willow twigs. Larger cuts of meat hung awaiting sale or additional work the next day. They'd stripped the derma from the intestines for use as sausage casing, and the smell of grilling liver filled the house.

Yossie was the strongest of the travelers, with years of experience doing hard physical labor at the printing press. Because of his strength, he spent a good part of the day chopping firewood from Yitzach's woodpile for the kitchen fire. The wood had to burn to charcoal on one side of the kitchen hearth, then the hot coals were swept over to the other side to provide dry heat under the meat. When the wood supply was adequate and the fire burning properly, he was put to work at the cutting block, shaving thin curls of beef. For a break in that job, he was sent to the salt works for a sack of salt. By nightfall, Yossie's arms ached as much as they had ever ached after a long press run.

Wednesday morning, Yossie was spared from more physical labor. The evening before, Moische and Yitzach had asked him to come with them into town to help in the marketplace. The three of them woke up before sunrise, said their morning prayers quickly and ate a cold crust for breakfast before setting out.

Market day in Kissingen was busy. At the town gates, farm carts vied in friendly competition with merchants. The Jews knew their place and held back, waiting their turn. Once the crowd around the gates had thinned, they paid their Jew tax to the guard at the gates, as required by law, and then entered the town. In Kissingen, Jews were permitted to buy and sell in the marketplace, but the protocol at the town gates guaranteed that they would always get the least desirable spaces.

Once the three of them had staked out their spot, Isaac took his cart to the Christian butchers so he

could sell the non-kosher cuts of meat while Yossie and Moische arranged what they had to sell. They had straw-packed baskets of the flat bottles used for Franconian wines, window-glass, ironwork, books and paper.

"Today," Moische said, "make all sales in silver. Here's the price list, what you should open the haggling with, what they should offer, and where you should go for the final price. I want to spy out the market to see if I am right on the prices, so for now, you run things."

Yossie felt a bit abandoned. Then he straightened his shoulders. He'd been the buyer at other markets, after all. Not just for himself, either. He'd done it for Master Hene's print shop and he knew how things worked. Buying and selling door-to-door the last two weeks helped, but he'd never been in charge of a market stall before. It certainly didn't help that he was a complete stranger in Kissingen.

His first few sales were small; bottles by the twos and threes, a shovel blade, a pruning hook, and two sheets of paper. Then, to Yossie's surprise, a man came to buy four full baskets of bottles.

"So, Jew, where are they from?" the man asked, pulling one of the flat green bottles from its straw packing and looking at it with care.

"Paul Fleckenstein's glassworks in Heigenbrucken, on the Lohrbach," Yossie answered. He remembered being fascinated as he watched the glassblower manipulating the red hot glass. That such green glass could be made by melting the red Spessart sandstone was almost magical.

Only after inspecting several more bottles with equal care did the man begin to dicker seriously. The man knew what he was doing, but with Moische's price recommendations in mind, Yossie was prepared.

Moische came back shortly after that to amend the price list. "You need to read the sales," Moische said, after Yossie described what he'd sold. "If you're buying wine from the vineyard next door, or if you make it for your own use, you reuse bottles. Break a barrel of wine into bottles, drink them up, and then refill the bottles when you break open the next barrel. If you sell just one or two bottles, you're probably just replacing broken glass.

"But think. If you're selling wine for shipment to far away places, you buy enough empty bottles to hold a whole barrel of wine and the empties never come back. Your last sale means that someone in town is still shipping wine to someplace far away. The local wine is good enough to grace a noble's table, which is why we are buying as much as we can with our profits."

"You've been tasting Christian wine?" Yossie asked, mildly taken aback.

"Of course. How else would I know its value in trade?" Moische said. "We're forbidden to drink the wine of idolaters, but I don't drink, just taste. It is very good wine, but then, Reb Yitzach's wine is no worse, and he has promised to bring a bit of that along with us."

Soon after Moische left for another round of spying on the marketplace, Yossie found himself facing a Catholic priest. Christian clergymen had always made him uncomfortable.

"My son," the priest said, with an alarming smile that might have been intended to be friendly. "I hear you have books for sale."

"A few, Father," Yossie said, in his best German. He knew that for a Jew to show insufficient respect could lead to trouble. He was more alarmed to be addressed as "my son" than to be addressed merely as

"Jew."

Yossie went around the back of the cart to show the books. Moische had shifted their goods around carefully so that the Jewish and Protestant books were all on the cart they had left behind at Yitzach's house.

"Have you read this?" the priest asked, holding up a book.

Yossie leaned over to look. It was a volume of St. Thomas Aquinas. "My Latin is poor, Father, but I like what I know of the Saint's logic."

"If your Latin were better," the priest said, "you would find that the logic of Aquinas is compelling. The only way to salvation is through our Lord and savior, Jesus Christ."

Yossie groaned inwardly, fearing that the conversation was becoming a trap. "I have no desire to engage in a religious disputation, Father. All I want to do is find a good home for these fine books."

"Where did you get them?" the priest asked.

"They are from the estate of Master Hans Hene of Hanau, may his memory be a blessing."

The priest looked startled. "The printer? I had not heard that he died! May his soul rest in peace. And you, a Jew, why do you bless his memory?"

"Should I curse a man simply because he was not of my religion?" Yossie asked. "I worked in Master Hene's print shop for many years."

In the end, the encounter with the priest turned out better than Yossie had feared. He even sold the volume of Aquinas and a supply of paper to the priest. Not long after that, he sold all that was left of the green-tinted window glass they'd purchased in the Spessart.

Moische, meanwhile, had been searching out what they should buy with their profits. It was no surprise to Yossie that this included more wine, but Moische also bought several empty barrels.

"Why these?" Yossie asked, grimacing after taking a sniff at one of the bung holes. The strong vinegar smell made it clear that that they were old wine barrels.

"Vinegar prevents vermin," Moische said. "These should sell well after we leave the vineyards."

Twenty-first of Iyyar, 5391 (May 23, 1631)

By the week's end, all of the travelers were sick of the sight and smell of beef in all of its forms. They had dealt with everything from raw beef, dried strips of beef, cooked beef, suet, and, most of all, sausage.

Friday afternoon, in addition to keeping a charcoal fire going under the hanging meat, they began to heat kettles of water to be added to the bath. As the Sabbath drew closer on Friday afternoon, each of them left work in turn to bathe and change into their best clothes. The meat was prepared to the point that

what work remained could wait for Sunday. What the sausages needed most was to hang in the chimney over the banked fire for as long as possible.

Yossie had never encountered a private bath before. In Frankfurt and Hanau, and even in Hammelberg, the bathhouses had been communal affairs. The structure was not as old as the house, but it had obviously been there for generations. The masonry lining was sound but undecorated, and the room was plain. The bath met the letter of the law, being dug into the ground and open to the sky. As with every other bath he had used, the opening to the sky was a narrow chimney that ended just above the water in one corner. Anything more would have let in far too much cold air in the winter.

Yossie washed himself using a clean rag and a pot of warm water so as not to pollute the bath water with dirt when he finally immersed himself. The five pots of boiling water they had added to the bath had not warmed it enough that he wanted to spend much time there, but that was not the point. The point was to make a clear separation between the week past and the Sabbath to come, a spiritual cleansing.

Once he was dry and dressed, Yossie helped Yakov bring the case holding the old rabbi's Torah scroll in from their cart. The case was large and heavy enough that it took two men to carry it comfortably. It was not ornate, but nonetheless its solid construction signaled that it held something precious. The scroll inside was the most central symbol of Judaism, but it was also precious because of the labor it represented. The many sheets of parchment sewn into the scroll had all been specially prepared, as had the ink. Yakov himself had written every letter in the scroll, using exactly the letter forms required by tradition.

Yitzach led the evening service welcoming the Sabbath, as was his right as master of the house, but he also made a point of involving the others. Of the eleven men that made up their congregation, three were still young, one not much over thirteen, and Yossie enjoyed watching their response when they were asked to lead some of the simpler prayers.

After the evening*kiddush* over bread and wine had been said, their guests left for their Sabbath dinners. As promised, Yitzach's brother and his two nephews left with his cousin. As the men left, the women rejoined the group and Yankel asked a question that was also on Yossie's mind.

"Reb Yitzach, you did not begin your service with the*Kaballos Shabbos* psalms."

"No," Yitzach said, "and neither did my father, nor his father, nor his. Welcoming*Shabbos* with psalms is a beautiful innovation, but what's wrong with the order of the traditional service?"

"Saying the*Kaballos Shabbos* psalms helps to put you in the right frame of mind for the service," Yankel said. "It makes your prayers more effective."

Yitzach shook his head. "That would imply that our reward is not for carrying out the six hundred and thirteen commandments in the Torah. That our reward is not for prayer, repentance and doing justice, but for being in the right frame of mind. That sounds like something a Lutheran would say; that we are saved by our faith, not by what we do."

So began an argument that would relieve the boredom of many long hours in the days to come. On one side were the pietist innovations of the Kaballah, while on the other was the traditional Jewish emphasis on obeying the commandments.

To Yossie, who had grown up since the time that kabalist thought had swept through the urban centers of Jewish Europe, the debate was an eye opener. For him, the*Kaballos Shabbos* psalms and the hymn

welcoming the Sabbath bride were simply the way the Sabbath evening service had always begun, not a statement of a new radical theology.

The next morning, Yitzach's brother and nephews arrived with a disturbing story that drove all thought of theological controversy aside.

"We were on our way home last night after dinner," his nephew Ari said, while they waited for the rest of their small congregation to arrive. "As we passed the crossroads tavern, a farmer came out and called out to us. He sounded like he'd had too much to drink. 'Hey Jews,' he said, 'have you heard the news from Magdeburg? The siege is over. They set fire to the town.' He said he'd heard the story from a post rider."

To the travelers this was an alarming rumor, although the fact that it had come from a drunkard added an element of doubt. They had been relying on the siege to keep the armies tied up in the north, out of their proposed path. It was the Sabbath, though, so until sunset, their first order of business was prayer and study. As soon as they had ten assembled, they began the Sabbath morning service.

Their makeshift synagogue centered on the table where they had eaten dinner the night before. Now, it was covered with a clean cloth to serve as the reading table. The case holding Yankel's Torah scroll was set on end on a sideboard against the eastern wall, marking the direction they were to face while praying.

For an hour, they read the Psalms, blessings and prayers of the morning service. They wore their fringed prayer shawls as hoods over their heads as they swayed with the rhythm of prayer. Yitzach's voice was very good. As he had the evening before, he made room in the service for the younger men to help lead parts of the service.

The Torah portion was*Parshas Bechukosai* , the end of the book of Leviticus. There had not been a full Sabbath service in Kissingen for many months, and the blessings and curses of chapter twenty-six had not been chanted in Kissingen for many years.

As Yossie listened to Yankel chant the ancient curses that were promised if Israel failed to obey the commandments, he wondered about Magdeburg. What must that town have done to bring on the horrors that were rumored to have come? He'd been very young when Wallenstein's army had come through the lower Main valley. The army had ensured the restoration of the Jewish community of Frankfurt, but they had created hardship for the entire region. His parents had died that winter, and his only memories from that time were of overwhelming loss and hunger.

Sunday was another day of hard work for everyone. Yitzach and his family were busy at work packing their own belongings for the trip. Moische and Yitzach had purchased quite a bit of wine with their earnings from the market, and all of the bottles needed to be very carefully packed into baskets with straw.

While the others packed, Yossie was put back to work maintaining the fires to smoke and dry their newly made sausages. When he found that they were low on firewood, he was surprised that Yitzach simply handed him a wood collecting basket and pointed him up the hill at the woodlands above.

"But Reb Yitzach," he asked, "is it safe working in public on the Christian Sabbath?" He had never before been outside of the walled Jewish quarter of a town on a Sunday.

"Close to home, yes," Yitzach answered. "My family has lived in this house since the Jews were expelled from Kissingen long before my time. Since I am a cottager here, so long as I pay my*Shutzgeld* , I have the right to gather wood up there. My neighbors all know you are with me, so go, before the fires burn

too low. But do not cut wood, my rights extend only to dead wood that is on the ground or that you can break from trees with your hands."

So, on a beautiful May Sunday, Yossie found himself up in the hills to the northwest of Yitzach's house gathering firewood. The view to the east out over Kissingen was quite beautiful, and even the sound was beautiful. He could hear the faint sounds of Christian hymns from the nearest village church, and later, the sounds of church bells from the big church in Kissingen itself. It seemed impossible that the such a day could be contained in the same world that contained the horrors that were rumored to have occurred in Magdeberg.

Yossie walked the woods with his eyes on the ground and tree trunks for the wood that was needed. Only when he stopped to adjust the shoulder straps of the wood basket did he take the time to admire the view. There was no smoke from the salt works because it was Sunday so the view to the east was clearer than it had been all week. The crags of old fortifications on the hilltops east of Kissingen held his gaze. He guessed that some of those ruins dated back to before the first Crusade, back to the time when Jewish life in German lands had been as safe and peaceful as the scene before him.

It was perhaps the third time he stopped that he saw a very strange thing. The eastern sky filled with light, so bright that the whole world seemed dark in its aftermath. Fortunately the flash was too brief to injure his eyes, but it left an afterimage that Yossie could study. A half circle of purple showed against his eyelids every time he blinked during the next minute or so, as if he had stared for too long at sun as it rose over the eastern horizon. Whatever it was, it had been larger looking than the sun. Where the sun wasn't even the width of one finger at arm's length, the half circle Yossie saw after every blink was as wide as three fingers side by side.

By the time Yossie had carried his load of sticks down to the cluster of houses where Yitzach lived, what he had seen seemed unimportant. Once the afterimage had faded from his vision, the day went on as before, just as beautiful and with just as much work remaining to be done. The hills still rose above the valley of the Fränkische Saale, and the old ruins were unchanged.

Monday morning, Yitzach's nephew Ari arrived in time for morning prayers, along with his young wife Rivke. Yitzach's wagon and the two carts were already loaded, so all that remained to be done after breakfast was to give Ari the big iron key to the house and hitch up the horses.

"Before you go," Ari said, "you need to hear what I heard this morning. Rivke and I stopped by the town gate on our way over and asked if there was news. There is, and it might matter to you. Magdeberg has indeed fallen, that was not just drunken babble. Last Tuesday, General Tilly's troops set fire to the town."

"Blessed be the righteous judge," Yakov said.

"Amen," Yossie said, a bit surprised.

Ari continued. "With the town burning, the armies will have to move if they are to eat. Be careful what road you take, Uncle Yitz."

"We will," Yitzach said.

"Don't go to Meningen if there is even a rumor that the armies are turning south," Ari said. "Go via Prague instead of Leipzig."

As they set off on the road north along the Fränkische Saale, Yossie continued to mull over the news of

the sack of Magdeburg.

"Rav Yakov," he asked, as he and the old rabbi walked alongside their horse, "Why did you say 'Blessed be the righteous judge' about Magdeburg?"

"Because, Yossie, that is what you should say when you hear that someone has died."

"But we don't know anyone who died."

"If they ended the siege by burning the town, tens, hundreds, perhaps thousands died," the old rabbi said, in a sad voice. "You know they are dead, burned to nothing but smoke, and every one of them a divine self portrait, made in His own image, whether they are Lutheran or Catholic or Jewish."

Yossie listened to the quiet clop of the old horse's hooves on the earth and grass of the roadway while he thought. There was little reason for a Jew to sympathize with Lutherans, particularly in Saxony. The Lutherans there had been particularly harsh ever since Luther had penned his diatribe against the Jews. All of that had been generations ago, but it was still fresh in the memory of the Jewish community. Even so, Yossie could not see the burning of Magdeburg as just retribution for the evil that Martin Luther had done.

The fact that the sack had occurred on the thirty-third day of the*Omer* only added to his confusion. By tradition, that day was a day of release from mourning for the destruction of the Temple in Jerusalem. What good purpose could be served by mass murder on that date? Yossie had listened to the chanting of the Book of Lamentations every summer on the ninth of the month of*Av* . With his childhood memories of the hardships of the war, he could easily connect the text of Lamentations to the experience of the doomed at Magdeberg.

Twenty-fifth of Iyyar, 5391 (May 27, 1631)

They heard more news of Magdeburg Tuesday morning as they got ready to leave Neustadt. Yitzach knew the innkeeper there, and he came out to say goodbye to them while they were hitching up the horses.

"Isaac," he said. "I will miss doing business with you."

"You will see plenty of my nephew Leow," Yitzach said, as he checked the attachment of the harnesses to the whiffletree of his wagon. "I put my house and business in his hands. He will come to the Neustadt cattle market as often as I did. Call him Ari and he will know that I trust you."

"Is Ari his secret Jew name?" the innkeeper asked.

"Not a secret," Yitzach said, with a chuckle. "But it means the same as Leow in the language of Israel. Come, we must be off."

"Before you go," the innkeeper said. "Did you hear about Magdeburg?"

"Terrible," Yitzach said. "Blessed be the righteous judge, but I cannot see any justice in the news I have heard."

The innkeeper shook his head sadly. "Indeed. But had you heard that General Pappenheim has pulled his troops south, and that General Tilly's army is spreading south over Saxony to feed itself. Be careful which way you go on the way east!"

"And I hope the armies stay far from this valley," Yitzach said, in parting. "May he who blessed Abraham, Isaac and Jacob bless all those who care for the wayfarers of the world."

Despite the news, none of the travelers suggested turning back. They had little choice but to continue north out of Neustadt. It was possible that Yitzach might have been able to resume his old place in Kissingen, but the others had no home to return to. None of the Jewish communities they knew of to the south or west were prosperous enough to provide more than temporary refuge. Yossie knew that if he and his sister were to return to Hanau, they would be welcome only until they had spent the last of their silver. They were better off as homeless peddlers, but only so long as they could stay away from the war.

Two miles north out of Neustadt, there was a fork in the road. To the north was the road they had intended to follow, the road to Meiningen, Suhl, Erfurt, Weimar and Leipzig. This was the road Moische had been on before, but with the news from the north, it no longer seemed a prudent path.

"We should turn east here," Yitzach said, after the two carts had pulled up to his wagon at the fork.

"Reb Yitzach," Moische said. "I have never been that way."

"Which is safer?" Basya asked. "Would you rather follow a familiar road toward armies locked in battle or a new road that may miss them?"

"It is not entirely a new road," Yitzach said. "I was as far as Hildburghausen once. The road follows the Saale to Königshofen then goes overland. Hildburghausen is a town of tailors and there is one last Jew there."

"How far?" Yossie asked.

"A day's ride on a good horse," Yitzach answered. "At the rate we are going, stopping at every village to buy and sell, we will be there by the Sabbath."

Basya gave a nervous chuckle.

"What's the joke?" Moische asked.

"It will be*Shabbos Parshas Bemidbar* . The Torah portion begins 'In the wilderness,' and that is where we will be going once we leave the last Jewish house in the land."

Yitzach chuckled. "We aren't already in the wilderness? In any case, we won't have a minyan there unless there is a miracle. You'll have to wait a year to hear the start of the Book of Numbers chanted properly. Rav Yankel, what do you think?"

The old rabbi had listened without comment up to that point. Now he sighed. "God seems to have offered us little choice in this matter. Let us visit this town of tailors."

"Reb Yitzach," Moische asked, after they started on the road east. "What should we buy, what should we sell?"

For the next few miles, that topic consumed the men while they left the women to lead the horses. Yitzach explained that the lands they were passing into were croplands, but that after they reached Hildburghausen, the land would change. The Thüringerwald began there, a region like the Spessart where the economy was dominated by woodsmen, charcoal burners, miners and smiths.

"There is another thing," Yitzach said. "We will leave Catholic Franconia when the hills of the Thüringerwald come in view. You'll be able to sell those Protestant books of yours again."

With each little farm village they visited, Yossie noticed something else. Despite their Jew badges, despite the clear proclamation of status in the women's blue striped scarves and the rectangular combs that supported them, more and more of the people they met did not recognize them as Jews.

They were just strangers to many of the farmers, just refugees like so many others who the war had uprooted. Their*Judische Deutsch* accents no longer marked them as Jews, but only as being from far away.

Yossie found that there was an unexpected benefit of traveling with Yitzach and his family, the food. Moische's wife Frumah was not a very good cook, so Yossie's sister Basya had had done most of the cooking on the way to Kissingen. She was a competent camp cook, but she was not very creative. Yitzach's wife Chava had quickly taken charge as they traveled onward, and the result was rewarding.

That night, for example, as they camped in a fallow field with the permission of the local village, Chava made bread. She had mixed up a batch of dough in the morning, so that it was ready for baking by nightfall. Of course, they had no access to a kosher oven, but Chava twisted the dough around green willow twigs so they could toast individual servings of bread over their fire.

While the women bustled about their campsite making dinner, the men took care of the horses and then took out their prayer books for the afternoon and evening prayers. Without the*minyan* of ten men required for the full service, each prayed at his own pace. To keep the commandment to love the Lord with all their strength as well as with all their heart and all their spirit, they swayed to the rhythm of their words.

All of the men prayed aloud, mostly in an undertone, but whenever one paused in his prayer and heard the other say one of the prescribed blessings, he would respond with an amen. So it was that Yossie, who finished his prayers last, was answered with two loud amens as he counted the forty-first day of the *Omer* .

After dinner, they sat around the embers of their small fire and talked before going to sleep.

"I keep hoping for more news of Magdeburg," Moische said, "but in these little farming villages, it seems that we are telling people the news as often as we are hearing anything new."

"At least there is no news of troops coming our way," Basya said.

Yossie wasn't sure that the lack of news was reassuring. They were traveling on a minor road through villages that seemed out of touch with the larger world. It seemed quite possible that an army could travel faster than rumors of its presence through such a countryside.

"We should hear news tomorrow," Yitzach said. "Either in the town of Königshofen or at the crossroads village where we cross the high road from Meiningen to Bamberg."

"Reb Yitzach, what should we buy and sell tomorrow?" Moische asked. For the next few minutes, the two of them discussed business. They concluded that disposal of the last of their wrought iron from the Spessart should be a priority, before they got too close to the forges of the Thüringerwald. They had been buying scrap iron since they left Kissingen for the same reason.

"What about the paper we bought at Lohr?" Yossie asked. "And when do we start to sell the wine we bought?"

"I think there is a paper mill east of the Thüringerwald," Moische said, "So we should try to sell the rest of the paper on this side of the hills. The wine we hold until we are over the hills. It was the common wine of farmers' tables around Kissingen, here it is still common in inns and taverns. On the other side of the Thüringerwald, this wine will be reserved for the tables of the highborn."

"But Reb Moische, what if our worst fears come true?" Basya asked. "What if the armies do come south?"

"We can hope they come to go west into the lands we have left," Moische said. "Mainz, Frankfurt, Würzburg, those are tempting targets."

"Blessed be he who protects the innocent," Yitzach said. "Wherever the armies go, they strip the land. Perhaps, to be safe, we should buy food, grain and hard cheese. If the armies go elsewhere, we'll lose little. If they come close, we'll make a profit, and if they come too close, it may save our lives."

"That suggests that we should buy quickly, before everyone hears the news," Moische said. "And it suggests that we should stop telling what news we know. When they hear, people will start hoarding, just in case the armies come here."

"A good idea, Reb Moische, but we can likely make the profit safe," Yitzach said. "There won't be many farms in the Thüringerwald, so if we find that the armies are going west, we can sell in the woods to miners and woodsmen. On the other hand, if we find that luck is against us, we should keep as much food as we can as we move east."

"Listening to you men makes me shiver," Basya said. "You make it sound like we are standing in front of a drunkard with a pistol, not knowing whether the ball will go to the left or right."

Yankel chuckled sadly. "Basya, that's exactly where we stand. Yitzach has just given us advice that is, I think, as precious as the advice Yosef gave to Pharaoh when he interpreted the dream of seven years of plenty followed by seven years of lean." The old Rabbi paused. "There is one thing, though. It would be wrong to let a man sell us his grain without letting him know the news. You must tell a man the value of his wares if he offers too low a price."

"Where does it say that in Torah?" Moische asked.

Yitzach answered, quoting Torah. "You shall not place a stumbling block before the blind."

Twenty-seventh of Iyyar, 5391 (May 29, 1631)

The travelers came in sight of Hildburghausen on Thursday afternoon as they descended into the valley of the Werra. The hills of the Thüringerwald rose to the northeast beyond the town, far higher than the rolling uplands they had crossed since leaving the valley of the Fränkische Saale.

Much of the land they had crossed had been croplands. At every stop, they had purchased whatever grain they could, until they had filled the small wine barrels Moische had bought. In a period of only two days, they had seen a noticeable rise in price as news of southward troop movements became more widely known.

"So Yossie," Yitzach asked, as the two walked beside the pair of horses pulling his wagon. "You and Rav Yankel used to work for the same printer, but there seems to be more than that between you."

Yossie nodded. "Reb Yitz, I was an orphan, and Rav Yankel was my teacher in the Hanau*Cheder* ."

"What happened to your parents?" Yitzach asked. Moische fell back to join them, leaving his wife and daughter in charge of their cart.

"We were in Frankfurt when Fettmilch drove us out. You have to ask Reb Moische about that, I was too young to remember. After we were driven out, we came to Hanau, and then war came and there were hard times. I was five, young and strong enough to survive. My folks died that winter."

"Reb Moische?" Yitzach asked.

"I was seven when Fettmilch ruined Frankfurt. We fled just ahead of the mob into the cemetery. Everyone who didn't make it there was killed. I was old enough to know the story of the Book of Esther, so I knew that when Fettmilch called himself the new Haman, he would be hanged just like Haman was in the Bible. In that, my childish faith was eventually rewarded. We had almost nothing after that, but I remember the charity of complete strangers in the days that followed. Even Christians were ashamed of what Fettmilch had started."

"It seems that we Jews are doomed never to live in one place for very long," Yitzach said.

Nobody responded, so they walked in silence beside the horses for a while, until they were on the bridge across the Werra.

"Reb Yitz," Moische said, "I didn't come back to you to relive that awful day. What I wondered is, how do we find the one Jew who you say lives here? Do we just walk up to people and ask where is the Jew?"

"That would work," Yitzach said, "but he has a name, Gutkind, I think. Was it Samuel Gutkind?"

Hildburghausen had grown too big for its walls, so they were already in the town before they reached the city gate. The guard there sent them around the street that ringed the wall, and in short order, they found their destination.

Samuel Gutkind, as it turned out, was a half burgher, entitled to live within the city but outside the walls. He was not the only Jew. He had a son, and there was an elderly couple living with him as servants. The household reminded Yossie of some of the wealthier Jewish households of Hanau, but without the students and other boarders that filled those houses to the bursting point.

Over dinner, they learned that Samuel was emphatically Samuel or even Herr Gutkind, not Reb

Schmuel. He made his living as banker to the merchants and petty nobility of the area. Techncally, he was a*Schutzjude* , but he seemed to think of himself as a minor court Jew.

They spoke at length about the news from the North. They heard that General Pappenheim had moved to Halberstadt. It was a town none of the travelers had heard of, but Samuel said that he had heard that it was in the Harz mountains. The travelers were alarmed to hear that there had been news from as far south as Erfurt and even Rudolstadt of trouble. Erfurt had been on their intended agenda only a week ago.

"So tell me," Moische said, after they had exhausted the news from the north. "Have you heard any other strange tales recently?"

"Moses, there are always strange tales," Samuel said. "What leads you to ask?"

"Wednesday noon we stopped to do business in Königshofen and we heard quite a tale. The man who told it said that he heard it here in Hildburghausen. What he told us is that the pit of Hell has opened up beside some town to the east of here."

"Schwarzburg," Yossie added. "He said that the very pit of Hell opened there on Sunday." Yossie didn't mention the flash he had seen in the east that day, but he couldn't help but wonder.

"And what did you make of the story?" Samuel asked.

"We thought little of it until evening when we heard another tale in the small crossroads village of Trappstadt, or was it Drebstadt," Moische said, and then paused. "There, we met a merchant going south from Suhl. He said he'd heard the story from the east of Suhl. What he had heard was that on Sunday, the whole world to the east exploded with a flash and a roar like cannon fire. When the noise was finished, where there had once been mountains, there were valleys and where there had once been valleys, there were now mountains."

Moische paused. "After hearing two different tales, we wonder if perhaps something has happened in the Thüringerwald. You see why we ask?"

"I do, Moses Frankfurter, I do," Samuel said. "And I can add to the tale. When I first heard about the pit of Hell opening at Schwarzburg, I thought it was nonsense, of course. But you must know something. I have occasional dealings with the Count. I know some of his men from Schleusingen."

"And?" Moische asked.

"I was in town today. I ran into a man I know, a guard. He said that they had a message from Schwarzburg. An official message, mind you, not just some rumor from an ignorant shepherd."

"So?" Moische asked, after the silence had drawn out for too long. "What did it say?"

"How do I know? Am I privy to the Count's mail? No. But the story is that the pit has swallowed the whole road from Schwarzburg to Rudolstadt, and that it is many miles around. They say that the guards at Swarzburg have sent spies into the pit, and these spies say that they have seen things there that cannot be of this world."

"So is this pit really Hell?" Gitele asked.

Yakov sighed. "These spies are supposed to have gone into the pit and then returned to tell of what they saw. Does that sound like Hell?"

"No, Rav Yankel," she said.

He nodded. "If this was the Christian Hell, I doubt their devil would have let them return. Not only that, but I doubt that the Christians are right about Hell, anyway. Whatever wonder this is, we can be sure that God made it and that, like all of the rest of creation, it contains sparks of the divine as well as any temptations or threats there may be."

Yossie expected Yitzach to object to the Kabalistic reference the old Rabbi had just made. In the last week, he had objected to most such references to what he called 'the absurd kabalistic creation myth.' He would not accept the idea that God's first attempt at creation had ended in failure, with shards of the broken divine spheres scattered through the world.

"Anyway," Samuel went on, "I think that whatever has happened and whatever threats come from this pit, it could be good for us. If the road east is cut, the garrison at Schwarzburg will have to buy supplies from this side of the Thüringerwald. That will bring good silver to the local farms. It is also good news to find that this pit, whatever it is, has blocked the most direct path from the Saxon plains."

"Reb Samuel," Moische asked. "What is good about blocking the road east? We need to go that way."

"The path we need to block is the road south," Samuel said. "There are too many stories of Catholic mercenaries coming south. There are stories of farms burned as far south as Rudolstadt and Badenburg. Where there are raids, I would expect there must be whole mercenary companies not too far behind. If you want to go east, stay well south."

Samuel Gutkind had arranged for their carts to be safely stored in the barn of a townsman who owed him silver. There were enough cats living in the barn that they didn't fear rats getting into their supplies. As a result, they slept securely that night and through the weekend, although not in great comfort. Samuel Gutkind's house had room enough for them, but only one spare bed, and that was taken by the women.

The men talked into the night Thursday after dinner. They wondered what to make of the story of the pit in the Thüringerwald, but that story was so strange that they focused most of their attention on the news of the war. The speed with which the Catholic mercenaries had come south was particularly troubling. Yossie participated in the discussion, but he found it frustrating. They needed more than rumors if they were to find any useful answers to their questions.

Friday, Basya and Gitele made a disturbing discovery about their host. The men were in town, seeing what there was to be bought and sold while they listened for news. The two girls had volunteered to help in the kitchen with the preparation of their Sabbath dinner. There, they found that their host did not keep kosher.

"What do you mean, not kosher?" Yakov asked, when the men had returned to the house to bathe and get ready to greet the Sabbath.

"His bread," Basya said. "After we braided the*challah* for*Shabbat* dinner, the cook took it to the Christian baker down the street to be baked in his oven."

The old rabbi sighed. "For a moment, I thought we were having ham for our*Shabbat* dinner, or bloodwurst, or sour cream in our chicken soup. The bread dough was kosher?"

Basya nodded.

"What about the meat?"

Gitele answered. "Rav Yakov, Saul took care of that. He killed two chickens."

"Well?" the rabbi asked. "Did he do it right? Your father is a*shochet;* you've seen it done."

"I saw no errors, but the knife he used was just a good carving knife."

"Did he check that the knife edge was perfect first, and did he make the cut in one swift and painless stroke?"

She nodded. "As nearly as I could tell."

Yitzach grumbled, "I should have volunteered my services as a*shochet* ."

The rabbi paused, thinking. "We all knew when we started this trip that it would be hard to keep all of the commandments after we left Franconia. If I were still in Hanau, I wouldn't eat such food, but we aren't in Hanau, or even Kissingen. Rabbi Hillel said we should not judge people until we have been in their place. Tractate Sanhedrin says that we hold people to a lower standard when they live in border towns where they are influenced by non-Jewish neighbors."

The rabbi paused. "Could I keep kosher this well if I lived here*bemidbar* , in the wilderness? I don't know the answer because I've never tried. In other times, I would have recommended that no Jew should willingly live in a place like this. Now, I find that I would be much worse off if there were no Jews here in Hildburghausen. In any case, it would be wrong to embarrass our host. Yitzach, before the sun sets, bring one of those excellent sausages of yours from the wagon. It will make a good cold lunch tomorrow for all of us, including our host. Bring bottles of your wine for*Kiddush* and*Havdalah* ."

Rabbi Yakov ben Pinchas of Hanau led services that Sabbath, at the invitation of Samuel Gutkind. Of course, without ten men to make a*minyan* , they had to skip some of the prayers, but the rabbi had the quotation in hand to comfort them.

"It says in the Torah that in every place where my name is mentioned, I will come and bless you," Yakov reminded them. "The Talmud tells us that Rabbi Chalafta concluded from this that when even one person studies Torah alone, the holy spirit is there."

The travelers devoted Saturday afternoon to study. They were nervous about news from the north and east, but for the duration of the Sabbath, they could escape their concerns. Tradition allowed the Sabbath to be set aside in the face of mortal danger, but only when the threat was immediate. Lacking an immediate threat, all of the travelers welcomed the opportunity to escape into study.

They had only known Yitzach for two weeks, but it was becoming clear that he and Yakov were two of a kind, despite their disagreements over almost everything having to do with the Kaballah. Yossie was fascinated by the chains of argument they wove, and he noticed Moische following the discussion with equal interest.

Their host, on the other hand, was not the studious type. While his guests sat down to an afternoon of study, he excused himself and left for a walk. Yossie was a bit surprised by that. In the towns where he

had lived, Jews and Christians never mingled on the weekend.

The freedom to walk the streets on Sunday was even more of a surprise. On Saturdays, the gates of the Hanau and Frankfurt am Main Jewish quarters had been closed by the Jews to keep out the Christians, but on Sunday, it was the Christians who had barred the gates. When Samuel invited them out Sunday afternoon, Yossie had to ask.

"Joseph," Samuel answered, using what Yossie could not help but consider his Christian name. "In the morning, when the Christians are supposed to be in their churches, I would never go out. In the afternoon, though, so long as I don't do anything they will notice as a violation of their Sabbath, there are no real problems. So come with me, gentlemen. I want you to hear with your own ears what I heard yesterday afternoon."

Samuel led the four men on a pleasant stroll around the outer reaches of the town, never leading them into the walled town proper. Their destination was an inn where the road to Schleusingen came down into the town. Yossie doubted the wisdom of entering such a place on the Christian Sabbath, but their host seemed unconcerned. In spite of that, he did urge them into a dark corner before excusing himself to go get the man he wanted them to meet.

Yossie looked around the dark room nervously while they waited. He had been in similar inns along the road from Hanau, and with very mixed results. In some, they had been rudely treated. In others, tolerated for their silver. Sometimes, the owners were friendly enough but other guests had made things difficult. The fact that they could not eat the landlord's food never helped.

"Here, friends," Samuel said, leading a small man to their table. "This is Johann. If you want to leave for the east tomorrow, you need to hear what he has to say. I suggest you buy him a good drink and make the landlord happy."

Johann, as it turned out, was a dispatch rider from Schleusingen. It also turned out that his definition of a good drink was closer to a full meal. He claimed to know every road in the region, and there was little reason to doubt his claim.

Much of Johann's story duplicated what they had already heard, but there were some new details. "We had a messenger from Schwarzburg Friday, asking about buying grain and supplies from this side of the Thüringerwald. That's why I'm here. They say that the pit that has opened blocked their normal supply route from the east, and that even if the road can be reopened, there is a new town in the pit."

"A town?" Moische asked. Yossie noticed that Moische was imitating the local accent surprisingly well. "Why is that a problem?"

"Because," Johann said, "this town is big. The garrison at Schwarzburg has sent spies into the pit, and they say that there is no way this town can feed itself. They say that there isn't enough farmland in the pit to feed the town. It is mostly hills and forests."

"Ah," Moische said, "so they will drive up the price of food all around, whether they buy or steal what they need."

"Right," Johann said. "And there are raiders in the valley of the Saale. Even if the pit had not opened, I think Schwarzburg would be buying food on this side of the hills fairly soon."

"Well," Yakov said, with a smile. "Now, at least, we have proof that it's not the pit of Hell. Even if spies

could enter Hell and return, they wouldn't find a town there."

Johann laughed. "Trust a Jew to see the logic of that. The town has a name too. They call it Grantville."

"A French name? How do you know this?" Moische asked.

"I ate with the messenger from Schwarzburg," Johann said. "He hadn't been into the pit himself, but he watched from the wall while a delegation came up out of the pit to speak with the Captain of the guard. After that, before he returned to Schleusingen, the Captain showed him a letter from inside the pit."

"And?" Moische prompted.

"For this much, you owe me another drink," Johann said, raising his empty mug with a grin.

After Johann's request had been satisfied, and after a bit of prompting, he continued his story. "What about the letter from inside the pit? I didn't see the letter myself. What I heard, though, was that it was printed like a book, not written, and that it was signed by a woman with a Jewish name."

He paused briefly, but before they could ask, he waved off their questions. "No, I didn't hear the name. Apparently it was a name the Captain of the guard at Schwarzburg knew, though. Some famous court Jew's name."

"Why are we wasting our time on this?" Moische asked, and then paused to answer his own question. "It is an amazing story, but we are trying to go to Poland. What we really need to know is, what road to the east is the safest?"

Johann paused only briefly. "You can't go through the pit, that is sure. From what I hear, it is straight down except for a path that no horse could follow, much less a cart. To go north of the pit, you would have to go north to Suhl and Badenburg, and the war threatens that route. If I were you, I'd go south. Take the road to Eisfeld, and then either continue south of the Frankenwald, or take the hill road east from Eisfeld until you meet the Saale south of Saalfeld."

"What about the mercenaries in the valley of the Saale?" Moische asked.

"Well, there perhaps, this new town of Grantville will be of some use. There are stories of skirmishes between men from Grantville and Catholic mercenaries from the north. I'm not sure that I believe the stories, but they say that armies will not pass Grantville without paying a price. Even if these are just stories, they might delay the Catholic push south, and if they are true, all the better."

Fourth of Sivan, 5391 (June 4, 1631)

"Why in heavens did you buy goats?" Basya asked shortly after they set out on Wednesday morning. She was annoyed at having to help deal with the animals again.

"We had to buy something with the profit from what we sold in Eisfeld," Moische said. "Yitzach said the goats were a good buy, and it seems that anything edible we can take east will bring a premium. Don't forget what Chava did with our first day's worth of milk last night. That was a good meal."

"I suppose it would be nice to have our own milk for*Shavuos* ," Basya said.

"What worries me is this road," Yossie said, carefully leading the horse and cart around a mud hole. "You can hardly call it a road. It's worse even than the road from Eisfeld yesterday."

At first, Yossie hadn't been happy with Moische and Yitzach about their decision to go east from Eisfeld instead of south. They had spent much of Monday discussing their options as they approached Eisfeld. Moische's notes included considerable material he and his father had gathered on the towns of the Saxon plains, but nothing that would help them on the southern route. Without good information, Moische thought that the path south of the Frankenwald would not get them to Poland by the fall. As far as they knew, that route would probably deliver them to Prague by fall. None of them knew much about Prague, but without a source of income, a winter spent in any of Europe's major Jewish ghettos could easily exhaust their resources. By noon Monday, they had all agreed to risk the route through the southern Thüringerwald and across the south edge of the Saxon plains.

The forest pressed in close on each side of the narrow road through the hills of the Thüringerwald, except where charcoal burners or woodcutters had recently been at work. The day before, as they started into the hills, they had passed a sawmill along the upper Werra, but after that, they had passed into real wilderness. There had been no sign of human activity for miles, until they came to the village of charcoal burners where they had spent the night.

"Tell us again, Reb Moische, why are we going north on a bad road, toward a place that only yesterday we were trying to avoid?" Basya asked.

"Because last night after we ate, I had a long talk with a charcoal burner. While we dickered about the price of charcoal and flour, he told me that the road east was rough. He said it was better for pack horses than wagons, worse even than this road. He also said that we'll be able to sell his charcoal at a forge we are supposed to pass fairly soon, and that the road gets better after that." Yossie had already heard this answer. He had asked much the same question in private, not wanting to alarm the others by openly challenging Moische's judgment.

"But what about this strange new town?" Basya asked. "We heard it called the pit of Hell just a few days ago, and now we're going there?"

"The charcoal burner told me that he'd heard that the road was open. Not only that, he said he'd heard that the road through Grantville is now the best road to the Saale valley."

"We should trust this man?" Basya asked.

"We will find out soon enough," Moische said, with a shrug. "The man said that the edge of the pit is less than a day's travel. If it turns out he was wrong about the road, we should be able come back to him tomorrow and tell him about it."

"Unless there are demons in the pit of Hell," Basya said, under her breath so that only Yossie could hear.

Silence fell on the group as they walked along with their horses. It was broken only by the muffled clop of hooves, the groaning of loaded wagon axles and the occasional bleat of a goat. The track wound northward through the forest for some miles, with only scattered stumps and clearings providing evidence of human presence.

Gitele finally broke the gloomy silence. "Basya, get out your*Shmuelbuch* . Let's have a song."

For the next mile, song rang out through the forest. As usual, Yakov objected under his breath, but Yossie noticed after they had been singing for a while that the old rabbi's lips were moving with the words.

They fell silent when they came in sight of a small cluster of woodsmen's cottages. Up to that point, the track they had been following ran north along a broad rounded ridge. At the little village, the road seemed to get even worse as it turned east and descended into a small valley.

They had to go carefully down the steep valley. At times, they had to walk beside the wheels of their carts, ready to grab hold of a spoke to ease the load on the horses. The brook they were following was of no account at first, but each muddy trickle they passed added to it. As the brook grew, the descent grew even steeper.

By noon, they could hear the sounds of a forge in the valley below them. The sound of the trip hammer reached them first, and then the rhythmic splash of a waterwheel grew to fill the silence between hammer blows. A shoulder of the hillside blocked their view of the forge until they were almost on it, and then they found themselves in a small village where their valley met a much larger one.

The master smith came out to deal with them while his apprentices continued at work. Yossie was drawn by the orange glow of the iron bar the apprentices were manipulating under the trip hammers. As in the smithies he had seen in the Spessart, the great shaft of the water wheel was made from a single tree trunk that extended the entire width of the building. There were cams on the shaft at many different points. Some were simple pegs set into the shaft to work small equipment while others were blocks of wood pegged and bound to the shaft. One cam worked the bellows for the forge while another cam worked the trip hammer. Two more cams were positioned under the arms of a great bellows that was directed into a large furnace. That bellows was idle, with its arms propped up so they didn't bear on their cams.

"Yossie!" Moische called. "It's time to dispose of the scrap iron."

Yossie went back to the carts to make sure they didn't sell the scraps he'd set aside.

"Explain to me again," Moische asked, "why we don't want to sell the broken knife blades?"

Yossie hesitated. "I want them. I don't think I can explain it properly, but there is something I learned to do from Master Hene that I want to try someday. To do it, I need good steel, and knife steel is good."

The smith weighed their scrap, minus Yossie's small hoard of broken blades. Once the weight was known, Moische and the smith began dickering. Yossie listened, fascinated both by the smith's accent and by the way Moische was adapting his own speech to match.

When it came time for the smith to pay for the charcoal and scrap, he turned to Moische. "There is one problem. Food is expensive, and until my son returns from Suhl, there will be no silver to spare."

Moische shrugged, "Silver attracts thieves. What can you offer in trade?"

"Wrought iron bars."

"Iron bars?" Moische asked. "Where am I going to sell iron bars? Don't you have something useful I could sell? Shovels, hoes, sewing needles?"

"I make tools for the mines up the valley to the west, nothing you could sell. But to make the tools, I have to make good iron bars first. Those, you can sell to any smith, anywhere." His expression broadened into a mild grin. "It must be easier to haul bars out of the hills than your shovels or sewing needles. Perhaps the people in this new town of Grantville will want iron bars. I hear there are great craftsmen there."

"What do you know of this Grantville?" Yitzach asked.

"Not much," the smith said, scratching his head. "They say it is a place of wonders. Two weeks ago, there was just the wild defile of the Schwarza. Then they say there was a flash, and there was a great pit with a town in the bottom. Now, just this Monday and in just one day, I hear that the people of Grantville built almost a mile of good road so that the way into the pit is open."

"Is the road open to the Saale?" Moische asked.

"So I hear," the smith answered.

"Have you heard anything about how the people of this town treat strangers passing through?"

"There are strange stories. They are said to be very polite, treating common men like princes. On the other hand, there is a story that ten of them fought a battle with a hundred of General Tilly's mercenaries and killed every one. And then there is the story that they have welcomed accursed Jews into their midst. What of this is true and what is just idle chatter I cannot say."

Yossie was still thinking about what the smith said as they forded the Schwarza. It was reassuring that there were no more rumors of Hell opening ahead of them, but even the story of the new road was alarming. Could a town possibly build a mile of mountain road in a day?

The ford across the Schwarza was well traveled, but the bank was steep enough that they had to put their shoulders to the spokes to help their horses pull their loaded carts up out of the water.

"Do you think he knew we were Jews?" Basya asked, after they had worked the last cart up onto the road along the north bank.

"I don't think so." Yossie said. "I hate to say that I prefer ignorance, but I think I prefer it to having to explain being a Jew to people who speak so casually of our damnation."

The valley of the Schwarza was deep, winding and narrow, but the bottom was flat and the road was better than anything they had seen since Eisfeld. Near each little cluster of houses, there were kitchen gardens, with spring vegetables starting to show green against the carefully tilled black soil. Most of the open land in the valley was pasture, home to cattle, sheep and goats.

The valley reminded Yossie of the valley of the Lohrbach in the Spessart, although the hills here were higher. Like the Lohrbach, this was an industrial valley. Shortly after they crossed the Schwarza, they passed a copper smelter that poured a thin stream of acrid smoke into the air above.

"Reb Moische," Yossie asked, "how do you shift your accent so readily?"

"What do you mean?"

"When you speak to people here, you speak in their accent."

"I don't really notice myself doing it. I suppose it's part of being a merchant." Moische paused, looking at the people watching them from a cluster of houses they were approaching. "Yossie, tell me what you see?"

Yossie looked. "A little village?"

"There are too many people here," Moische said. "And there were too many people in that village by the forge."

"What do you mean?" Yossie asked.

"It is like the*Judengasse* in Frankfurt," Moische said. "There, we lived four or five families in a house because the Germans made us live that way. Why are they living that way here?"

As they walked onward next to their loaded wagons, Yossie looked more carefully at the village they were passing. Indeed, it was crowded. There were women working in the kitchen gardens and men working in the pastures beyond, but there were also healthy men and women who seemed to have nothing to do.

Just beyond the village, there was another copper smelter, and then the valley turned. The view opened up to the northwest as they rounded the bend. The flat valley floor went on for about a mile, and then it was blocked by a low hill that was crowned by the black stone battlements of a castle. It could only be Schwarzburg castle.

The road rose slowly along the northwest wall of the valley to the north end of the castle. As they walked up the gentle grade, they saw that the Schwarza looped south around the other end of the castle through a narrow defile. The hills rose sharply on both sides, far higher than the castle, but above the castle itself, there was only sky.

No castle is complete without at least a small village nearby. Schwarzburg was no exception, with several houses and a tavern clustered by the ramp up to the gate. A rough road came down the hillside to the gate, and the crossroads at the gate served as a small village square.

It was only when the travelers reached the crossroads that they saw the enormity of what had happened to the east. To the north and south of Schwarzburg, the high hills of the Thüringerwald ended in mirror smooth cliffs curving gently eastward. Beyond the cliffs, the entire country changed, with hills that were both lower and rougher. Even the trees were a lighter shade of green.

Yossie stood in silence, stunned by the sight. Yakov spoke a blessing under his breath. "Praised be the Lord, God of the universe, who makes the wonders of creation."

"Amen," Yossie answered, oblivious to the guard approaching behind him.

"It's quite a sight," the guard said, startling all of them.

"Yes," Yitzach answered. Yossie found the guard's accent difficult, stronger even than the accents of the people they had spoken to at the forge.

"Sir," Moische began. "I noticed as we came down the valley that the villages we passed seem crowded.

Have people been fleeing this, this . . ." He broke off in mid sentence and waved at the strange land to the east, "from this Grantville?"

The guard looked at Moische closely. "So you have heard some of what has happened?"

"We have been hearing rumors for a week as we came east. First, they said that the pit of Hell had opened here, but I never imagined anything this big."

"I was here when it happened, "the guard said. "You would have thought it was Hell, too, with the great flash of light and the loud bang. Then, there was the roar and steam that came from the great mill down there." He paused. "You are right that there are too many people in the valley, but Grantville is not the reason. They fled up the Schwarza ahead of bands of stragglers and foragers who have come south to strip the land since the murderous business at Magdeburg. Once the pit opened, the return to the Saale valley was blocked until the road was opened. Now, some have been brave enough to return to their homes through the pit, and it seems that this town of Grantville has shown that it can offer some protection."

"So the road really is safe?" Moische asked.

"So it seems," the guard said, speaking as if he really did not believe it himself.

"By the way," Moische asked, "is it possible that the castle would need to buy flour or onions or fine wine? We have them to sell."

While Moische dealt with the guard and then with the castle steward, Yossie excused himself and walked down toward the edge of the pit.

The view was fascinating. After it looped south of the castle, the Schwarza came north and then plunged over the edge of the pit in a waterfall. Beyond the waterfall, there was a valley that was much lower, and in that valley was a strange building. It was like nothing Yossie had ever seen. It was gigantic. Made of red brick, the building had windows bigger than any cathedral window. It was surrounded by towers and secondary structures, some of brick, others made of materials that Yossie did not immediately recognize. Yossie guessed it was the great mill that the guard had mentioned, although neither noise nor steam came from it.

The raw scar of a new road wound up from the valley below to one of only two places where the hills within the wall of cliffs came up to the level of the Schwarza valley. From there, the new road continued a short distance to meet the old road down from the castle gate. The banks of the new road were a loose jumble, but the road surface itself was packed hard and scraped to perfection except where wheels and hooves had disturbed the new surface.

At the point where the new road crossed the line of the cliffs there was a little hut. Despite its strange construction, Yossie could see that it was a guard hut. He hesitated briefly and then decided to investigate. He had no reason to believe that the guard hut would be any different from the many guard posts he had passed at city gates.

A man stepped out to bar his way when he came within twenty paces of the hut. Yossie had never had a chance to look closely at different kinds of guns, but there was no doubt that the man was carrying a gun of some kind. He wasn't pointing the gun at anything as he stood there, blocking the road. In fact, his posture was not that different from the way a pikeman would have barred a city gate.

Yossie slowed, but he continued to approach the guard. It seemed plain enough that whoever had built the road had the right to collect tolls for its use. Yossie would not have been surprised if the guard were to demand payment of Jew taxes.

The man's clothing was as odd as the hut. It was cut close to the body and very well tailored. At the same time, he could see that it was worn. It seemed odd that a man who could afford such excellent tailoring would allow himself to wear clothing that was beginning to fray or, for that matter, to take a job as a guard.

"Can you read?" a second man called from inside the hut, in strongly accented German. Yossie hadn't even seen the man until he spoke.

"Yes," Yossie answered. He was puzzled both by the question and by the construction of the hut. Inside the very thin wooden planking, there was a second wall that seemed to be made of piled sacks of something.

The paper the man handed Yossie was even more remarkable. It was printed using a type font that looked like the fonts used in many books he had seen from Italy and Holland. The language was a literate German, but the spellings and wording were odd.

Welcome to Grantville, We do not pretend to understand how Grantville was transported to this time and place, but it was a shock to us. At one moment we were living in the state of West Virginia in the United States of America in the year 2000. The next moment, we found ourselves in the midst of the Thüringerwald in the year 1631. Most of us speak English, so we ask for your patience.

While we are eager to welcome visitors, we must warn you that we take the law seriously. We do not tolerate murder, theft, rape or fraud. Our ideal is swift, impartial justice, free from bribery or favoritism.

As you travel into Grantville, beware of traffic. Some of our vehicles are self propelled and very fast compared to what you are familiar with. We urge you to stay to the right side of the road so that oncoming vehicles can pass to your left.

Many of our customs may surprise you, just as many of your customs will surprise us. As we meet, expect occasional misunderstandings, and try to be tolerant. We hope that these warnings help you to enjoy your visit to Grantville.

Yossie read the strange document through again. The mixture of topics was dismaying, jumping from law to traffic to the most improbable topic of all. "The year 2000?" Yossie asked, looking up at the man who'd handed him the paper. "On the Christian calendar?"

"The year 2000 on the Christian calendar," one of the men replied, speaking in slow English. The words were similar enough to the German that Yossie could follow.

"Can you write?" the man in the hut asked, awkwardly reading the line from a piece of paper. When Yossie said yes, the man handed him a small board with a sheet of paper clipped to it, along with the strangest pen Yossie had ever seen. "Write your answers in the blank spaces after each question," he read, stumbling over some of the words, "and write as you would for a child to read."

Yossie stared briefly at the shiny silver clip that held the paper to the board and at the strange pen. The

paper had questions on it, though, and it seemed that he was required to answer them.

The idea of printing a form with blank spaces to be filled in by someone else was not entirely new to Yossie, but he had never encountered a form like this before. Names of people traveling together? Number of carts or wagons? Place of origin? Place of destination? Merchandise for sale? Do you seek refuge in Grantville?

Some of the questions were easy, others required squeezing in quite a bit in a small space. Professions of travelers? Merchant, teacher, printer, and butcher was the best short answer Yossie could give in the space available.

Yossie felt a bit foolish because his handwriting looked almost illiterate. Part of the problem was trying to write with such a strange pen, and part of it was writing while standing holding a clipboard. The real problem, though, was that he had to write his answers in the Roman alphabet, not the comfortable Hebrew alphabet that he had grown up with. As Yossie worked through the questions, he realized that he was better at setting type in Roman letters than he was at writing them out by hand.

The rest of the group arrived shortly after Yossie had handed the finished form to one of the men. For the next few minutes, he answered questions from his friends, frequently by saying that he didn't know the answer. He was so busy describing what he had learned that he hardly noticed the return of the guard who had taken the paper with all of his answers.

"Welcome to Grantville," the man said, reading awkwardly from another sheet of paper. "Please go down the road here. Drive carefully, and where there is space, keep to the right when there is traffic. A guide will meet you before you have gone far."

The next hour went by in a confusing whirlwind. The new road down into the valley was familiar in form, mere dirt, if unnaturally made and unusually smooth. The road at the bottom, though, was unfamiliar. The surface was too perfect, as if the entire road was a single smooth grey slab of stone. Their carts seemed to traverse it with no effort at all. There were so many strange things that it was only when they were well down into the valley of Grantville that Yossie noticed what the guards had not done. They had not demanded any silver, neither a toll for use of the road nor Jew taxes!

Their guide met them while they were passing the great mill. His clothing and weapons matched those of the guards at the border, but he was riding a horse. When he joined them, he nodded politely and then fell in beside the team pulling Yitzach's wagon.

The gigantic brick building of the great mill was imposing, but the strange woven wire fencing surrounding it signaled something stranger. There was also a huge pile of charcoal, if that was what it was. It was a far greater supply than could possibly be used by any forge or glassworks that Yossie had ever seen.

Beyond the mill was a small village, or at least Yossie took it to be a village. It was a cluster of long rectangular houses, some of them sitting on strange black wheels. The entire village sat on ground that looked freshly scraped, as if the village had only existed for a few days.

When they finally came to the town of Grantville, nothing about it was familiar. There was no doubt that it was a town, even though the houses were too far apart. Some houses were brick, but many were apparently built of sawn planks. All of the houses had too many windows, and many had panes of glass larger than Yossie had ever seen before. Strangest of all was the fact that there was no town wall. In fact, Yossie saw no signs of any defensive works.

As the surroundings grew progressively more alien, the horses and goats grew skittish. They shied away from the strange wheeled vehicles parked by the side of the road. Yossie guessed that the bright colors or the dazzle of light off of the highly polished surfaces was the problem. When one of the vehicles came into sight moving toward them, it came faster than a gallop yet it had no visible source of power.

Their guide held up his hand in warning, motioning them to the right side of the road as it came toward them. The vehicle slowed as it passed. As Yossie held tightly to his horse, he caught a brief glimpse at least three people through the perfect glass windows of the strange vehicle. After the vehicle had passed, Yossie found himself laughing at the encounter and at the antics of the goats.

They saw men, women and children on walkways beside the streets, but few people were actually walking in the streets. The men were mostly dressed like the men they had encountered at the guard post, but they also saw two men who looked like common soldiers. The women were a shock. To say that they were dressed scandalously would be an understatement. Some wore clothes that were the same as men's clothing, well tailored and close enough to the body to reveal every curve. Other women wore skirts or short trousers that showed entirely too much flesh. While Yossie could not help staring, he noticed that the men nearby did not seem to notice anything unusual.

Eventually, their guide dismounted and then gestured that they should follow. "Come, comen," he said, demonstrating how similar the word was in English and German.

A woman came from a nearby brick building to meet them. "Welcome to Grantville," she said, in strongly accented but fluent German. She turned to their guide and they exchanged a quick babble of words. Yossie guessed that it was English, and then she turned back to them. "Your wagons will be safe," she said. "The animals are welcome to eat the grass. Come in please."

She led them through a door that was made from a single perfect pane of glass. Next to that was a window that was made of an even larger pane. Just those two panes were worth a king's ransom but the room inside was obviously not a center of wealth. The table around which they were invited to sit was old and worn, and no two of the strange metal chairs seemed to match.

"My name is Claudette Green," the woman said, taking out a sheet of paper. "I'm a Red Cross volunteer. Our men at Schwarzburg say you are from Frankfurt am Main, Hanau and Bad Kissingen. Am I right?"

Yossie was puzzled by the term*red cross* ; he wondered if it might be a Christian order of some kind. What puzzled him even more was how she knew what he had written on the printed form at Schwarzburg.

Yitzach grumbled. "I have never heard it called Bad Kissingen."

She frowned at a bright red book that said something like*Baedecker* written on the cover. "Is the town Bad Kissingen, on the Fränkische Saale river, between Bad Neustadt and Hammelberg?"

"It must be the same town," Yitzach said, "But nobody calls Kissingen and Neustadt bath towns." He paused to scratch his head. "Is this perhaps something from the future?"

The woman, Frau Green, frowned. "I think this is something from my past and your future. One or two hundred years before my time, there was a belief that bathing in mineral springs would cure disease. Over the years, many towns that had such springs changed their names to advertise the fact. Does that make

sense?"

"There are salt springs in Kissingen," Yitzach said, with a nervous chuckle. "A valuable source of salt, but some people do say soaking in the springs soothes the aches and pains of age."

While the woman went over much of the information that Yossie had written on the paper at Schwarzburg, Yossie continued to wonder how the information had come to her. Certainly, nobody had passed them on the road as they came into town. As Yossie studied the woman, he realized that his initial guess about Frau Green's age was obviously wrong. She was not a young woman, but she was in very good shape. Her clothing would have seemed scandalous only an hour ago, but her skirts were longer than most they had seen on the street, and her sleeves were full length.

While Frau Green asked about rumors they had heard about troop movements, Yossie wondered about the table where they sat. It looked like wood, but the feel of the table top was more like stone, and where one corner was chipped, he could see that it was a thin layer of something like horn glued down on top of what could only be thin iron plate.

"You listed grain as something you have to sell," Frau Green said. "Is it good for planting?"

"I think so." Moische said.

"If it is good, we need it to help save lives this coming winter. We must plant every acre we can. Raiders have stripped the valley of the Saale, so there is no margin of safety for the people. Will you sell?"

Just when Yossie expected the dickering to begin, she changed the subject. "You said you were going to Poland. I have a warning about that. The road east from here is very unsafe. We think we can defend Grantville and some of the nearby German towns, but the situation farther east is bad. Also, our history books tell us of a great battle near Leipzig later this summer."

During the silence that followed, Yossie tried to grapple with the idea of a history book from the future. Would it be like the Book of Life in which God seals man's fate at the close of Yom Kippur? Even as he thought of that, he realized that it could not be. A book written by mere men could not be divinely perfect. That was reserved for God alone.

"What would you have us do, turn back to Frankfurt?" Moische asked, breaking the silence.

"No," Frau Green said. "The history books also tell us that King Gustav of Sweden will be in Frankfurt this coming winter. Of course, our history books say nothing of Grantville being here. Our presence could change the course of the war, but for now, I believe that you would be safer here than either to the east or west."

"But," was all Moische could say. "Do your history books say how the Swedes will get from Leipzig to Frankfurt?"

"I wish they did, but no," she said. "There is no need to make any decisions in haste. You said you wanted to rest from your travels for a few days. Do so. We can find a place for you . . ."

She was interrupted by a loud ringing from an unfamiliar looking device that sat on a small desk in a corner.

"Excuse me," she said, walking over to the source of the interruption. The device stopped ringing when

Frau Green picked up part of it.

To Yossie's amazement, she began to speak into the thing as if it was another person. "Hello," she began, an unfamiliar word, "Lesley Hawker?" Very faint sounds of a woman's voice replied to her words, apparently from the device itself. This strange conversation continued for a minute or two.

"Pardon me," Frau Green said, finally, lowering the device from her face. She paused, looking at their confused expressions. "This is a telephone," she said. "It is a machine for speaking to someone far away."

Yossie recognized the Greek roots of the strange word as the woman explained it in her strangely accented German. Was this the device that allowed Frau Green to learn what he had written back at Schwarzburg?

"I have found a farm at the edge of town where your animals can spend the weekend in comfort. I am not so sure that I can find as much comfort for you. There is an old barn on the farm where you could store your carts, but I have no beds to offer. I must apologize that there are many people in town who will not take guests, and there are eight of you."

Moische smiled. "We have spent nights under the stars before. Is there somewhere we could wash?"

Frau Green resumed her strange conversation using the telephone, pausing at one point to push at little buttons on the device with her fingers, and then she set it down and smiled. "It is set. Orville Mobley will be here soon. He owns the farm where you can stay, and he says you may use his bath room. He will show you where he lives on the way to his farm; the distance is not far."

It was almost sunset by the time Herr Mobley showed them to the run-down barn that would be their home for the next few days. They sent him away with two bottles of wine in payment and then the men set to work saying their afternoon prayers. At the end of their evening prayers that day, they blessed the forty-ninth and final day of the*Omer* .

Seventh of Sivan, 5391 (June 7, 1631)

Saturday afternoon, Yossie, Moische, Yitzach and Yakov were sitting on improvised benches in the open door of Herr Mobley's barn. They were engrossed in study when they saw a stranger approaching up the road from Grantville. The man was dressed like many of the men they had seen in Grantville in the past few days.

"Hello!" the man called, as Yitzach and Yakov closed their Bibles and set them out of sight. They had heard that word*hello* often enough in the last few days to understand that it was a neutral greeting.

Yossie and Moische got up to greet the stranger.

"Good afternoon," the man said, in the clearest German they had so far encountered among the people of Grantville. "I should introduce myself. I am Albert Green. My wife Claudette has been helping with the Red Cross. She told me that you met with her on Wednesday afternoon."

"We did," Moische said.

There was an awkward moment of silence. Yossie wanted to ask what the Red Cross was. The mere presence of the word cross in the name suggested that it was a Christian organization, and that made him cautious about the topic.

"Well," Herr Green continued, "I came up here to welcome you to Grantville, and to say that if you wish to stay in town, the Red Cross has found more permanent places that might be good for you."

"What is this Red Cross?" Yossie asked, curiosity overcoming his reluctance to invite conversation that might touch on religion.

"It is an organization, a charity that is devoted to helping the victims of war and disasters. In the world we come from, it was founded in response to the horrors of the great wars of the nineteenth century."

"What kind of place have you found for us?" Moische asked, turning the conversation away from dangerous ground and interrupting Yossie's next question.

"You are eight?" Herr Green asked. "How many families are you?"

It took them a while to explain that they were really three independent groups. Along the way, Yossie found himself explaining that he and his sister Basya were not Yakov's children.

"Let me see if I understand," Herr Green said. "Joseph, you and your sister, Basya—that name is strange to me—are from Hanau. Jacob here is also from Hanau. And that is the only reason you use Hanauer as your last name?"

"Yes," Yossie said. "What did you expect?"

"In America, where we come from, and in Europe in our time, last names were always inherited. I am Albert Green because my father was named Green, and my grandfather before him. The people I have studied about in this time, Martin Luther, John Calvin, Ulrich Zwingli and other churchmen, they had family names too."

"Many Germans do," Yossie said, carefully avoiding the far more natural word*goyim* .

"Well, let's return to the question of housing," Herr Green said, abandoning what could have become a dangerous topic. "When the Ring of Fire brought Grantville here, some families were out of town, and their houses now sit empty. Also, there are some houses that have been empty longer. Grantville was not a prosperous town, and people moved away. If you were one big family we would have difficulty finding a large enough house, but if we can divide you between two smaller houses, it should be easy."

"Surely you do not propose to simply give us houses?" Moische asked.

"No, Moses," Herr Green said with a smile. "There will be a," he paused, "I don't know how to explain a mortgage, a loan to pay off. After the loan is paid, you will own the house."

Yossie was somewhat taken aback by the man's smile. It was not the fact that he was smiling that bothered him, but rather, the perfection of his teeth. "So how do we earn the money to pay off this loan?" he asked, remembering their discussion of the financial risk of spending the winter in Prague.

"Get jobs. Joseph, you are a strong young man, do you have a trade?"

"I worked for a printer in Hanau."

"Perhaps you could be a printer here. What Grantville really needs, though, is strong men who are willing to work in the coal mine. I think we will be able to employ any man who is willing and able to work. Coal, or what we can make from it will be essential to our ability to defend Grantville against the war that now surrounds us.

"Moses, you are another strong young man, do you have a trade?"

"I am a merchant, as much as that is possible with the war."

"A shopkeeper?"

"No, I travel, buy here, sell there. The war has ruined trade, though."

Herr Green paused, and then smiled, "It may be that your services will be valuable. There are things Grantville will need to buy from the world around us, and things I think we will be able to sell.

"Isaac?" he asked, turning. "What about you?"

Yitzach paused before he answered. "I am a butcher, and in Kissingen, I was also a cattle merchant."

"People will always want to eat," Herr Green said. "Grantville may need a butcher. Your services may be quite valuable if you know the cattle markets of the region well enough to buy beef to feed us.

"Jacob, you haven't said much," he went on, "what is your trade?"

"I worked a little for the same printer as Joseph, but my main job was as a teacher."

"What did you teach?" Herr Green asked, interested.

"Mostly, reading and writing to young children, but I have also taught," he paused. "I have taught Bible to older students."

Yossie knew that Yakov's awkward pause had been a stumble over the words Talmud and Torah, neither of which was a word appropriate for use in a conversation with an unknown Christian.

"Good," Herr Green exclaimed. "I have also taught Bible. Right now, though, Grantville needs German teachers. Do you think you could help in our school, teaching German to our children, or even to adults?"

The old rabbi was startled. "It would be permitted? You do know that my German, well, it is not the local dialect."

"We have a whole town full of people who speak nothing but English and need to learn German, and we have only a very few who speak the language. I may be the only one who has studied German the way it is spoken in this century. Indeed, I have noticed that your accent is different from the local Germans, but that seems a small matter when you are an experienced teacher.

"Are there any questions you have?" he asked changing the subject, and then he immediately interrupted anything they might have asked. "Tomorrow is Sunday. If you want to go to church, I can help. Grantville has many churches. We have a Catholic church and several different Protestant churches."

Yossie was not alone in being surprised at the man's ignorance. It was one thing to meet a charcoal burner or a smith who did not recognize that they were Jews, but this man was obviously well educated.

Yakov cleared his throat, and then spoke carefully. "Herr Green, we have heard hints about Grantville's toleration of religious differences even when we were in Hildburghausen last week, when many people were still calling it the pit of Hell. Now you tell us of Catholic and Protestant churches together in the town. Am I right?"

"Yes," he said, and then hesitated. "People called Grantville the pit of Hell?"

"Yes," Yakov said, with a smile. "The people of Schwarzburg saw it as a great pit opening in the earth, with thunder and lightning. The first rumors that reached the west from there were terrifying."

"Yet you came here? You are very brave men."

"Either that or we are fools," the Rabbi said. "The story you people tell of coming from the year 2000 is hardly reassuring. We tried very hard to avoid coming here, until all of the alternatives sounded even worse. But we were speaking about toleration of religious differences in Grantville, were we not?"

"When my wife told me about your group, she said that there was something that set your group apart from other Germans she had met. If it is a matter of religion, truly, you need not fear."

"Thank you," Yakov said, and then hesitated. "We are Jews."

Yossie did not know what reaction he expected, but he certainly did not expect Herr Green's reaction.

"I must apologize for my stupidity," Herr Green said. "I have intruded on your*Shabbat* and I have been blind to hints that a man of my education ought to have seen. Ah,*shalom alachum* to you."

"*Alechum sholem*," Yakov said, while Yossie marveled. The fact that the man had pronounced the Hebrew greeting at all was incredible, even though the man's pronunciation was quite bad. Outside of the print shop in Hanau, he had never encountered a Christian who knew any Hebrew at all.

"Those yellow circles on your coats, they identify you, yes?" Herr Green asked, pointing.

"They are Jew badges," Yakov said.

"They are a symbol of one of the most shameful things that Christians have ever done," Herr Green said forcefully. "I say this as a committed Christian. Under the laws of Grantville, nobody will ever require such badges. If you wish to remove them, you are welcome to do so."

"Imperial law demands that we wear the badge," Yakov said.

"Imperial law does not apply in Grantville!" Herr Green said.

"That is a dangerous boast," Moische said. "I am curious, though, about the multiple churches of Grantville. I am no expert on Christians, but so far as I understand, Protestants believe that Catholics are doomed to eternal hellfire for their beliefs, and Catholics believe the same of Protestants. How did this change in your time, so that Protestants and Catholics could live together in peace?"

Yossie knew that Moische and the old Rabbi were deliberately exaggerating about the inability of Catholics and Protestants to live together. In lands where the Catholic Church had forcefully put down Protestants, relations were indeed grim, but in towns such as Hanau, however, the churches did coexist.

Herr Green frowned. "We never really solved our problems. Perhaps we never will. Some churches have agreements with each other, but others allow no compromise on issues of doctrine. If we have made any progress, it's in learning to live and work with people with whom we disagree. You cannot force a person to believe in God! In my country, the United States of America, we determined that the government must remain neutral in all matters of religion."

Herr Green paused. "I suppose I should be as open with you as you have been with me. I am a minister, a pastor in a church that was, in parts of America, one of the dominant Protestant churches. Now, I find that when I try to explain my church to German Catholics or to German Lutherans, they react as if I am a dangerous heretic."

None of them responded to this remarkable admission. After an awkward pause, Herr Green, or rather, Pastor Green continued. "My church is called the Baptist Church. There are a few Baptists in this time in England, and there are some common beliefs shared between Baptists of my time and some of the Anabaptists of this time."

He paused, but again, there were no questions. "As I said before, when my wife met with you, she said that there was something different about you. I came up here to find out about that. I came to welcome you and tell you about the churches of Grantville. What I hoped for was that you might be a group of Anabaptists, so that I could speak about religion to Germans of this time who would not consider me as a cousin of the Devil."

There was another pause. This time, though, it seemed that Pastor Green was done. Moische broke the silence. "I do not know how to respond to what you have said. I wonder, though, about what you said about our welcome to Grantville. Do your offers of houses and work change now that you know we are Jews?"

"No," Pastor Green said. "You are still welcome."

Yakov cleared his throat. "Even if we Jews are doomed to burn in Hell by your Christians from the future, just as we are by the Christians of this time?"

"I would not have put it so bluntly, uh, is it Rabbi Jacob?"

"Yes, I am a rabbi," Yakov said, surprised.

"You are right," Pastor Green said, "That is how many Christians see Jews. We sincerely wish you would accept the salvation offered by Jesus Christ. Despite that, you are welcome. It would be entirely wrong for us to make your welcome to our community conditional on your acceptance of any faith."

Yakov nodded slowly. "I thank you for your honesty, Pastor Green. You have certainly given us something to think about as this second day of*Shavuos* comes to an end."

"Second day of what?" Pastor Green asked.

"The festival of*Shavuos* , Christians call it Pentecost."

"Pentecost?" Pastor Green asked. "Why, I suppose you are right, tomorrow is the seventh Sunday after Easter. The feast of weeks? Isn't the Hebrew for week*shavuah?* So in that case, the plural is*shavuoth* , isn't it?"

Yakov nodded. "Jews from Spain, Africa and Turkey, pronounce it*shavuot. W* e Jews in Germany pronounce it*shavuos.* "

"It's good to find that the Hebrew course I took in seminary wasn't a complete loss," Pastor Green said, with a smile. "*Shavuos*is a harvest festival, am I right? The day of the first fruits?"

Yossie was amazed to hear such a conversation as Yakov replied, "In*Shemos* , what you would call the book of Exodus, Shavuos is described that way. It is in the section called*Ki Tisha* , soon after the story of the Golden Calf."

"Chapter thirty-four," Pastor Green said.

"Yes," Yakov said, with a smile. "It is one of the three*Chagim* , what is the German word . . . pilgrimage festivals. But it is more than that. We also consider it a celebration of the giving of the commandments at Mount Sinai, because the very same text connects*Shavuos* so closely to Sinai."

Pastor Green seemed to enjoy this turn of conversation. "For Christians, we also think of it as a commemoration of revelation, but in our case, for the gift of the Holy Spirit to the Apostles, as recorded in the Book of Acts. But I am curious about one thing, you said the second day of, of*Shavuos* ? I don't remember anything in the Bible about two days."

"Your memory is right," Yakov said. "I think you know that the Jewish calendar is based on the lunar month. According to the Talmud, tractate*Sanhedrin* , each month was counted from the sighting of the new moon by observers on the walls of the Temple in Jerusalem. If we were in the holy land, we would celebrate for only one day, but here we are in*galus* , in exile far from the land. To account for the uncertainty in the date, the Talmud says we should celebrate for an extra day. Of course, we also have an arithmetic formula that lets us know when the new moon will be observed in Jerusalem, but we keep the festivals for an extra day anyway, to remind us of our exile."

Yossie had never heard Yakov speak so freely about Jewish matters to a Christian, even in the protected context of Master Hene's print shop. Yossie was used to censoring his language carefully when speaking to Christians, carefully avoiding the use of the Hebrew words that made up a large fraction of his Jewish dialect. Now, he was shocked to hear Yakov letting down his guard.

Pastor Green excused himself to leave shortly after that, and then it was time for their afternoon prayers. After they had finished the final meal of the Sabbath, though, they talked long into the evening about what they had learned from Pastor Green about the town of Grantville and the strange world from which it had come.

"Reb Yakov," Yossie asked, after the talk had turned from detail back to generalities. "I still don't understand something. What made you start talking about the Talmud with a Protestant preacher?"

The old rabbi paused, stroking his beard. "It was a mistake, at first. I never should have mentioned Shavuos to him, but I did. Once the topic came up, though, he seemed to enjoy it, so I said more, and more. I suppose you could say I was testing the tolerance he spoke of with such evident pride."

"So have you reached any conclusions?" Basya asked.

"Have you?" Yakov asked.

"Reb Yakov, I wish I'd been listening to the original conversation," she said. "But listening to you men talking, it sounds like this preacher may be telling the truth about Grantville."

"He may be," Yakov said. "So I think we will stay a while to learn more about these people."

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Not a Princess Bride

By Terry Howard

James Richard, or Jimmy Dick, Shaver (known to his close associates, and almost everyone else, as Dickhead) was in the grocery store. The old drunk was not there buying food. Most of his calories came from beer, followed by pretzels. Yes, believe it or not, despite the Ring of Fire, the Club 250 still sold pretzels. They were much better or a whole lot worse than the old ones, depending on who you asked. Hamburgers and fries rounded out his usual diet. You weren't always sure that the ground meat was pure beef, the bun was hand sliced, and the pickle wasn't Vlassic. But someone had managed to get the mustard right.

Jimmy Dick was in the store buying tobacco. As far as he was concerned what you could get was shit. Most folk—everyone who smoked, really—agreed with that opinion. They also agreed that it was way over-priced but then they had complained about that back in the real world. Still, when the local crop failed because the growing season was too short, you bought what was available or quit. As he left the check out lane a man was waiting for him at the baggers' station. There was no bagger, of course. That was because there were no bags, paper or plastic. You brought a canvas bag, a basket, a tote sack or something from home. Cardboard boxes were popular at first, but they wore out. The ones that were still in good shape were bringing a good price on the curiosity market all over Europe, so the price went up as the supply went down. One little old lady thought of her hoard as her retirement fund.

As Jimmy Dick passed him, the man spoke. His English was good. It was understandable, with a heavy German accent of some sort that Jimmy did not place. "Herr Sha—Mister Shaver?" Jimmy stopped. "Forgive me for stopping you, I heard the girl call you Mister Shaver. Are you the Mister Shaver who is the famous philosopher?"

Jimmy had given up fighting it. Only the Dutch can stop the tide. "That's me." Jimmy waited. Next would come a joke or an insult or—rarely—a compliment. Jimmy had learned that to wait, laugh and leave was the best way of taking the steam out of the sails of whoever was trying to be funny at his expense.

"I would be honored if you would let me buy you a beer and ask you a question," the stranger said.

Club 250, Jimmy's usual watering hole, would not admit a Kraut. The Gardens, though, were just across the street and they would let anyone in. Jimmy was well known for buying beer for anyone who would listen to him. He was also known to never turn down a free beer. "Throw in a ham sandwich and you're on."

The stranger looked puzzled. "That was a yes?"

"Hell, yes, that was a yes," Jimmy said.

The stranger beamed.

* * *

It was a quiet walk to the Gardens. They ordered the potables and, oddly enough, ate in silence. When the sandwiches and beer were done, the down-timer ordered two more beers.

"Herr Shaver, I have a question of practical philosophy," the Kraut said.

Jimmy grunted over the rim of his beer.

"My daughter . . ." The man paused to swallow a lump in his throat. "She wishes to marry. We, her mother and I, have said no. We feel that the boy is beneath her. We think she should wait until she is older and that she should wait for someone better. We would prefer to arrange for her to marry a man from back home. We have forbidden her to see this boy. But she comes home from school with that gleam in her eye. We have spoken to her about it. She smiles now and says nothing. Once she told us that when they have graduated and he will find a job and they will marry and that there is nothing we can do about it.

"We threatened to return home. She knows it is only a threat. We want only the best for her. We don't understand a culture that encourages the children to disobey the parents. It is not ri . . . it does not seem right. What are we to do?"

"You want your daughter to wait for someone better?" Jimmy set down his empty beer.

The odd man nodded.

Jimmy waited. The Kraut waved for another round.

"When I was a kid growing up in the hills," Jimmy began, "there was a family in the neighborhood by the name of Jones. They owned half a mountain with a good farm on it that the old man bought with the money he brought back from being in the army in World War One, along with an uppity French bride.

"He was in the quartermaster's outfit and made the money by selling things off before they could get to the front, then marking them down as being destroyed in route.

"Anyway, the Joneses had themselves a daughter. She was a looker like her Ma. As she grew up, her Ma filled her head with the idea that none of the local boys were good enough for her. Most folks thought that Mrs. Jones wasn't quite right in the head. They seemed to think she was living in a dream world. She thought that the family ought to go to France and let their daughter find someone suitable. But the old man hadn't managed to steal that much money or he hadn't managed to hang onto enough for that,

so it just wasn't going to happen.

"Well now, the odd part of the story was that most of the women in town seemed to agree that she shouldn't settle for a local boy. My Pa told me once he thought it was because they didn't want their daughters to have to compete with her.

"At any rate, a fellow by the name of Dupont showed up in town along with a Frenchman who couldn't speak a word of English. Now, I don't know whether this Dupont was related to the Duponts that had all the money or not, but folks assumed that he was. They had come to go bear hunting. Most of the bears were shot out by that time. But, there was a she bear with cubs in a cave down in a holler on the Jones place. The only reason they were still around was because old man Jones was a really bad shot and he sure wouldn't let anyone else go hunting on his place.

"Well, they went up to Jones place to see if they could get permission to bag that bear. Mrs. Jones had heard all about them, of course. A rich industrialist and a world-touring French noble showing up at the same time was just too much. She suddenly had to decide which man they were going to let marry their daughter.

"Of course, the two of them had heard all about the beautiful daughter of the Joneses and when they arrived they were met in the front yard by Papa Jones, Mama Jones and Pretty Little Miss Jones. Mama Jones was a bit put out when all they wanted to know was about the bear. But then she got a gleam in her eyes and insisted that her husband take them all up there right that instant.

"Well, when they got to the top of the bluff looking down into the rift where the cave was, Mrs. Jones took her daughter's hat and sailed it off over the edge into the mouth of the cave. Then she announced that which ever one of them brought her daughter's hat back to her would have her hand in marriage. The Dupont fellow looked at the daughter, looked at the hat in the cave, looked at the climb in between and the noises coming out of the cave and shook his head no. The Frenchman, without a word, climbed down, retrieved the hat, climbed back up, used the hat to dust himself off and then sailed it off back into the gulch. "It's your hat," he said, "if you want it get it yourself.

"Thanks for the beer." Jimmy Dick rose to leave.

"But Herr Shaver, what does it mean? Are you saying I should let my daughter marry this no-account that she is taken with?"

"I ain't got no idea. But let me tell you something about American kids, which includes your daughter if she's been in the public school for more than a year. You tell them they can't have something and you make them want it all the more. Shoot, we took over an entire continent just because one party or another kept telling us we couldn't have it. If you're convinced that this kid she wants to take up with is no good, then why don't you help her to see it?"

"We have told her. She will not listen."

Jimmy Dick shook his head. "I can see why. She came by it honest like. You don't listen either. I didn't say tell her. I said help her see it."

"How do we do that?" the Kraut asked.

Jimmy sighed and sat back down. Then he waved for a round of beers that he paid for. "Okay, if this kid is beneath you, then his table manners ain't up to your standards. Have him over to dinner with the family.

Pull out the stops. Put out the best china, the real silver, have soup and salad, lay out three or four forks, and let her see what an embarrassment he is. Does she really want to set across the table and watch him slurp his soup for the rest her life?

"If you ain't got the wherewithal to spread the table, take the kids out to Grantville's Fine Dining and tell the fancy pants with the menus that you want a cloth napkins table, not paper.

"Put them together often." Jimmy held up a hand to forestall an objection. "Have him over to your house or let them go where you or someone can keep an eye on things. If he ain't no good, give her plenty of time up close and personal to figure it out. I guarantee he'll look different up close."

Having said that he tipped his beer and walked out.

It was a month or more later that Jimmy saw the troubled father in the store.

"Hey there, guy. How did you come out on that trouble with your daughter?" Jimmy asked.

The man looked sad. "What you said, about things looking different up close and personal? You were right. He is a nice boy, a good boy, he is working hard and doing well in school. He has a promising future. I would be proud to have my daughter marry him. But, it is so sad! She will not, how was it said? She will not give him the time of day."

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The Painter's Gambit

by Iver P. Cooper

Birgit's mother had warned her not to take any food or drink from boys, not to answer any of their questions, and, most especially, not to smile at them. Birgit had dutifully agreed. Unfortunately, she broke all three rules the same day.

Birgit and her friends Anna and Barbel had gone to Halberstadt to enjoy a festival. They walked arm in arm across the town square, the Domplatz, and were surprised to find several of their fellow villagers clustered around a young foreigner. He was regaling them with tales of the fabulous New World. Strange beasts. Indians. He even had drawings to show them. Drawings he had made himself.

Birgit and her companions hovered on the edge of the crowd. Suddenly, the storyteller gestured in her direction. "Now, that beautiful lass would amaze the natives. They would say that her hair was like a river, lit by the morning sun." Birgit smiled involuntarily. Then she collected herself and started to pull away. Her girlfriends pulled her right back.

"Say something to him," Anna whispered furiously.

"But he's a man!"

"That's the point, you idiot."

Birgit blushed. "Um—can you draw me?"

"Draw us all," said Barbel.

"All of you? It will endanger my health and sanity, to study so much beauty all at once. But I will attempt it." The young man took out a piece of chalk and drew rapidly in his sketchbook. "What do you think of this?"

The artist had drawn them as if they were wearing elegant gowns, and were standing on a cloud, looking down at a shepherd who looked like him.

Birgit puzzled over the scene. "It doesn't seem to be a story from the Bible."

"No, it isn't. It is the judgment of Paris. The Greek goddesses Aphrodite, Hera and Athena appeared before Paris, the Prince of Troy, and asked him to choose who would be awarded a golden apple, inscribed, 'to the fairest.'"

Barbel fluttered her eyelashes. "So which of us would you choose?"

"Hmm . . . In the myth, Paris didn't even try to judge the goddesses' beauty, he just picked the one who offered him the best bribe."

Barbel giggled. "And what sort of bribe would you like?"

Birgit carefully stepped on Barbel's toe. "Would you like to share my apple?" she asked.

"I would be delighted."

Anna spoke up. "Come, Barbel, I think Max is on the other side of the square, let's go say hello."

"I am fine right here. Or I would be, if my toe weren't hurting."

"I think your toe will hurt even more if you stay. Come. Now." She turned to Birgit. "Call us if you need us."

Birgit took a bite out of her apple, and then handed it to the stranger. "I am Birgit. Birgit Wegener. I am the eldest daughter of the smith in Stroebeck.

He took a bite, too, and smacked his lips. "I am Felix Gruenfeld. My father is—was—a book printer and bookseller; he is . . . retired . . . now. I am a member of the Guild of Saint Luke's in Amsterdam. The artists' guild, that is. I was returning to that city when I discovered that it was under siege. I decided to flee to Germany."

"It is hard for me to think of Germany as a place of refuge, especially after the sack of Magdeburg," said Birgit.

"I understand, but you have the Lion of the North to defend you now. And Amsterdam has been in sorry straits since the English and French betrayed the Dutch at the Battle of Dunkirk."

Felix reached for the drinking horn at his side. "May I offer you something to drink? I am sorry, it is just small beer." Birgit took a sip, and he did the same. He scrounged up some cheese for them to share, too.

They chatted for a while. Birgit grew more and more interested in this man, so different from the others she knew. She was disappointed when he said, "Unfortunately, I need to take my leave of you. I must try to sell a few pictures in the market this afternoon. Once the festival is over, the local guild will be very hostile to any outsider trying to sell paintings in this town."

"Of course, I understand. Have you sold any pictures so far?"

"I have not been doing as well as I expected. The landscapes and natural studies which were snapped up by the burghers back home don't seem to satisfy Germanic tastes."

Birgit waved the picture of her and her friends at him. "Your sketch was very good. Perhaps you should be trying to sell portrait miniatures, instead."

Felix had a pained expression. "It is my desire to use my art to convey the reality of nature, which is God's creation. To depict the sweep of great mountains, and the delicate colors of a butterfly's wing. And to express these both beautifully and accurately. To paint portraits is to trivialize my skills."

Birgit had noticed that Felix wore clothes which, while made of a good material, had been carefully patched. She was also a practical girl. "I apologize, good sir. I had not realized that you were independently wealthy, and hence could paint and draw without catering to popular tastes."

Felix held up his hands. "Touché!" He paused. "Still, I can't very well paint portraits in advance, in the hopes that the sitter's father or spouse will show up at the marketplace. Portraits must be commissioned. So on one visit I look for prospects, and on the next, I deliver the portrait and get paid. Right now, I need works which will appeal to many people, and might be sold then and there."

"You could always paint scenes from the Bible."

"There is that. Although they are difficult to sell in some towns."

"But surely an artist of your caliber can overcome the problem. You could leave out the saints' halos, for example."

Felix nodded thoughtfully. "I thank you for your advice. I will think on it." Waving goodbye to Birgit, Felix said, "I think that at the hour of vespers, I will go pray inside the Church of Saint Martin."

"That is very pious of you," said Birgit. "I am very pious myself."

* * *

Felix and Birgit's courtship progressed from there, albeit in fits and starts. Birgit could not go to Halberstadt often without arousing parental suspicions. For that matter, Halberstadt, with only ten thousand inhabitants, was not the best place for Felix to sell paintings. Still, they found opportunities to meet, even though it took some effort.

Felix's story began to come out. There were many painters in the Netherlands, and hence it was important to have a specialty in which you were the acknowledged expert. After achieving mastery, Felix had decided to make himself the expert on the New World, and had wangled a position in the entourage of the Governor of New Amsterdam. He painted portraits, made maps, and so forth.

Felix returned to the Netherlands, only to find that his mother and elder brother had died of some potent disease, and that his father had abandoned himself to drinking and gambling. His life savings, which could have gone to setting himself up in his own shop, as an independent master, went instead to paying his father's debts. Felix had to make do by inking in landscape backgrounds for the portraits of others. Boring work. Felix admitted to Birgit that this might explain some of his antipathy for portraiture. Except when the subject was her, of course.

Besides his artistic activities, Felix also collected "curiosities"—plants, minerals and so forth which might interest a collector. In the Netherlands, the interest in these wonders was not limited to the nobility; many wealthy merchants had*Wunderkaemmer* . Felix' curiosities could be sold, or given, to a prospective patron.

It was while Felix was away from home, on a collecting trip, that the next disaster occurred. It was a turn for the worse in the long war with the Spanish Hapsburgs. They destroyed the Dutch fleet, seized Haarlem, and laid siege to Amsterdam. It was clearly not the best time to try selling nature art in the Netherlands. Or art of any kind, for that matter. Except perhaps Catholic altarpieces.

Since Felix was of German descent, he decided to try his luck in the Germanies. Unfortunately, most of his stock and materials were in Amsterdam, on the other side of the siege line.

* * *

"Do you play chess?" Birgit asked.

"No, I don't. Didn't you ask me that before?" Felix took a closer look at her. They were in a dark corner of the cathedral in Halberstadt, but now that his eyes were better adjusted to the gloom, he could see that she was upset. "Hey, what's wrong?"

"One of my friends was indiscreet."

"Let me guess. Barbel."

"Yes. She said something about us . . . didn't realize her mother was nearby. And her mother makes Barbel seem like a Trappist monk."

"Big talker?"

"Yes. It is only a matter of time before my father finds out. Days at most."

"So perhaps I should make a preemptive strike. Tell him that we are engaged to be married. I can say that, right?" He grinned at her. She smiled for an instant, then looked grim.

"It is more complicated than that. I have put off telling you about the peculiar courtship and marriage customs of Strobeck. If your art were selling well again, they wouldn't matter so much. But under the present circumstances—I am worried."

Felix was puzzled. "Just what are these customs?"

"Let's say that you need to learn to play chess. Right now."

* * *

"Checkmate!"

Felix Gruenfeld studied the board glumly. This was no friendly chess game. He was in the Saxon village of Stroebeck, where commoners had played chess for six centuries. In Stroebeck, the game of chess was an intimate part of the game of life.

Felix quietly tipped over his king, conceding the game. His opponent, Hans Wegener, smirked.

The mayor of Stroebeck cleared his throat. "Felix Gruenfeld, you have asked for the hand of Birgit, daughter of Hans Wegener. Under the laws and customs of Stroebeck, in order to proceed with the marriage, in spite of the opposition of Hans Wegener, you had to either defeat him at chess or pay a forfeit of twenty gulden to the village treasury. Since you have lost the game, you must either pay, or leave." Birgit was fighting back tears.

"I just don't have that kind of money right now."

"We don't need vagrants like you in Stroebeck," Hans snarled.

The Mayor was more tactful. "I am sorry."

Felix looked despairingly at Birgit. She blurted out, "You can try again in six months!"

"Hah!" said Wegener. "You are hopelessly inept. Six months or six years, you still aren't going to win against me without tutoring from a master. And how would you gain such training? If you can't pay the penalty, you can hardly pay for chess lessons. For that matter, outside of Stroebeck, chess is strictly a nobleman's game, and you can hardly expect a nobleman to agree to teach you. If one took pity on you, and gave you a few lessons, they won't make you the equal of someone who has played every day for three dozen years."

Felix looked at him stonily. "That may be, but I will be back in six months, and if I must, six months after that."

He bowed to Birgit and left the room.

* * *

Felix had realized that his chances of winning the game were not good. After his defeat, he had gone, as he and Birgit had planned, to the nearby city of Halberstadt. There, Birgit's brother, Karl, met him.

At one point, Felix had been a bit nervous about how Karl would regard the whole affair. Felix feared that Karl might be inclined to protect his little sister from undesirable suitors, and Karl was a journeyman smith. Swing a hammer all day, for years on end, and you are quite capable of flooring a mere artist. Even one who has roughed it in the New World.

However, Karl had reached that stage of life in which the son knows much more than the father. Hans' heated opposition to Felix had made Felix prime brother-in-law material, so far as Karl was concerned.

"Here, Birgit gave me these for you. This is for your stomach,"—he handed over a loaf of bread—"and this is for your heart." The second present was a small leather pouch, which contained a lock of blonde hair. Felix quickly hung it around his neck, and concealed it under his blouse.

"Where are you going next?" Karl asked.

"I hear that Gustavus Adolphus is in Magdeburg. Perhaps he has need of an artist? Or at least of a draftsman? My status would be much enhanced if I had a royal patron.

"If the Swede is off with his armies, I will try my luck at that Grantville we keep hearing about.

"Once I am settled, I will send word here. Check for messages at that tavern you are so fond of,*The Roasted Pig* . Now give me a moment to write a note for you to carry back to your sister."

* * *

Birgit was, indeed, a practical girl. This first became evident to her family, years before, when her mother was sick for a few weeks. Birgit went to the market, and did the shopping. And, of course, the obligatory haggling. She was a natural. After her mother recovered, it was decided to let Birgit continue in that role. She was so good that she impressed the pros. One merchant said he would have hired her on the spot, if she were a boy.

The family was less accepting when she started making suggestions as to things that her father could make in the smithy. That is to say, her father was less accepting. More to annoy him, than because of his faith in Birgit's business acumen, Karl made a few of the simpler items as journeyman projects. And was pleasantly amazed when they sold, sold very well indeed.

It was not prudent to remind her father about it, however.

Given her mental makeup, it was not surprising that,*being* a practical girl, Birgit turned to the question of how to improve the financial situation, not to mention the marital prospects, of a certain talented but slightly*im* practical artist-cum-curiosity collector.

Birgit was at her friend Anna's home. "I need to write a letter," she said.

"To Felix?" Anna mouthed. Birgit nodded. Anna quietly brought her paper, a quill pen, and an ink bottle.

"Dearest Felix," she began. "I know you are my steadfast knight. Do not despair. I am confident that you will sell your art, that you will find a great patron, and, most important of all, that we will be united.

"I was thinking about how you might more profitably practice your skills. Did you not tell me that you can make copper engravings and woodcuts? A print can be sold more cheaply than a water color. The profit on each print is small, but those profits will add up.

"Moreover, you have told me that your father was a bookseller. Do you not know the names of your father's colleagues in other towns? Can you engage them to sell your prints for a percentage of the profits? Please think upon this."

She added a few felicities, sealed the letter, and handed it to Anna. "Can you have Max take this to*The Roasted Pig* , in Halberstadt? Father is watching me too closely for me to dare take it there myself. And Karl can't go this week."

* * *

A bleary-eyed Felix stumbled through the door of the Inn of the Maddened Queen.

The town of Grantville was wondrous, all right . . . wondrously confusing. There was no town square, and there was no telling which shops might be on a particular street. The residents spoke English, but with terrible accents. His attempts to locate the local Guild of Saint Luke's had been greeted with polite incomprehension.

He had stayed, at first, at a large dormitory. He didn't like the looks of some of the other guests and decided to find alternative accommodations. One of the citizens of Grantville had directed him to Clarksburg Street, and the Inn of the Maddened Queen. He hurried in; it was raining heavily.

Felix went to the desk and inquired as to the cost of lodging. He winced when he heard the number, it was way out of his league.

Felix decided that he would at least get something hot to drink before he went out into the night. Perhaps he would have some of this*coffee* he had heard about. There was a menu board on one wall, and the price of a cup of coffee, at least, seemed reasonable.

The painter winced when he came upon a table at which two men were playing a game of chess. He tried to find seating as far away as possible. No luck. In fact, by the time he finished his circumnavigation of the premises, the only open seat was at an adjacent table. He grimaced, and turned his chair so that his back was to the players.

"I guess you don't like chess," said the fellow facing him. He was a stocky man, with very bushy eyebrows.

"It evokes rather unpleasant memories."

"Oh?"

"I was in the Harz Mountains, and stopped in Halberstadt. It is a small city, perhaps thirty miles southwest of Magdeburg. There was a festival going on and, well, I met this girl. A real beauty, and clever, too. We saw more and more of each other, on the sly, but we weren't sly enough, I'm afraid. Her father found out.

"He said that he would refuse his consent, and she said that she wanted to have it, but didn't need his consent."

"Is that true?" Bushy Eyebrows was clearly doubtful.

"Her town, Stroebeck, is in the bishopric of Halberstadt, which is ruled directly by the Catholic Prince-Bishop Leopold Wilhelm von Hapsburg. So it strictly follows the canon law as proclaimed by the Council of Trent. That said that marriage does not require parental consent, and that it is anathema to assert otherwise."

"But even if that is so, cannot her father refuse to pay a dowry? Can he not disinherit her?"

"Oh, yes, and he threatened to do those things. And she avowed that she would marry me nonetheless.

"Then, he said, 'Oh my foolish and wicked daughter, I will insist on the strictest compliance with the laws of this town. By those laws, any outsider who wishes to marry a fraulein of Stroebeck must play her father, or his champion, at chess. If the prospective bridegroom loses, he must pay a forfeit to the town treasury.'

"The penalty is much higher if her father did not consent to the marriage. That wrinkle is not in conflict with canon law, because it does not formally forbid the marriage itself."

"Chess? How strange."

"Stroebeck's the*Schachdorf* , the 'chess village.' They all learn to play when they are knee-high, boys and girls alike. Unfortunately, we got caught before my Birgit could teach me much more than the pieces and their moves.

"If her father liked me, he could have appointed, say, his six year old son, or the village idiot, to challenge me. But he wasn't keen on having me as a son-in-law, so he took me on himself. And he'd been village champion three years running."

In the meantime, the chess players had finished their game. One of them, a solidly built man with grey hair, got up at this point. "Hi, my name is Vince Masaniello. I couldn't help but overhear you."

Felix shrugged. "That's all right. I suppose there is some cathartic relief in talking about it."

"So let me get this straight," Vince said. "There is a village out in the Harz Mountains, near Halberstadt, where the commoners play chess."

"Yes, that's right. My sweetheart told me that it all started when the Bishop of Halberstadt imprisoned some prince or duke in a tower in Stroebeck. He was bored, so he drew a chessboard on the floor of his cell, and made pieces, and taught his guards how to play. They taught their friends, and the game became popular. Even the women played.

"Then some court functionary had to spend a night in Stroebeck, and was surprised when the mayor invited him to play chess. And even more surprised when the mayor beat him repeatedly.

"Word spread, and upper class Brandenburgers would make a point of stopping by to play. Not just with the Mayor, but with any villager who showed an interest.

"Time came when, once a year, some bigwig would come to Stroebeck and play against their chess champion. If the Stroebecker won, well, they didn't have to pay taxes that year."

Vince snickered. "I bet that really gave a boost to chess education in Stroebeck."

"So I was told. But my problem is that if you want to marry a Stroebeck girl, you have to either beat her father's champion at chess, or pay a big fine. And I had neither the chess skills nor the cash. I am a painter without a big patron."

Vince pondered Felix' story. "The best chess player in Grantville is Joshua Modi. He held master rank in

the United States Chess Federation."

"Master? There is a Chess Guild in Grantville?"

"Oh, no. It is a just a rank. The bottom rung in the UCSF is Class J. The classes go up to Class A, and then above that are Expert, Master, and Senior Master."

"And how many people are of Joshua Modi's rank?"

"Perhaps one USCF member in one hundred. And only perhaps one in fifty Americans was a member of the USCF."

"That is impressive. Do you think he would be willing to teach me?"

Vince scratched his head. "I am sure he would love to do so, but I doubt he has the time. He and Colette are spending most of their time in Essen nowadays. Greg's a fine player, too, but he is busy designing things-that-go-boom in Magdeburg. They may be able to give you a few tips before you have your rematch in Stroebeck, but that's about it."

"Can you help me?"

"Well, I am no chess master, but the knowledge of the game has advanced a lot in the four centuries since the Ring of Fire. If you are bright, I am sure I can teach you enough so that you will give your prospective father-in-law quite a shock."

"I would be very grateful." Felix bit his lip.

"What's the matter."

"My heart is big but my purse is small."

Vince smiled. "Don't worry about that, an old man likes to have company. You will learn by playing with me and my friends." He spread out his hands, indicating the room. "The Grantville Chess Club takes over this place every Thursday night. And I am sure we can find some chess books you can borrow and study, so we don't beat you too many times in a row."

"The Grantville Chess Club?" asked Felix.

"Yes, didn't you notice the sign outside?" Felix walked over to the door and poked his head outside. The Inn's sign showed a red, four-pointed crown, with a lightning bolt over it.

"I suppose the crown is symbolic of the queen, and the lightning bolt of madness," said Felix doubtfully. "But what does that have to do with chess?"

Vince explained. The Inn had been started by Joshua and Colette Modi. Its name was a chess player in-joke. The medieval chess queen had been a rather weak piece, but its role had changed over the past century. The Italian masters Lucena and Damiano popularized a new, faster form of chess, in which the Bishop was allowed to move more than one space at a time, and the Queen was given the powers of both the Rook and the improved Bishop. The new game reached Germany by 1536, where it was usually called the "rapid" or "foreign" chess game.

"And if you preferred the old game," Vince concluded, "you called it the 'chess of the maddened Queen.'"

* * *

"Is this your prayer book, sister?" asked Karl.

Birgit looked up. "Yes, it is."

"Well, don't leave it out." He handed it to her.

"I will take it to my room right now. I might read a prayer or two, while I am at it."

Birgit carefully closed the door to her bedchamber. As expected, a letter was concealed inside the book. It was from Felix. He assured her of his undying love, and announced that he had safely arrived in Grantville. Birgit was happy to learn that he had found someone to tutor him in chess. But really, he needed to find buyers for his art.

The letter ended with a story. "I must tell you about the dream I had. We were standing together on the battlements of the tower in Stroebeck, watching the sunrise. Suddenly, the tower shrunk, and we shrunk with it. The tower was now a fighting platform on the back of a great elephant, and the elephant was standing on a giant chessboard. The other pieces were there, too, and they were alive as well. The knight was on a horseback, and carried a great lance; the bishop stood, brandishing a mighty mace. For you know, dear Birgit, that the church militant cannot use edged weapons. The queen had a chariot drawn by a winged dragon, and the king sat on a throne carried by bearers. I could not see the Player who controlled our movements, but his opponent was your Father.

"If one piece captured another, they actually fought, the former slaying the latter. At last we were brought into play, capturing a pawn. But then your father's queen charged across the board, straight toward us, her mount breathing fire that singed us from several squares away. It was clear that we were doomed.

"Then I woke up, of course."

Clearly, her sweetheart did not have fond memories of his first chess match. Not surprising.

But Felix' dream had given Birgit an idea. At her first opportunity, Birgit visited the minister at the Church of Saint Pancratius in Stroebeck. "Reverend Sir, there is a way in which our town can draw some business from Halberstadt."

"What do you have in mind, Birgit?"

"A game of what you might call, 'living chess.' The pieces are played by townspeople. The pawns are young children, the minor pieces are older ones. And perhaps the privilege of being the king, queen and rook could be sold to visitors. Captures would be presented as a mock battle. And the village champion could play a paying visitor. Or some dignitary."

"What an interesting idea, Birgit. I will tell the Mayor how clever you are."

"Oh, it wasn't my idea. I am just a girl, after all. It is something that Felix thought of."

"Felix? The young artist your father disapproves of? You have been in touch with him?"

"Yes, sir. Please don't tell father. Felix will return in six months. He deserves a fair rematch. Please don't let father trick him into playing some crazy variant."

"Well, if he is willing to come back in six months, it says something about his character. And this 'living chess' idea of his, it speaks well for his creativity and intelligence. I will see what I can do."

* * *

On that first Thursday, Vince had taught Felix the moves of each piece, and taught him how to mate using the major pieces, the Queen and Rook, against a lone enemy King. He also showed him a few common chess situations: discovered check, double check, and forks. Felix was falling asleep at that point, and Vince ordered him home to get some sleep.

When Felix returned, the following week, Vince announced that it was time for Felix to play an actual game. Not surprisingly, Vince won match after match.

Felix sighed. "Chess is taking so long to learn. Sketching and painting came so naturally to me."

"I hope you won't take offense, young man," said Vince, "but I think that your time could be better spent putting your artistic skills to good use, rather than learning how to play chess. If you have a livelihood, your Birgit's father will be more likely to favor the marriage, and you can afford to pay that penalty if you lose the 'engagement' game."

Felix shrugged. "In the rest of Germany, your standing in the community is primarily dependent on your ancestry, and your financial situation. But in Stroebeck, a great deal of consideration is given to how well you play chess. So yes, I need to make money, but I cannot ignore the Stroebeckers' board game obsession."

"I understand. Let me show you what you did wrong in the last game." He did so.

* * *

"Dearest Birgit," wrote Felix. "I begrudge every day I must spend here in Grantville, without you. It is purgatory.

"Nonetheless, Grantville has its compensations. First of all, there are no guilds. Can you imagine that? I can sell my work without either paying dues, or waiting for a market day.

"Moreover, my landscape drawings have drawn attention from an unexpected quarter. The school here teaches a branch of natural philosophy which they call 'geology.' It is the study of the Earth. One of the teachers walked by and noticed how accurate my depiction of what they call the 'ring wall' was. I told him about where I have traveled, and the specimens I collected, and he said that the government might be interested in my services. I could make maps, and draw illustrations of minerals, rocks and landforms for the books they are writing, and even perhaps train to be a 'field geologist.'

"Please give me your advice."

Felix entrusted the letter to a friend who had business in the Harz Mountains. In token of his appreciation, Felix sketched the friend's daughter. "Her grandparents in Braunschweig will be very happy

to see how much she's grown!" the friend commented.

The response came a month later. "Dearest Felix, I hope and trust that you immediately accepted this offer. It gives you a reliable source of income, which few artists enjoy. Moreover, it moves you into government circles in which you may come to the attention of greater men, whose patronage can allow you more freedom in what you choose to portray."

* * *

Birgit gritted her teeth. She knew it wasn't proper, but she couldn't help herself. This was the third time in three months that a young man had been invited to her home for dinner. A young,*unmarried* man, of good family and prospects, of course.

One would-be beau was a journeyman smith, who could take over her father's smithy one day. He had been unwise enough to say that he was "just passing through Stroebeck."

"Passing through Stroebeck?" she had asked in mock surprise. "On your way to where? Paris? Venice? Vienna? Moscow? Far Cathay?" Before she was done with him, her victim wished he was in far Cathay.

Another, a clergyman's son, had bragged of having attended the University of Wittenberg. Birgit pretended to be impressed, lured him into a game of chess, and caught him in a four move Scholar's Mate. She then scornfully suggested that he return to his studies if he couldn't outplay a mere girl.

Birgit's father had sternly warned her to be polite this time. Or else. The latest pawn in her father's game of matrimony was even less promising than the first two. He was her second cousin, a merchant's clerk in Leipzig. He was handsome, but boring.

After an interminable dinner, in which he contributed such sprightly conversational tidbits as "pass the salt, cuz," Birgit suggested that they take a walk to the town square together. Her father beamed.

However, Birgit had made her plans. Once they were out of her father's sight, she said brightly, "Oh, we must stop at my friend Barbel's house. She will be so upset with me if I go to town without her." Cuz was agreeable to this detour.

They knocked, Barbel emerged, Barbel batted her eyelashes at Cuz, right on schedule. As the threesome walked, Birgit contrived to fall slightly behind the other two. In town, they encountered Anna. Also on schedule.

Anna suggested that they go visit Max. Barbel demurred. "I have an idea," said Birgit. "Barbel can take our guest to see the Tower, and I will go with Anna. We will meet up at the square when we are done."

Cuz politely declined. "I am here to see Birgit, I can't leave her behind."

"Don't be silly, you have seen me many times before. Like that time when I was seven years old, and I threw up on you." Birgit could see that Cuz had not forgotten that incident.

"It is your duty to escort Barbel." It wasn't very logical, but Barbel was giving Cuz plenty of encouragement. Which Birgit wasn't. He agreed, and they all went their separate ways.

When Cuz proposed to Barbel a few weeks later, it was a surprise to her father, but definitely not to Birgit.

Birgit had removed her father's rook, bishop and pawn from play, but she needed her knight to win the game.

* * *

Felix relaxed into the booth he'd managed to acquire at Tip's Bar. He'd achieved some notoriety, as he was the first down-timer his Grantville friends had met who could say he had been in America. More precisely, who had been in what, but for the Ring of Fire, would have become the United States.

One of his new up-timer friends, Louis Giamarino, bought the first round. "So, Felix, how come you're here?"

"Here in Tip's Bar? I am celebrating the printing of the new geology pamphlet I illustrated." Felix just happened to have a copy with him, which he proudly presented to Louis. It had sketches of the rim wall, with and without the rock formations labeled, diagrams explaining how a topographic map depicted a landscape, and so on.

Louis flipped through the slim pamphlet quickly, and closed it with a snap. "Well, congratulations. But I meant, here in Grantville. I'm telling you, if I could get back to America, I'd go in a heartbeat."

Felix shook his head. "It would not be the America you remember, the America in the twentieth-century books I have been shown. It is mostly wilderness. Beautiful, but savage."

Louis spotted a buddy, Tony Masaniello, and waved him over. "Hey, Tony, c'mere. This is Felix of New York."

"New York?" said Tony. "But you didn't come through the Ring of Fire."

"No, he lived in*down-time* New York. What they call New Amsterdam. But he was born in Holland."

"Really? How'd you end up in America, then?"

Felix took a deep breath. "This is a long story, please stop me if I am telling you too much.

"You have heard of Peter Minuit, perhaps? Herr Minuit was born in Wesel. He patronized my father's bookshop because he, too, was German born.

"In 1625, the Dutch West India Company honored Herr Minuit with the appointment of Director General of New Netherland. He asked my father if he knew of an artist, skilled, yet young enough to risk the rigors of a transatlantic voyage. One who could prepare maps, as well as drawings. Drawings which might intrigue the people back home to invest in the Company, and perhaps even to settle in New Netherland.

"My father, of course, volunteered me! But in truth I was pleased by the prospect of seeing new lands and peoples, and capturing them on paper and canvas. I stayed in the New World for several years."

Felix sighed. He was approaching the painful part. "Then, unfortunately, my patron had a falling-out with his superiors. He was recalled, and I left with him. That was in early 1632.

"Then matters turned from bad to worse. Our ship, the*Unity* , was damaged by a storm, and we had to

seek shelter in the British port of Plymouth. Instead of offering us aid and comfort, the English threw us into prison and seized our goods, my paintings included."

"Why did they do that?"

"The English had the nerve to claim that because Cabot landed in Newfoundland in 1497, that they thereby gained title to all of America, including New Amsterdam. And so all of our American goods belonged to them, not us."

Felix raised his voice, involuntarily. "Unbelievable! Considering that Cabot thought he was on the shores of Asia. And, of course, that he didn't properly map the territory, or land settlers."

"Easy, Felix, don't burst an artery."

"We were released, eventually, but we didn't reach Amsterdam until May of 1632. And I never saw my American paintings again."

Felix shrugged. "I have heard that King Charles is fond of art. He knighted Rubens and Van Dyck, after all. I suppose that my paintings are now in good company, at least."

Felix took a long swallow. "Fortunately, the English thieves didn't think to take my sketchbooks. And, of course, I still own all the artwork that I did before I went to the New World.

"It is really too bad that so much of it is still trapped in Amsterdam. I would like to show Birgit my etchings."

All the up-timers laughed. Felix looked at them confused. What was so funny?

* * *

Hans Wegener normally had his son go to Halberstadt for supplies not available in Stroebeck, but this time he had to make the trip himself. Karl was sick in bed.

Hans had traipsed about more than he expected to; his usual supplier had been out of stock on several items. Hans passed*The Roasted Pig* , and decided to stop for something to eat before returning to Stroebeck.

Hans placed his order, and then noticed that the innkeeper was giving him a strange look. Hans beckoned the man over. "Am I a two-headed calf? Why do you stare at me so?"

"It is just that you look very much like someone who comes here regularly."

"A younger man? Perhaps an inch taller than me, but a similar build? Big frontal lock of hair, always askew?"

"Yes, that's the one. His name is Karl."

"That's my son. He's sick today. I am in town in his stead."

"Ah, then you'll be wanting his mail."

Mail?

Rummage, rummage. The innkeeper found what he was looking for. "Here you are." He extended his hand for a tip, and Hans grudgingly gave him a small coin.

Hans studied both sides of the letter, then held it up to the light.*Enough* , he thought. He broke the seal, and read the letter. His face purpled.

My son! My daughter! In cahoots with that artist! I'll disown them! And I'll throttle that Felix!

Wait. I have a better idea."Are you a father?" he asked the innkeeper.

"Why, yes, I am. Why do you ask?"

"Your son, or daughter, ever do anything foolish? Despite your warnings?" Many times, the innkeeper assured him.

"Well this letter writing, it is about something foolish. And parents must look out for each other in these situations. So what I would like you to do is this. If any other letters come in for Karl, you tell him nothing, but hold them for me. And I will come by, from time to time, and pay you a silver piece for each one. Also, if Karl has any letters to send, you accept them, but don't send them on. I will buy them back at the same price."

Whether driven by parental solidarity, or professional cupidity, the innkeeper agreed.

That's that, thought Hans.*Check!*

* * *

Vince had told Felix that he was happy to hear that the Stroebeckers had offered Felix the choice of playing either the old or the new versions of chess. That meant that when Felix returned for his rematch, he could insist on the rule of the mad queen, which in turn would mean that he would have the full benefit of several hundred years of chess analysis.

What Felix hadn't been prepared for was just how confusing those chess manuals were. Reading them was like reading Egyptian hieroglyphics. If anyone actually could read them, that is; Felix was vaguely aware that Athanasius Kircher, the famous Jesuit scholar, had been working on that project.

Hours of poring over those manuals. Hours of playing chess at the club. The only thing that had kept Felix motivated was the thought of how much it would mean to Birgit if Felix could win her in the traditional Stroebecker fashion. Every time he read one of her letters, he felt inspired, and returned to his studies with renewed vigor.

Talking about letters . . . why hadn't she written recently? It had been . . . weeks. Had she found someone else? What could Felix do to remind her of his love?

Felix started rummaging through his room. There it was, his most precious sketchbook, the one he used in Halberstadt those few months ago. Now he needed a piece of wood. But wait. He could draw what he wanted readily enough, but he didn't have time to cut away all of the wood save for the parts he had drawn upon. Well, suppose he cut away the lines. That would print as white lines on black. Strange, but all that he could do in the time he had. Felix went to work . . . .

* * *

Birgit was fretting. This coming Saturday would be exactly six months since Felix' ill-fated first chess game. Thus, it would be the first day on which he could formally demand a rematch in order to win her hand. But she had not gotten a letter from Felix in weeks.

Will he come? He said he was doing well in Grantville. He has illustrated a book. His last letter said that he met a duke, one who writes and collects books, and wants Felix to illustrate his latest work. So Felix now has commissions. Patronage. Will he want to leave?

He must be meeting rich merchants, and noblemen. And their daughters. He also wrote that he is giving art lessons in some sort of academy. Are those daughters taking lessons from him?

Birgit had a sudden mental picture of how such a lesson might evolve. The rich merchant's daughter pleads that she doesn't know how to hold the paintbrush. Felix comes behind her, and guides her hand with his own. Urgh!

He hasn't mentioned any girls in Grantville. Is that because he hasn't met any he likes? Or is he avoiding the subject? Perhaps he doesn't want to hurt my feelings, tell me that he has found someone else.

No that can't be. He loves me. On Saturday morning, I will climb the stairs of the Wartturm, the old tower where Bishop Arnulf imprisoned Duke Guncellin centuries ago, so I will see him as he comes up the road. And I will do it every Saturday morning, until he comes.

If he comes. He has traveled all over the world. What can he see in a girl who never traveled farther than Leipzig?

But no. He sees more than my pretty face. He enjoyed talking to me. He values my advice. He will come.

She trembled.*What will I do if he doesn't come?*

* * *

It was Monday, and Birgit wasn't surprised to hear a knock at the door. It was her friend, Anna. Birgit had been forbidden to go to Halberstadt, so Anna was Birgit's news source.

Her mother was out in the garden, and her father and brother were in the smithy, so they had some measure of privacy.

"Look what I have," said Anna. What she displayed was a white-on-black print, depicting three women and a man. Birgit gasped. It was virtually the same picture that Felix had drawn of Birgit, Anna, Barbel and himself, months ago. In fact, it was titled, The Judgment of Paris.

"Where did you get this?"

"Apparently they arrived in Halberstadt a few weeks ago. Went to one of the booksellers first, and they have been circulating since then."

Birgit snatched the print out of Anna's hands.

"Hey, I'm in it, too!" Anna protested.

"You know what this means? It means that Felix hasn't forgotten me." Birgit sighed with relief. "Perhaps he*will* be here this coming Saturday."

* * *

"So," said Hans Wegener jovially, "let's play chess. Sooner we play, sooner you lose, sooner you leave, sooner my Birgit marries someone worthy of her." Hans and Felix were in the town hall, where "marriage matches" were traditionally held. A large crowd had gathered to watch; such a match was a big event even under ordinary circumstances. But to see a rematch with an insistent suitor? One vehemently opposed by the father? Only the dead of Stroebeck were not in attendance. Felix' eyes went to Birgit, who, taking advantage of her father being turned away from her, blew Felix a kiss. Felix blushed.

Hans pulled out a chessboard, and began setting up pieces. Felix wasn't too worried. He had spent a great deal of time playing chess with up-timers and down-timers at the Modi's Inn, solving chess problems in a book he had been lent, and reading books on the theory of the game. He had even been given the opportunity to spend some hours battling Josh Modi's "computer chess program."

Felix smiled at Birgit, and then mentally reviewed the opening repertoire he had been taught. He didn't pay much attention to Hans' movements until Hans leaned back in his chair.

Suddenly, Felix did a double-take. The board was too long. It was twelve squares by eight.

Hans caught Felix' look of dismay. "Haven't seen this one before? It is courier chess. Very old, dates back, oh, almost to the time of Barbarossa. You don't know it? Here are the pieces, rook, knight,*alfil* , courier,*mann* , king,*fers* ,*schleich* ,*courier* ,*alfil* , knight and rook. And twelve pawns in front. We each begin with the same four moves. Oh, no castling, assuming you know what that is." Hans smiled broadly.

"This is unfair," Felix protested.

Hans shrugged. "This is a traditional game."

Felix appealed to the Mayor. "This form of chess is not traditional where I come from. It is not fair that I have to play it."

The Mayor harrumphed. "It is not played in the Low Countries, perhaps, but it is played in Germany. And most certainly in Stroebeck."

"But isn't Herr Wegener challenging me? In dueling, the challenged one has the choice of weapons, so I should have the choice of chess board and chess rules." Felix was worried. Different board, different pieces, forced opening; it undermined all his hard-won twentieth-century chess knowledge.

The crowd murmured. At this point, Birgit's quiet lobbying paid off. Her ally, the minister, said, "that seems reasonable to me." Hans scowled at the churchman. The latter added calmly, "Surely, Herr Wegener, your chess skills permit you to make this concession."

"Oh, very well." The Mayor offered Hans a more modern-appearing chessboard, and Hans set up the pieces. Felix then carefully explained his assumptions as to how all the pieces moved, when and how a

pawn could be promoted, and, exactly how castling was performed. Felix*had* been warned how many different castling variations were practiced in his time.

"A chess lawyer," Hans commented. Hans pulled a pair of pawns, white and black, off the board. "I don't believe that the challenged in dueling has the right to shoot first." He put the pawns behind his back, shuffled them about, then brought both fists forward. "Pick your ill-fated army."

Felix tapped Hans' left hand; Hans opened it, revealing the white pawn. Felix would move first. Felix had questioned Duke Augustus, a down-time chess author who occasionally visited the Inn of the Maddened Queen, as to what openings and defenses were favored in the seventeenth century. Felix' up-time friends had helped him pick out and study an opening repertoire which would give a down-timer a shock. But they had warned him that it would only take him so far; he had to be able to improvise if he wanted to win against a good opponent.

In quick succession, the artist and the smith each moved out their king pawns. Felix attacked with his kingside knight; Hans defended with its queenside counterpart. Felix moved out his Bishop to the fourth rank.

Hans raised his eyebrows. "Well, someone has been giving you lessons. It is the Italian Game. I know it very well indeed." He, too, moved his bishop to bishop four.

Felix responded with Pawn to Queen Knight Four, offering his pawn up to capture by his opponent's bishop. It was the first move of the Evans Gambit, the darling of the great attacking players of the nineteenth century. According to all Felix' sources, it was unknown to the chess fans of the seventeenth century. Felix was nervous, however. How complete was the Grantville Chess Club's knowledge of seventeenth-century chess? They hadn't warned him about courier chess, had they? Could the Evans Gambit be well known to Hans?

"Pawn pusher!" said Hans with delight. "Didn't you see my bishop?"

Felix was also pleased, but concealed his reaction to Hans' outburst. He knew the story behind the Evans Gambit. Its inventor, Captain Evans spent many hours playing it against himself, and finally sprung it on the British champion, MacDonnell. Evans won; it was a great upset.

The gambit's great merit was that it allowed for powerful attacking combinations in the middle game. The problem was that if Black survived the onslaught, and held on to the gambit pawn, then he had the advantage in the endgame.

If Felix hadn't earned enough from his work in Grantville to pay the forfeit, he wouldn't have dared play the Evans Gambit. But the goal now was not really to satisfy Stroebeck traditions, but to impress Birgit's poppa. And that would more likely be achieved by bold attacking play, than by a cautious strategy.

Felix constructed a strong pawn center, and attacked vigorously. Hans tried to counterattack, and did not deign to protect his king by castling. He soon regretted this oversight.

"Mate in three," Felix announced. He smiled at Birgit, who gave him a thumb's up.

Hans studied the board, then sent it crashing to the floor. "Why must I lose to this idiot?" he complained. Clearly, the Evans Gambit had won Birgit's hand, but not Hans' approval.

Birgit glared at her father. "That is no way to speak about my fiancé."

"That was an interesting game," the mayor commented. "I wish we had a way of reconstructing it."

Felix saw an opportunity to earn a few brownie points. "Actually, there is a method. In Grantville, where I am working now, the chess players have recorded thousands of chess games. I could teach the people of Stroebeck how to read these records, and how to notate their own games."

"Thousands of chess games? The commoners play chess in Grantville, too?"

"Anyone can play chess in Grantville. And they have records of chess games from hundreds of years of play." He looked slyly at Hans Wegener. "I could bring one of their chess books for you, Herr Wegener. It is the sort of thing that a dutiful son-in-law would do."

"That is . . . thoughtful of you," said Hans. He paused. "I would like to have a few minutes to speak to my daughter alone."

"Of course," said Felix. He was confident that nothing Hans could say could diminish Birgit's love, or persuade her not to marry him, now that Felix had broken down the barrier set by Stroebeck tradition. His only fear was that Hans might do something foolish, like try to carry Birgit off against her will.

Hans and Birgit went into an alcove, and Hans addressed his daughter. "I still don't like the idea of your marrying a painter. Yes, I know a few are honored and rewarded beyond measure by princes. But how many die forgotten, in poverty?"

Birgit stared at her father. "I have seen his work. It is very good. And it has been well received in this town of Grantville, which stands high in the regard of Gustavus Adolphus. True, he is poor right now. But he has good prospects of advancement. And, here in Stroebeck, we have a name for taking a reasonable risk, don't we? It is playing a*gambit* , yes?"

Her father nodded, slowly.

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Dear Sir

by Chris Racciato

Dear Sir:

You do not know me, but a mutual acquaintance has assured me that you are a man of superior

integrity and utmost discretion. It is because of this that I approach you in my hour of most desperate need.

My name is Kent Ketchum, and I am a resident of Grantville. I was brought here to this time and place by the hand of God in the event now known as the Ring of Fire. It was to my great misfortune that both of my parents were left behind. I am left with a terrible dilemma. My father, the Honorable Will Ketchum had a substantial contract to build roads for the state of West Virginia. The work had been completed already, and the funds were deposited in the Bank of Grantville two weeks before the tragedy struck us. Without my father here to claim these funds, they were held in an escrow account until the legal system here decided whom they belonged to. As I was under eighteen years of age, I could not yet legally inherit it. And I have no relatives available to help with me with my predicament. I have been living like a beggar on the pittance of money allowed to me by the Bank Manager. Within the last month I have discovered that the Bank Manager and the Judge in charge of my case have been conspiring to steal my father's money out from under me. They had my father declared officially dead, but did so in such a way that prevented me from hearing about it until it was almost too late. Had it not been for a most Christian woman who works at the bank, I would not have found out what had happened until after the money was gone. The evil men that seek my father's hard earned fortune do not know that I have learned of their nefarious plans, so I must make my moves quietly and discretely if I intend to recover the money. I must raise one tenth of the total amount in the account in order to pay the taxes and free the money from the escrow account. If I fail to do so by my eighteenth birthday next month, it will all be declared forfeit, and be given to the Bank and the Government.

This brings me to why I am secretly contacting you. There is no possible way that I could earn that much money on my own in so little time. So I am willing to offer you a quarter of the 2500 guilder equivalent account if you would be able to help me pay the required taxes before the account expires. In addition, I would fully refund your two hundred fifty guilder investment as soon as the money in the account has the legal hold removed from it. Because both the Bank Manager and the Judge are involved, I would ask that you speak to no one of my dilemma and offer, lest they hear about it and realize that I know what they are doing. If they do, they will surely do everything in their power to thwart me and keep the money for themselves.

I thank you in advance for your assistance, and for taking the time to read of my plight. If you are unable to assist me, I do understand. But if you are willing, then I look forward to a highly profitable future for both of us.

Sincerely,

Kent Ketchum

Officer Ralph Onofrio put the letter down and massaged the bridge of his nose. It was going to be one of those days. He found it almost impossible to believe that anybody would be gullible enough to fall for so obvious a scam. But he had long ago learned never to underestimate the power of greed. People were more than willing to talk themselves into doing anything if they thought that there was easy money to be made.

A clear case in point was the indignant nobleman in front of him. He stood there in front of the desk at the police station shouting at his poor interpreter and gesticulating wildly. From what the interpreter had said, the*Ritter* had sent the requested funds to a post office box here in Grantville. And then never heard

back from the young mister Ketchum about getting his reward for helping him.

He sighed and turned to the man's interpreter. "Can you ask him if he has any other information about this Mr. Ketchum other than the address?"

The interpreter, a young man named Wenzel, spoke in rapid-fire German to his employer. The nobleman spat answers back even faster. Between the speed and dialect, Ralph barely caught a fraction of what was said. He was forced to wait until the tirade wound down.

"He said that he never actually met Herr Ketchum, but they have had a written correspondence for several months now. He has brought all of the letters with him to prove it." Wenzel handed a thick sheaf of papers to Officer Onofrio.

"And is there any particular reason that he sent two hundred fifty guilders worth of gold coins to person neither of you had ever seen? Wouldn't a bank draft or letter of credit have been safer?"

"As I told you before. We were planning to do so. Herr Ketchum insisted on it for our mutual assurance. But in his last letter he expressed his concern that the manager of your bank was becoming suspicious. It would not do to have all of our careful planning undone at the last moment. Herr Ketchum said that we might have to, I believe the term he used was 'call the whole thing off.'"

"So why didn't you?"

"The*Ritter* insisted. We had come so far. He didn't want the boy's inheritance to be stolen."

"Mmmm hmmm . . . And lose his share of the money?"

"Well, he was going to be making a substantial investment. Besides, the boy said that he was happy to pay some of the money not to lose it all. So the*Ritter* sent the gold by courier."

The*Ritter* spun Wenzel around by his shoulder and began shouting at him again, pointing first at the letters and then at Officer Onofrio. Wenzel nodded when he was done and turned back to the police officer. "The*Ritter* von Dingelberg demands that Herr Ketchum be brought here immediately, and be forced to pay the money he promised. The total was agreed to in the last letter."

Ralph took a deep breath and rubbed his face wearily with his hands. Definitely one of those days. "I would truly love to get my hands on your Mr. Ketchum. But I'm afraid that it would be next to impossible."

The young man blanched and relayed this information to the*Ritter* . The nobleman turned purple as he listened to his translator, and began shouting and pounding on the desk. As he sputtered to a stop, Wenzel turned to Officer Onofrio.

"The*Ritter* would like to know why you will not bring this boy in. He owes a substantial sum of money. The*Ritter* was under the impression that no one was above the law here. Not even someone who now has a large fortune at their disposal. Part of which, I must add, does not belong to him."

"He's correct. Nobody is above the law here. And I'm sure that there is money due to your employer. The problem is that the boy doesn't exist."

If Wenzel had gone pale before, he went positively ashen when he heard that. "W-w-what?" he

stammered.

"This isn't the first complaint that we've had about this." He opened a file from his desk. "We have had several other people show up here looking for Mr. Kent Ketchum. Or Ms. Ida Ketchum. Or Ms. May B. Ketchum. Or any of about a dozen other names. The post office box that your employer sent the money to is a mail drop. It gets forwarded to a house in Jena. We talked to the old couple that lives there. They gave it to a wandering tinker twice a week. From there, we lost the trail. Nobody knows where the tinker went. He hasn't been seen in a couple of weeks." he paused. "I hate to tell you this, but it was a scam. Any money he sent is long gone."

"A scam? What do you mean?"

"I mean that your boss there was taken for a ride. He was duped. There is no Mr. Ketchum. There is no money being held by the government. There is no evil bank manager or judge. Our laws don't work like that. Anything that belonged to the people who were left behind was given to their next of kin within a few months of the Ring of Fire. The only money in this whole deal is whatever your boss put in. We caught a couple of junior high school students trying this out for fun about six months ago. They were all busted, and forced to give the money back. But it looks like somebody else has gotten into the same racket since then. It was an old scam up-time."

Wenzel translated all of this to his employer. The man's mouth worked open and closed like a fish out of water. After Wenzel was finished, the*Ritter* shook his head and started to walk out of the station.

"Hey, wait!" Ralph called after him. "You need to make a statement."

Wenzel translated, but the Ritter didn't even slow down. He muttered something in German and waved over his imperiously shoulder to his man. And with that he was gone.

"What did he say?" Ralph asked.

"He has empowered me to handle it," Wenzel replied glumly.

"Isn't he going to make a statement?"

"No. He will not be making a statement. Or pursuing this matter any further."

"Why not? He has more information than anybody else has come forward with."

"The*Ritter* told me to make this whole thing disappear. It never happened."

"I don't understand. What do you mean? He came all this way. Why can't he help us catch these guys?"

"I would not presume to speak for the*Ritter* on this matter," Wenzel replied somewhat lamely. "But if I found out that I had been tricked out of a substantial amount of money by what was nothing more than a childish hoax, I would not want that fact widely known."

"So he's just going to walk away from all that money? And let them get away with it?"

"If he leaves a statement, it will eventually become a matter of public record, no?"

"If we ever catch the guys, yeah. It'll come out in the trial."

"I think he would like to, how do you say it? Cut his losses now."

"Okay. If that's the way he wants to do it. You might suggest to him that the next time something seems too good to be true, it probably is."

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The Sons of St. John

by Jay Robison

The wind blowing in from the Atlantic was cold. It often was on the west coast of Scotland, even in summer. The crude stone shepherd's hut where Brother Aidan and his three fellow monks sat kept the wind out for the most part, but it was far from warm and cozy.

He glanced around nervously at the three other men in the hut with them, all in their plain brown homespun robes and with heads that were shaved except for a patch of hair on the crown. This patch of hair was grown into a spectacular topknot. In the case of Brother Aidan that topknot had grown to nearly waist length.

Not for the first time, he questioned the wisdom of so many of the brothers gathering in one place. They were monks of the Celtic mission, quite possibly the last in the world. For the last four centuries, ever since the murder of Bishop Primus and the takeover of the Iona monastery by the Benedictines, their spiritual traditions had been all but wiped out. It was only due to people of the Hebrides—stubborn even by the generous standard of the Scots—and people like Brother Aidan, who continued to practice the ways of Celtic Church in secret, that the traditions begun by missionaries such as Pelagius, St. Patrick, and St. Columba lived on.

"You are sure he is trustworthy?" one of the other monks, Brother Oran, asked. "If we were to be found . . ."

"Finlay Robinson has fed, even sheltered the men and women of our order since before you or I were born. If any man is to be trusted, it is he." Aidan's voice held a calmness he did not feel. The Presbyterians were, if anything, even more determined to exterminate the old ways than the Roman church had been. Finlay Robinson was as tough an old man as walked God's earth, but information sometimes had a way of slipping out.

Aidan held his breath when the sheepskin he'd lashed to the hut's doorframe was pushed aside. He and the other brothers audibly exhaled when his friend entered, alone. He was something of a romantic figure

in these parts, because he'd been all the way to the east coast of Scotland, having taken service with Robert Mackay as a young man. The fact that Finlay Robinson had been as far away as Edinburgh was considered remarkable. More important, from Aidan's point of view, was that he worked hard to keep the old ways alive, and the brothers had rewarded that loyalty by making Finlay the guardian of its most precious possession.

"Finlay," said Aidan. "You surely are a sight for sore eyes. It's been a long time since we've seen each other."

"I went to pay my respects to Robert Mackay. He's . . . not well."

"I will remember him in my prayers. It was good that you went to see him." Aidan knew that this was not why Finlay had been so insistent they meet, and waited for the old man to continue his story.

"He was a good man, and has led a good life. God willing, he has a little life yet left. But I also chanced to speak to Robert's son Alex. And his wife. A most unusual lass."

"Unusual?" asked Brother Dunstan. "In what way?"

Finlay laughed. "I would say she's unusual in every way. When she wields that strange musket of hers, she might as well be Boadicea reborn. But it was the news Alex and his bride brought with them from the Germanies that I needed to give to you. I don't suppose news of the Swede's exploits have reached here?"

"Vague talk, but nothing that seems creditable," said Aidan.

"Alex was in service to him. He says Gustavus has set up an empire for himself in the Germanies, but it is a most unusual empire. According this Alex's wife—the lass's name is Julie—her people, the Swede's allies, persuaded him not to have an official church."

"No church?" Brother Oran sounded half-disbelieving, half-scandalized.

"None," said Finlay firmly. Too firmly for Aidan, at least, to think he was lying. "Presbyterians live alongside Lutherans, Catholics, Jews . . . it seems every sort of belief is represented in the city of Julie's birth."

"Then, they would accept us?" Aidan's voice came out as a faint whisper. It was as if voicing his hopes aloud would dash them.

"Alex and Julie Mackay both said yes. Robert Mackay is a tolerant man in many things, but he would not accept a lie from his son. If Alex says it is true, it is true. If you desire to go to Grantville, I will see to all the arrangements."

Dunstan, Oran, and the third monk, Brother Colman, all looked at Aidan. He was not the oldest of the brothers, and he certainly did not consider himself the wisest of them. But though he chose not to use the title, Brother Aidan was also Bishop Aidan, chosen by his fellow monks and nuns (the few still left) in the hope that some day, he could ordain new clergy of the Celtic mission and revive their church. It also meant that the decision to stay or go was his.

The uncertainty in the eyes of Aidan's fellow brothers contrasted with the fire in Finlay Robinson's. Aidan did not like the idea of leaving the place where he'd lived and ministered all his life. But if the dying

embers of the Celtic Church could be once more fanned into life, however far away, perhaps Aidan's successors could return, living and preaching openly.

He embraced the old man who'd done so much for them. Finlay would not fail them in this.

"That is good enough for me, Finlay. Make the arrangements and contact us when they are complete."

* * *

Reverend Enoch Wiley felt old. It was a hot day, and he'd done quite a bit of walking. Young Martin Riddle, who walked next to him, kept casting concerned glances his way. I'm his father's age, Wiley thought sourly. Maybe I'm a reminder that Chuck's getting old, too.

If he was being honest with himself, Enoch had to admit that he didn't feel well, and hadn't felt well for a while. Maybe it was the stress, he thought. Of all of Grantville's clergy, after the Ring of Fire only Larry Mazzare's pastoral responsibilities had increased more than his own. Between the influx of Scottish Presbyterians and Central European Calvinists, the Grantville Presbyterian Church was easily twice as large—if not more—than it had been before the Ring of Fire.

It was enough to age anyone before their time, even if they were married to someone like Inez, who seemed to have bottomless stores of energy. And the reason for this trip wasn't making Reverend Wiley terribly happy, either.

Donald Ogilvie had been a member of Grantville Presbyterian since shortly after arriving in town as a member of Mackay's troop. Ogilvie and the minister had struck up a particularly close relationship; the Scots veteran was about the age Wiley's son John Enoch would have been. John had been left up-time and while no one could ever replace him, the young Scotsman did partially fill a hole in Wiley's life. Donald had been a founding partner in the Thuringen Gardens—when Wiley first met him, he proudly proclaimed himself as the bouncer—but had cashed in that partnership to buy a small piece of land and launch a number of business ventures, none of which came to anything. When Ogilvie's money ran out, Reverend Wiley had helped him get a job as a construction foreman, where he'd done very well and allowed the young man to pay off his debts without having to sell or mortgage his land.

Tragically, Ogilvie had been killed not quite a month ago, breaking his neck after falling from his horse. The only possession he'd had worth speaking of was his land, and he'd left it to Enoch Wiley's church.

Martin was here because he did*pro bono* legal work for the Presbyterian church. It was something of a Riddle family tradition, as both his grandfather, Thomas Price Riddle, and his father, Chuck Riddle, had given Reverend Wiley legal assistance before the Ring of Fire. This despite the fact that the entire Riddle clan was Episcopalian. Martin's father had once said that this was what members of a community did for one another. With Thomas's health quite fragile these days, and with Chuck taking over as chief justice for Thuringia-Franconia, this job fell to Martin. He didn't seem to mind though. He said it was a nice break from his work as a public defender and gave him some experience in different areas of law.

They finally reached the spot. Lothlorien Farbenwerke was barely visible behind them.

"Here it is, Reverend Wiley," Martin said. "Here" was several acres of scabrous trees and scrubby grass that adjoined the old Lothlorien Commune. Ogilvie's sense in buying real estate had been little better than his business sense, it seemed.

"What did Thurman Jennings say?" Jennings was the top seller of commercial real estate in the area, and

had looked over the property at Martin's request.

"He said that it wouldn't generate too much interest from anyone looking to buy a farm," the young lawyer said. "The property's too hilly and as you can see, the soil out here isn't great. And right now, it's too far from utilities to make it worth anyone's while to develop commercially. Maybe someone'll want a country seat or something. Who knows?"

"So it's basically worthless?"

"No," Martin said slowly, marshalling his thoughts. "Given the real estate market in this county right now, no land is truly worthless. This particular piece just isn't as valuable as some. If you do want to sell it, we can see if Lothlorien's interested, but I'm sure that would have to wait until Tom and Magda get back from Italy."

"It'll keep, I suppose," Reverend Wiley said. "We'd better get back to town; Inez will kill me if she thinks I'm overdoing it."

Martin nodded, and the two of them started walking back to Lothlorien, where they hoped to get a ride into town.

* * *

The ride back into Grantville was mostly silent, for which Enoch Wiley was grateful. Inez had been gently chiding him about his dark mood these last few weeks, reminding him that he was no fit company like this. He was trying to shake it off, but without success. This inner bleakness was even starting to creep into his sermons. He found he had to make a great effort to cut back on gloom, doom, fire and brimstone.

Donald Ogilvie's death brought out into the open a sadness that had been growing inside Enoch Wiley for months now, ever since he and Inez had agreed to act as guardians for Idelette Cavriani during her stay in Grantville. Idelette was not the cause, however, merely the catalyst. She was staying in their son John's old room, which had accumulated a number of books and other things Enoch did not use much but didn't want to get rid of. At Inez's tireless prodding, he finally sorted through all the boxes. Except for one box, now in his study, that he refused to open. He knew what was in there, and avoided confronting the feelings he knew it would bring. With the death of young Ogilvie, however, those feelings could no longer be held at bay.

Enoch forced his thoughts back to the present, to a pleasant and sunny summer afternoon. Martin Riddle was absorbed in case notes and Angus Gunn, who drove the cart they were riding in, seemed lost in his own thoughts. He'd had business at Lothlorien and had offered Enoch and Martin a ride back to town. The burly Scotsman was an enigma to Enoch Wiley. He was quite friendly and outgoing, and attended services at Wiley's church regularly. He didn't have a steady job, but managed to make enough for a small room and to have free time to spend outdoors. Angus was an artist of some talent, Enoch understood, especially when it came to drawing things like buildings, natural formations, or fortifications, a talent he'd developed as a scout in Gustavus Adolphus's army. He was quick to do favors for people, as evidenced by giving them a ride back into town from Lothlorien, but despite all that, Enoch sensed that there was a part of Angus Gunn that was closed off. Something spiritual, since his attempts to initiate spiritual discussions with Angus generally went nowhere.

Martin got dropped off first, his offices being closest to the dye works. Angus then dropped Enoch off at his home. Today was Monday, and the church offices were closed. Inez gave him a hug when he walked

in.

"You look like you got a little sun today. You need to be careful, as easily as you burn."

Enoch smiled at his wife and sat down. "I don't know what we'll do with that land. It's not exactly prime real estate, from what Martin says."

"Well, that's not surprising. Donnie was a hard worker but not overly blessed with practical sense," Inez said. "He'd never gotten that share in the Gardens if he hadn't been able to speak German."

"True. But I don't know what the church will do with it."

"Trust God, Enoch. He'll bring the right opportunity at the right time. You know He will."

"True enough, dear." Enoch heaved himself up with a sigh. "I think I'll go to the study for a while." Inez gave him a look that spoke volumes. "What?"

"Enoch Wiley, you know what. You need to go talk to someone. You keep promising me you'll get out of this mood you're in, but I don't see any signs of it. It's not good for you."

"I will, when I have time."

"You need to make time."

"I'll see what I can do, dear," he said, studiously ignoring Inez's disapproving frown and climbing the stairs to his study.

He closed the door behind him and went to the box he'd been avoiding opening for so long, and opened it. On top was a book entitled*The Whole Earth Shall Cry Glory* , written by George MacLeod, a prominent Scottish theologian and moderator of the Church of Scotland in the 1950's. The book had been a gift from his son, John Enoch Wiley. Enoch's eyes went from the book to the picture on his desk, a picture taken less than two months before the Ring of Fire. John stood proudly in his black habit. Inez, standing on her son's right, smiled just as proudly but Enoch couldn't help but remember how strained his own smile had been when that picture was taken. It was then that John had given him George MacLeod's book, one more attempt to bridge the gap that had grown up between them, one more attempt by the son to help his father understand the path he'd chosen.

To his everlasting regret, Enoch Wiley had not read the book before the Ring of Fire permanently separated him from his son, and since then he just could not bring himself to look at it. He knew he would have to read that book sometime, along with other books John had given him over the years that he'd barely looked at: works by Thomas Merton, Keith Miller, J. Philip Newell and others. But as the emotions he'd kept down so long threatened yet again to rise up, Enoch Wiley knew that he could not look at this box, not today.

* * *

It had taken months for the details of the brothers' journey to come together. Aidan had never been entirely sure how many of their order there were in the western Hebrides, and he could only locate two others in addition to those present when he'd met with Finlay Robinson. Sister Hilda, who took her name from the woman who'd presided over the Synod of Whitby, and Brother John Scotus were both together. Sister Hilda was caring for the older monk in what was clearly John Scotus's last illness.

"You go, you and the other three. I can't leave Brother John here, and I am too old in any case. It is fitting that I stay behind."

"Do you know of any others, Hilda?" asked Aidan.

"No. There was Sister Margaret, but she passed away last spring. She got a chill on her stomach and never got well. She was the only other I knew about."

"I see."

"Aidan, are you going to take back the treasure? Take it with you to this Grantville place?"

"Finlay says he can arrange it."

"You should. God willing, war won't come here, or to where the treasure is kept safe. But if there's a place that would be even safer, you should take it."

Aidan nodded. He'd been inclined to take the treasure with him; Hilda's counsel all but settled the matter. But between the time it took Finlay to get the treasure from the place where it was kept and the time it took to arrange affordable passage to Europe, it was late spring before Aidan—accompanied by Oran, Colman, and Dunstan—left for Hamburg on a Venetian-flagged freighter. Once they arrived in the Swede's empire, which called itself the United States of Europe, the necessity of paying for room and board with labor added quite a bit of time to their journey to Thuringia. It was late summer before the four Celtic monks finally arrived in Grantville.

Aidan, at least, decided to test the city's tolerance. He drew back the hood of his robe, displaying his topknot. If there were hostile religious authorities in this place, he would bring their wrath on himself, and hopefully allow the other brothers a chance to escape. In the end, however, no agents of the Holy Office or any local inquisitions, or representatives of the various Protestant churches, interfered with them. They drew some curious stares, but there was no overt hostility.

Once in Grantville, Aidan was at a loss as to what they should do. They needed to find a place to stay, and jobs to earn their keep. Modest as their material needs were, they couldn't survive on nothing, and Aidan hoped, in time, to earn enough to start a small church. If things went very well, perhaps he would live long enough to see a monastery founded, but that would require a patron with the financial means to buy or lease land and to pay for the construction of an abbey.

"The grace of the love of the skies be thine, the grace of the love of the stars be thine, the grace of the love of the moon be thine, the grace of the love of the sun be thine."

The familiar prayer, spoken by a strange voice, jolted Aidan from his thoughts. A tough-looking man, definitely a fellow Scot, stood before him. The stranger had a weathered but not unkind face—clearly he was someone who spent much time outdoors—and Aidan thought he could see echoes of Finlay Robinson in it. At first the monk thought his eyes were playing tricks, then he took in the tartan on the stranger's kilt. The tartan proclaimed him a Gunn, a kinsman (probably distant) of his friend, since the Robinsons were a sept of the Clan Gunn.

More important at the moment, though, was that there was at least one person in this town of strangers who knew one of the traditional prayers.

"That one is one of my favorites. I am Brother Aidan." He introduced the other three monks. The stranger introduced himself as Angus Gunn.

"I'm afraid, Angus, we are at a bit of a loss," Oran said. "We have no work and nowhere to stay."

"You can stay with me, at least for a few days," Angus said. "Until you find something more permanent. Same with work. I am afraid we will be rather cramped."

"We're used to modest living spaces," said Aidan with a smile. "We have only our robes and this." Aidan indicated the carefully wrapped bundle he carried. "Are you sure this will not be an imposition?"

Angus's only answer was to reach inside his shirt and bring out a small wooden cross, one he wore on a chain. Aidan looked at it and nodded gravely.

"A fine likeness of St. Martin's Cross. Wherever did you get it?"

"I made it. At least, I sketched it, and got someone to carve it for me. I visited Iona as a young man, before I started soldiering. Brother Aidan, it would be an honor for me to help you, and no imposition."

They stayed with Angus for the next few days. Manual labor jobs were easy to come by. This Grantville place, and other cities nearby, was expanding rapidly. Strong backs were needed for many construction projects. Oran and Colman both found work on a construction crew, and Brother Dunstan was hired at a coal mine outside the city. After his second day at work, Dunstan reported that rumors had them all being Buddhist monks (from their hair, apparently), despite the fact that none of them looked the least bit Asian. Apparently Brother Dunstan's new fellow workers thought it was funny too, and a few had started to join him in prayers before shift, even as they nicknamed him "Jackie Chan."

Aidan had wanted to get work as well. He was a silversmith by trade, having completed his apprenticeship before becoming a monk. However, the other three monks insisted he find lodgings, and if possible, a small worship space. After several promising possibilities came to nothing, Angus suggested a final avenue of approach.

"Reverend Wiley may be willing to let you and the others stay at his church, at least for a short time."

"Are you sure he will not have any objections? I am beginning to be convinced that these 'up-timers' are serious in their notions of universal tolerance, but there are limits in all things."

"That will not be a problem, Brother Aidan," Angus replied. "I remember not long after the Ring of Fire that Reverend Wiley gave shelter to a Benedictine monk in need of a place to stay in Grantville. I was still in Colonel Mackay's service at the time, but I understand they developed a mutual regard."

"I trust your judgment, Angus. Let us go see Reverend Wiley."

* * *

Enoch looked up, annoyed, when he heard the knock. There were a thousand things to do, and never enough time to get them all done. And he had a meeting with Martin before lunch, over the land. Though he would never say it to anyone, not even Inez, he was beginning to feel that Donald Ogilvie's bequest was more trouble than it was worth. That thought brought with it guilt, at the anger towards a young man that, in some ways, had eased the pain of separation from his children left up-time, and the pain at seeing how his son Will had turned out.

His irritation subsided a little when Angus Gunn opened the door. The man would not come if it weren't important. Then he saw the man standing behind Angus.

Though the robe was brown homespun, not factory-perfect black, and the monks of the Society of St. John the Evangelist certainly did not wear their hair in such an outrageous fashion, it was enough to send a knife of anguish right through Enoch Wiley's heart. Though this stranger didn't look anything like his son, what got to Enoch was the similarity of manner between John and monk standing in front of him. They both had a sense of serenity that shone through from whatever inner reserve it sprung from. No doubt this new fellow was from yet another Roman Catholic holy order.

"Angus, this is a pleasant surprise. What can I do for you?"

"This is Brother Aidan. Bishop Aidan, actually. He's newly arrived in Grantville and needs a place to stay. He and three monks with him."

"Bishop?" Enoch looked at Aidan. He sure didn't look like a bishop. From what his down-time parishioners and people like Melissa Mailey had said, the higher Roman Catholic clergy in this time lived like princes—more than a few had the secular title to back up the lifestyle. This Aidan fellow certainly didn't look like a prince. And Aidan certainly wasn't a German name, it was Irish, if Enoch was recalling correctly. Maybe he'd been driven out of his bishopric locally, after being installed from Rome? Or was on the run from whatever was happening in England? Who knew?

"Are you returning from exile, Bishop Aidan? Perhaps you should talk to Father Kircher at St. Mary Magdalene's."

Aidan smiled, a little pained, Enoch thought.

"I generally prefer to go by Brother Aidan, as my church consists of only myself and only five other monks and nuns, so far as I know. A few people, like Angus here, have remembered our traditional prayers and hymns, but my hope, in time, is to build our church anew here in Grantville."

"So you're not Roman Catholic?"

"Well, I've never formally renounced Rome's authority over me, but I imagine the current pope would take a dim view of my beliefs. I, and the remaining brothers of my order, follow the mission started by Patrick and Columba, and their followers. We are of the Celtic mission."

* * *

"So what did you tell them?" Inez wanted to know after Enoch had related the episode over dinner.

"What could I tell them? I gave Aidan four cots and told them he and his friends could stay at the church. Three of them have jobs anyway, and Aidan promised they wouldn't get in the way. He practically ordered me to give them work to do, to pay me back."

"This wasn't easy for you."

Enoch didn't answer. Inez continued, "They're not John, you know. You'll have to confront your feelings about his choice sooner or later. I've been telling you that for years, even before the Ring of Fire. You're going to have to face the fact that your son made a decision that made you uncomfortable. A decision

you don't understand. This is eating you up inside, Enoch Wiley, and I'm afraid it's going to kill you one of these days."

He hugged his wife then, pretending not to notice how shiny her eyes were. Later, after she went to bed, Enoch went to his study. He looked at the box, and thought about opening it up, but sat down at his desk instead. He looked at the picture again, of himself, his son, and his wife.

Inez was right. He didn't understand his son's choice. A part of him wanted to blame Mary Kathryn Riddle, but he knew that was unfair. John had gone to youth group at St. Gregory's Episcopal in Fairmont at first because he had a crush on Mary Kathryn, but if Enoch was honest with himself, his son stayed with the Episcopal Church because it fed a spiritual need. It hurt his pride that he couldn't meet that need for his son.

He'd wanted to turn Angus down flat. He knew why Angus had come to him; he'd housed a Benedictine monk, Brother Johann, not long after the Ring of Fire. That had been different somehow. Maybe because in those chaotic months immediately following Grantville's trip back in time, Enoch could bury himself in work and not think about things. He was just as busy now, but with things much more stable than they'd been back in 1631 and '32, he couldn't deal with events the way he had when Brother Johann was a guest at the church.

He stood up, and turned out the light over his desk. No more self-pity, he told himself firmly. Besides, it was time to go to bed. Inez wouldn't like it if he were up too late.

* * *

Aidan hadn't been staying at Grantville Presbyterian very long—only two weeks—before he came to the conclusion that Reverend Wiley would be just as happy if they weren't there. He was far too polite to say so, of course. Enoch Wiley did his Christian duty, Aidan could tell, even if it pained him. And it was genuine. Aidan had been quietly observing the minister since coming to live in the church. Enoch Wiley seemed to be a man in conflict with himself.

He wanted to help the man, if he could. Regardless of the tolerant attitudes of up-timers in the Grantville area, not many people would offer hospitality to complete strangers, especially strangers of an alien faith. And most especially when they really would rather not. On some level, the monk felt that it would be a way to repay his host for his kindness. If, that is, Reverend Wiley wanted to be helped in this way.

Aidan decided he needed to understand his host better. Even if all he accomplished was to make his and the other brothers' presence less painful, that would be worthwhile. He decided to start with Martin Riddle. The lawyer was a friendly young man who'd surprised Aidan with an interest in "Celtic spirituality," as Martin had termed it, and they'd had several conversations on the subject. Aidan decided to speak to him during the time local custom dictated for the midday meal. The "lunch break," as the English-speakers in Grantville termed it. Aidan found Martin outside his office with a woman holding onto a young child of not more than two years, while Martin himself cradled a newborn in his arms. In the hand not being clutched by the little boy, the woman carried a basket.

"Brother Aidan!" Martin said. "I'd wave, but I've got my hands full. This is my wife, Doria, and Charles—Chuckie. And my beautiful little girl Kathryn." The young man beamed with pride at his tiny daughter.

"I'd hoped we could talk, Mr. Riddle. Perhaps some other time."

"Nonsense," said Doria in a tone that brooked no argument. "You'll join us. I've been wanting to meet you anyway, ever since Marty told me about you."

"And for the last time," Martin said, with mock severity, "It's Marty. Or Martin, if you must. 'Mr. Riddle' is my dad."

For a time, they spent a pleasant late summer day eating the picnic lunch Doria had brought with her. Martin's wife was a teacher, currently taking time off after the birth of little Kathryn. Doria was particularly amused when Aidan told her of the rumors concerning him and his fellow monks.

"Grantville wasn't what you'd call cosmopolitan before we all got thrown back to your time, Brother Aidan," she said. "It was a small town in the country. I'm not surprised someone thought you were Chinese. Whoever started that gem must have been watching too many kung fu flicks."

What "kung fu flicks" were remained a mystery. After they finished eating, Doria changed her son and fed her daughter. Aidan brought up the subject that had been on his mind.

"What you have to understand is that as a minister Enoch Wiley is a man of certainties," Martin said. "People are totally depraved, and God either picks you for salvation, or He doesn't. You get my meaning."

Aidan smiled. "I don't believe I've ever heard Calvin summed up in quite that way before, Martin. I take it you don't much care for his particular beliefs."

"Not really. I have nothing but respect for Enoch Wiley. You won't find too many people that have served Grantville better, before or after the Ring of Fire, and he's never asked for a thing in return. My family's known him a long time, and he's someone I admire a lot. But you won't find me sitting in his church on Sundays.

"I guess it just comes down to the fact that I don't believe God can be figured out, not the way the Calvinists seem to think. It's enough for me to know that God's there for us, and he sent Jesus to save us, if we have sense to recognize that. The Nicene Creed pretty much sums it up for me. The rest? Well, let's just say I've got an awful long list of questions to ask, assuming I make it through the pearly gates."

"You're lucky we've only just met. I'd have made a monk out of you years ago, Martin Riddle."

"Him? A monk? Ha!" Doria looked up from nursing her infant and gave her husband a wicked smile. Martin blushed.

"What I don't understand, though, is why Reverend Wiley seems so ill-at-ease around me and the other brothers."

"His son, probably," said Martin. "I don't know much about it, myself. I was in law school when everything happened. But I do know that Enoch was never happy that his son, John, became an Episcopalian. Ah, that's the branch of the Anglican Communion in the up-time United States. And he was serious, too. I remember when I left Grantville he was thinking really hard about ordination. My sister could tell you more about that than I could. They were good friends."

Aidan nodded. He didn't understand, at least not yet. But he would, in time. He left soon after that, thanking Doria for lunch. Martin invited him to evening prayer at his grandmother's house. Veleda Riddle, it seemed, was trying re-create the church she knew and loved before the Ring of Fire. None of its clergy

had been transported down-time and, given the current situation, Archbishop Laud was unlikely to send any.

Aidan accepted the invitation. As he walked back to Grantville Presbyterian, an image came to his mind, that of the Celtic knot. A complex thing that nonetheless formed a beautiful pattern. As the last bishop of a church that the world thought was long dead, Aidan had learned to be patient. He was determined to be patient now. Like the Celtic knot, the situation with Enoch Wiley would resolve itself into a complex, yet beautiful pattern.

* * *

Enoch had found out a while ago that old age and insomnia went hand in hand. The fact that he'd been so preoccupied lately wasn't helping. He found himself doing a lot of thinking, mostly about John.

Four years before the Ring of Fire, John had told his parents that he was feeling a call to ministry. Enoch was not pleased, but he was also not terribly surprised. John had gotten deeply involved in life at St. Gregory's, so deeply in fact that he'd been hired as a part-time youth minister. Enoch had been expecting his son's announcement that he wanted to become an Episcopal priest for some time before John had called his family meeting.

It turned out that Enoch was wrong about his son's intentions. He didn't want to become an Episcopal priest. He wanted to become an Episcopal monk.

"I've been thinking about this for a while now," he'd said, "ever since St. Greg's sent us on that retreat at Newton House in Vermont. It felt so right, and I've been praying about it ever since. I feel like this is what I'm being called to do."

What followed was an argument, however calm and civil he and John had been when speaking to each other. John's tendency towards a more mystical faith had developed starting in his late teens, and it always made Enoch uncomfortable. But the thought of his son worshipping images (icons were aids to prayer, John had said, a window, nothing more) and worshipping Mary (the Angelus honored the ultimate leap of faith, John had said), revolted him. It all came out that night, all the disagreements he and his son had papered over through the years. It ended with Enoch telling John what he thought about John's personal theology, in no uncertain terms. And where John would end up, in equally uncertain terms.

"I'm sorry, Pop. I can't believe that if we're made in God's image, we're inherently evil. We're not perfect, and God demands perfection, but we're not 'totally depraved.' I can't accept that, I never could. I hope one of these days you'll know how much I love and respect you. I wouldn't be who I am without you, Pop."

Superficially, at least, the two were back on good terms, but there was a distance there that neither Enoch nor John could bridge. John sent Enoch the Rule of the Society of St. John the Evangelist, the order he hoped to join, and other books in an attempt to get Enoch to understand the choice he'd made. Enoch, for his part, privately hoped that something would happen, either during John's six-month postulancy or three-year novitiate, to make him leave the order before taking his life vows. But nothing had, and Enoch and Inez made the trip to Cambridge, Massachusetts, to see their son become a monk.

Restless, Enoch decided to walk to the church. He didn't have a clear idea of what he'd do there, but he'd think of something. If nothing else, he would sit in a pew with the Bible and pray. That always managed to bring him comfort.

When he got to the church, he found it quiet, but he saw candle light flickering through the window of the sanctuary. He'd forgotten that Aidan and the other monks were finishing up their private worship. A little guiltily, Enoch knew that Aidan had been trying to speak to him, to ask permission, and that he'd actively been avoiding the monk. Finally, the request had come through Inez, and Wiley hadn't raised any objections. Where else could they go, anyway? They wouldn't be welcome at St. Mary's, and the Methodist church was on the other side of town from the Presbyterian church. The monks wouldn't have minded the walk, but Enoch refused to make them resort to that option.

He crept into the sanctuary of his church, to wait until the four men were done. He didn't know if they were wrapping up or not, not being at all familiar with their form of worship. The simple,*a capella* singing filled the austere chapel of Grantville Presbyterian. Aidan, in a clear tenor, sang a line. The other three monks, led by Oran's robust bass, sang a response.

"Night has fallen," sang Aidan.

"Night has fallen, Gracious Spirit, guard us sleeping," came the response.

"Darkness now has come."

"Darkness now has come, Gracious Spirit, guard us sleeping."

"We are with you, God."

"We are with you God. Gracious Spirit, guard us sleeping."

"See your children, God."

"See your children, God. Gracious Spirit, guard us sleeping."

"Keep us in your love."

"Keep us in your love, Gracious Spirit, guard us sleeping."

"Now we go to rest."

"Now we go to rest. Gracious Spirit, guard us sleeping."

"Gracious Spirit, guard us sleeping," they repeated several more times, and then silence fell.

Enoch Wiley never had much use for things like this. He'd viewed the Sunday services of Catholics, Episcopalians, and some Lutherans as a lot of fancy and useless ritual. Even now, a part of him recoiled at the words of this hymn, which seemed to reach back to a time of pagan beliefs. But the greater part of him recognized the holiness of this moment, and the humble piety of the four men holding this simple service.

"Wherever two or three are gathered in my name, there am I also," he murmured to himself.

Enoch left the sanctuary as quietly as he'd entered it. Sleep was no closer at hand by the time he returned home than it was when he left. But he knew what he had to do. He went into the study and settled down into his reading chair with a book, George MacLeod's*The Whole Earth Cries Glory* . Even if I can't make peace with John, thought Enoch, I can try to understand him.

* * *

The invitation to join Enoch and Inez Wiley for lunch after Sunday services came as a pleasant surprise to Aidan. Oran, Dunstan and Colman were overjoyed. Years of solitary monastic living had made the four of them passable cooks, but they'd been thoroughly converted to West Virginia country cuisine by Inez Wiley. Their mouth was already watering at the prospect of fried chicken, gravy and biscuits. Even monks, Aidan reasoned, were entitled to feast occasionally.

Inez's spread surpassed their expectations, and the conversation was equally good. Enoch didn't say a great deal—though he seemed much more at ease with them on this day—but he became quite animated when talking about the Ring of Fire. The Wileys had been witnesses to the event, having just celebrated the wedding of the sister of the USE's current prime minister, Mike Stearns.

"Ruffled some feathers with my sermon that day, I can tell you," said Enoch, with a flash of mischievous humor. "The groom's parents were big-city Episcopalians. I don't think they were ready for a 'yahoo preacher' in a 'yahoo shack.'" Aidan gathered the term referred to Wiley's rustic origins.

"The Riddles didn't strike me as being like that, particularly," Aidan said, with a smile of his own. He hoped that this day would mark a turning point in his relationship with the Presbyterian minister. Everyone Aidan had talked to about Enoch Wiley had confirmed the monk's belief that Wiley was a genuinely godly and pious man. Grantville's mayor was quite vociferous on the subject, and had filled Aidan's ears with many stories of how Enoch and Inez had ministered to people in need.

Wiley chuckled. "Well, the Riddles are a little different. I don't have a lot of use for Episcopalians. They strike me as kind of wish-washy, though I'd never let Veleda hear me say that! But the Riddles are good Grantville people. The Simpsons came from a whole different world."

After they finished dessert, Inez withdrew, taking Dunstan, Oran and Colman with her. She told them she wanted to hear some of their songs, though everyone knew that the real reason was to give Aidan and Enoch privacy.

When they were alone, Enoch spent a few moments studying his tea, then looked at Aidan.

"I feel, Brother Aidan, that I owe you an apology."

"For what, Reverend Wiley?"
Enoch sighed. "I haven't been hospitable to you. I've avoided talking to you, or having much to do with you and the other brothers at all. That was uncalled for."

"I will accept that in the spirit in which you offer it, Reverend Wiley—"

"Enoch, please."

Aidan inclined his head. "Enoch. You say you have not been hospitable, yet you let four strangers stay in your church. You never asked for anything in return. And this despite the fact that our presence has

clearly pained you. You will pardon me if I suggest you have nothing to apologize for."

"I was hungry and you fed me. I was naked and you clothed me," Wiley quoted. "I could not have done otherwise. But even if you feel I don't owe you an apology, I do you an explanation. We have three children, two of whom were left up-time. My son John was always something of a mystery to me, I confess. He made me proud, but when he started going to the Episcopal church in Fairmont—that was a town near Grantville before the Ring of Fire—it made me angry. Though now that I think about it, I think it was more that it hurt my pride."

"Your son did not follow your religious beliefs," said Aidan. "It is a natural enough feeling. I don't have to tell you what disputes over religion can bring."

"No. But I always thought I was better than that. And when John decided to become a monk . . ."

The final piece fell into place. The pattern at last became clear.

"I can imagine. My own parents were quite violently opposed to my own decision. I trust that you didn't view John as a heretic."

"Maybe not," said Enoch. "But the idea offended me. I didn't understand it. I didn't understand John's beliefs, and I didn't understand that life. It all seemed like a lot of useless ritual to me, practically idolatry."

"We will have many interesting discussions on that topic, I'm sure. But that's not at the heart of this."

Enoch was quiet for a long, long time. He looked at his hands, and Aidan couldn't tell whether the minister was praying or gathering his thoughts. When he looked up, he had tears in his eyes.

"What's at the heart of it, Brother Aidan, is that my son made a choice that I'm not sure will lead to grace. And I'm afraid that that's my fault."

* * *

Enoch was afraid that the Scottish monk would take pity on him. He didn't think he could bear that. But thankfully, Aidan's expression wasn't one of pity, it was one of concern and understanding. He couldn't have borne it if it were otherwise.

"We're more alike than you might think, Reverend Wiley," Aidan said. "We have spent most of our lives ministering to people who have to work every day to make a living."

Enoch laughed, but it was a laugh of pain and not mirth. "John gave me books by a minister named MacLeod. For the same reason."

"One of the MacLeods of Morvern, perhaps?" Enoch shrugged. Aidan didn't dwell on it. "Where I live, there are people who try to blend the teachings of Calvin with the teachings of St. Patrick and others. They find a way to do that, and I believe they are richer for it."

The monk's words struck a chord in Enoch. Some of Grantville's clergy, particularly Simon and Mary Ellen Jones, had been strongly in favor of reaching across denominational boundaries. He'd never shared that belief, but as he'd begun to read more of MacLeod's writings, he could see how it held appeal to John. Or to the people of whom Aidan was speaking.

The monk continued. "You have to understand something, Reverend Wiley—"

"Enoch, please."

"Enoch. When God called missionaries to bring Christ to all of England and Scotland, two different groups answered that call. In the south, a missionary named Augustine—not*that* Augustine—came from Rome and moved north from Canterbury. In the north, Columba came from Ireland and moved south from Iona.

"They met, about a thousand years ago, in the kingdom of Northumbria. King Oswy was baptized by the Celtic missionaries, his queen by the Romans. They couldn't agree, among other things, when to celebrate Easter. Oswy didn't want his kingdom divided over such things, so he held a debate, a synod, at Whitby. The Romans appealed to the authority of St. Peter. Hilda and Colman, speaking for our order, appealed to the Beloved Disciple, St. John. We lost. And I think the world is a poorer place for it."

Enoch found the intensity of Aidan's expression almost frightening. "I believe the choice King Oswy faced was a false one. There was room for us both. As there is room for both you and your son, Enoch. Rest assured that you and Inez had a great deal to do with his faith. Though John went down a path you wouldn't have chosen, there is much of yourself in him. As I have come to know you, and learned about you from others who have known you far longer, I cannot doubt this."

Enoch smiled sadly. "I don't know that I can change my beliefs this late in life, Aidan. I don't know that I want to."

"Don't. Just leave room for uncertainties."

They spent the rest of the day talking. Inez and the three other monks rejoined them and they shared stories and debated theology well into the evening.

* * *

As Aidan hoped, that Sunday was a turning point in his relationship with Enoch Wiley. He gathered that the minister had never had a truly close friendship with clergy from a different faith. Probably the closest was Reverend Al Green, from a church called the "Baptists," though they didn't see much of each other. He and Aidan began to meet regularly for meals, to debate their religious views and provide mutual support. It was something Wiley hadn't had since before the Ring of Fire, and he'd forgotten how much he'd missed it.

The week after their first lunch with the Wileys, Enoch had helped find them more permanent housing. One of his parishioners, Myrtle Vandine, was willing to rent some rooms in what they referred to as a "fixer-upper" at a considerable discount. The woman had been reluctant at first, but Inez's raving about how helpful the four of them had been as volunteer assistant groundskeepers at the church had sealed the deal. The monks readily agreed to help with improvements on the property to make up for the discount in rent.

Aidan even found work, of a sort. Thanks to introductions provided by Reverend Wiley and the Riddle family, the master silversmith at Roth, Nasi and Rueckert Jewelers, agreed to help Aidan sharpen his rusty skills in that trade. Working with Angus Gunn and others, Aidan created crosses and other Celtic-themed pieces the Grantville jewelers then sold on consignment. That income went into a fund that would hopefully one day pay for a monastery.

* * *

Enoch Wiley lay beside Inez one night. He could tell his wife was asleep by her breathing, and though he had a much easier time sleeping the last few weeks, on this particular night it was elusive.

It was the Ogilvie property. An offer had come in, a good one. Martin had been right about someone wanting a country seat—a newly wealthy down-timer wanted his own manor house, and the Ogilvie property was right in his price range. Martin felt that the offer was probably the best they could hope for, but Enoch sensed that the young lawyer was holding back. He didn't press, because he had a strong feeling that Martin was thinking the same thing Enoch was. Nevertheless, he was tempted to just accept an offer and use the money for relief work and other outreach projects. But then his mind quoted a favorite exchange between Christ and an unnamed disciple. His favorite version was in Mark: "The poor you will always have with you, and you can help them any time you want. But you will not always have me." And it was Aidan's voice that spoke that verse in Enoch's mind.

Sleep began to take hold, the conflict unresolved. In that place between consciousness and unconsciousness, Enoch remembered something his wife had said to him:*"Trust God, Enoch. He'll bring the right opportunity at the right time. You know He will."*

And then it came to him. It would be the perfect use for the property, and would honor the spirit of the bequest.

* * *

Aidan was looking forward to this week's lunch with Reverend Wiley. Ever since arriving in Grantville, the question of what to do with his order's treasure had nagged at him. It wasn't in danger in Grantville the way it might have been in other places, but if Emperor Gustav or another noble found out where it was, they might well decide to add it to their personal collection. Ideally, Aidan would house it in their monastery—when it was built. But that was a long way off as yet.

A possibility did occur to him, one he discussed with Inez Wiley. There was someone of absolute integrity and trustworthiness, and Inez agreed that this man would be a good choice. She even offered to do whatever she had to do to get him to agree. So when Aidan when to Wiley's church to meet his friend for lunch, he took the treasure with him, wrapped in cloth as it always was.

When he walked into Enoch's office, he was surprised to see Martin Riddle there with the Reverend and Inez. Mrs. Wiley had the expression of someone holding a secret, and Aidan couldn't tell if it was directed at her husband or him.

"Please, Aidan, sit down," said Enoch. "I wanted to talk to you about something."

Aidan sat in the office's remaining empty chair. Enoch nodded to Martin and the lawyer pulled some documents out of the leather shoulder bag he carried with him.

"Not long before you came here, the church received a bequest. A piece of land. Deciding what to do with it has been a problem."

Aidan nodded. "I'm always happy to give you advice, Enoch."

"Actually, this is about giving you something. The deacons and the elders have discussed it, and the

congregation voted on it. We want to give the land to you for your monastery."

Martin slid the documents and a quill pen across to Aidan. For a moment, the monk was speechless.

"You should sell it, Enoch. Use the money for your church's charities."

"The poor will always be with you," Wiley quoted. He took Aidan's hand in his, looking the monk in the eyes. "You've given me something incredibly precious. A chance to understand my son. I'll never be able to let him know that, and that's my fault, but it's given me some peace. I can't think of a better way to thank you, or to honor Donald Ogilvie's bequest, than to give the land to you. I know it may be a while before you can build your monastery, but this place will be waiting for you when you do manage it. And you will, I know."

Aidan was moved beyond words. And it made his own decision even more right. He signed the deed, and gave the document back to Martin. Aidan then set the cloth-wrapped bundle on Wiley's desk and opened it.

It was a book, leather-bound and clearly very old. Aidan opened it, to the first page of the Gospel of John. Martin Riddle gasped, recognizing the book immediately. Enoch and Inez Wiley did not, but the beauty of the book took their breath away nonetheless.

It was a manuscript of the Gospels, relic of a time when copies had to be made by hand. When transcribing the Word of God became a work of art. This book was considered by historians of the time Martin Riddle and the Wileys came from to be finest example of the uniquely medieval art form of manuscript illumination. Though legend said that it had been brought over from Ireland by St. Columba, Aidan knew that it had been made at Iona after Columba's time, and from there taken to the Abbey of Kells, in Ireland.

"This is the greatest treasure of my church, Enoch Wiley," said Aidan. "I need someone to keep it, to guard it, until we can build our monastery, and house it properly. Someone who can be trusted. I think you are that person."

Inez nodded to her husband. He nodded to Aidan.

"It's beautiful. What is it?" His eyes lingered on the beautiful abstract patterns of the illumination, with a letter taking up a single page.

"The Gospels. This page is the first page of the Gospel of John.

"In the beginning was the Word," said Enoch. "And the Word was with God and the Word was God. He was with God in the beginning." He couldn't read Latin, but he knew that passage by heart. The two men stood up and embraced.

* * *

As Enoch and Inez went to bed that night, neither of them quite knew what to say. It had been a day that, for them, had been almost as eventful as the Ring of Fire. He thought of the book Martin told him was known as the Book of Kells.

"Do you know why I dislike the Roman Catholic Church so much? Because I thought they kept the Word of God for themselves, and didn't let the people read it. I thought it was a terrible thing to print the

Bible in a language hardly anyone could read. Nothing I've seen in the last three years has changed that."

"Are you saying you've changed your mind?"

"No. But for the first time, I also saw that making a Bible could be an act of devotion. That, at least, I can respect."

Inez made a noise of agreement. They were silent for a time, and soon she was asleep. As he drifted off himself, Enoch Wiley thought of his son and smiled. What would John think, he wondered, if he knew what had happened today? Maybe, he told himself, he'd be proud of you.

Author's Note: The main sources used for this story are *Listening for the Heartbeat of God* (published by Paulist Press), by J. Philip Newell, and *The Iona Abbey Worship Book* (published by Wild Goose Publications). Newell's book traces the history of Celtic spirituality, even after the Celtic Church had ceased to exist as an independent entity by the end of the thirteenth century. It also gives more detailed biographical sketch of figures such as Pelagius and George MacLeod, founder of the Iona Community and a major figure in the Church of Scotland in the twentieth century. Historical details concerning the Synod of Whitby and other events in "The Sons of St. John" are taken from this work.

The Iona Abbey Worship Book contains services and prayers that are still used in worship on Iona today, and was the source for the monks' evening hymn in the story. You can look them up on the web at www.iona.org.uk.

The Society of St. John the Evangelist is a real monastic order of the Anglican Communion, founded in Oxford in 1866. The "Newton House" of the story is based on their monastery, Emery House, located in West Newbury, Massachusetts. Their website is www.ssje.org.

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Prince and Abbot

by Virginia DeMarce

This Troublesome Monk
Fulda, December 1632

"Maybe they should have held the battle of Luetzen last month after all," Wes Jenkins said. "Just have kept Gustavus Adolphus out of it. Up-time, it seems to have cleared a whole batch of people off the playing board that we could just as well have done without."

"Pappenheim?" Harlan Stull asked. He was sitting far back in his chair, so his burly chest didn't bump into the table. Before the Ring of Fire, he had been a miner and was the UMWA contact man for the New United States' administrative team in Fulda. He was also a nephew of Dennis Stull who was running the procurement office that the New United States had set up in Erfurt, where Gustavus Adolphus also had his main supply depot in Thuringia. All the rest of them figured that was something which would turn out to be real handy in the long run.

" Johann Bernhard Schenk von Schweinsberg. The only thing that I love about him is his name. 'Barkeep from Pig Hill.' What a beautifully aristocratic name, once you translate that 'von' bit, no matter how many centuries the pigs have been sitting on top of their hill." Wes grinned. "Up-time, he was running around the battlefield, blessing the soldiers and calling for them to fight for the Catholic faith, when he ran into a squadron that wasn't friendly. They shot him neatly. Pistol to the head. So he was killed at Luetzen, just like Pappenheim. Their bodies were carried into the Pleissenburg together to be embalmed, which would be a great thing for them to be, if you ask me and good riddance to the two of them."

Wes got up and looked out the window. Grantville hadn't had much information to prepare the administrative staff of the New United States for the job they faced in Fulda. Encyclopedia articles and a few tourist brochures from Len Tanner. That was about it. The tourist brochures hadn't been of much use. Up-time, practically the whole town had been redeveloped between 1632 and the twentieth century, it seemed.

The building where they were sitting right now didn't have a picture in any of them. It would have been torn down in the eighteenth century and replaced. The big tan sandstone cathedral with its two tall curvy-topped towers wasn't here yet, either. Now, maybe, it never would be built. Instead, there was a church called the basilica. One of the monks had told him that it was eight hundred years old. That was now, 1632, not in the year 2000.

Wes was willing to believe it—that the basilica was eight hundred years old. There was another one too, one that had survived until the twentieth century. That one had a photo in the brochures. St. Michael's it was called. The oldness of St. Michael's church had practically seemed to press down on his shoulders when he went through it. It was a burial church. Eight hundred years of dead monks. Already, in 1632, eight hundred years of dead monks.

"What's the prince-abbot of Fulda done to you?" Andrea Hill looked at her boss with some worry. His thin face was dominated by a long nose. Wes had always been wiry, but since the Ring of Fire, he had gone down to skin and bones. He would just be annoyed if she acted like a substitute mom, though, so she was careful not to fuss at him about it. "He's been gone since before the king told us to take charge of Fulda."

"Where's he been?" Fred Pence, Andrea's son-in-law, had just arrived the week before, with the second group sent from Grantville.

"He ran off to the Habsburgs when Gustavus Adolphus and the Hessians came through and took 'Priests' Alley' here and along the Rhine River in the fall of 1631. Fulda gave up without a single shot. We haven't seen hide nor hair of him."

Wes came back from the window. "At least, with the abbot and chapter monks gone, most of the people seem to prefer us to the Hessians as an occupation force. Even the monks who are still around, at least since we promised to try to get their library back from our noble ally the landgrave of Hesse, who swiped it."

"Don't get their hopes up. When these brigands swipe stuff, they mostly swipe it for good. Our side just as much as their side." Roy Copenhaver, the economic liaison, was already thoroughly disillusioned by how little, between them, Bernhard of Saxe-Weimar for Gustavus Adolphus and the Hessian commander Albrecht Thilo von Uslar had left in Fulda in the way of resources for the Grantvillers to work with. Although, he had to admit, the monks who escaped to Cologne had supposedly taken most of the abbey's treasury with them, so he couldn't blame their own new Captain General or his Hessian allies for that.

Andrea stuck her pencil through her graying hair. "Not to mention that they stole their archives themselves. That is, the monks who ran off to Cologne took the records with them and aren't about to send them back. Anita in Wuerzburg and Janie in Bamberg at least have something to work with when they get these disputes about who has a right to what laid in front of them. I'm having to start from scratch."

Wes sat down again, looking at the letter in front of him. "We have a Christmas present. The abbot's coming back, Ed Piazza says. In all his full glory, waving the banner of the Counter Reformation and claiming that he has the right to do his thing under 'freedom of religion' and the constitution of the New United States."

"From Cologne?" Andrea asked hopefully. "With archives?"

"No, from Prague. He attached himself to Tilly and ran in a different direction, taking what little he had in the way of an army with him. He's been hanging around with Wallenstein since then. He must be fairly tough, though—he's been living like a common soldier. Duke John George of Saxony gave him a safe-conduct through Saxony to come back and an escort to the border of the New United States. They handed him over down by Halle." Wes sighed. "Good old Duke John George. With friends like that, we *really* don't need enemies."

"Is he bringing imperial troops disguised as his personal staff?" Harlan asked.

"God, I hope not. The landgrave of Hesse would be only too happy to send a batch of his troops back into Fulda in the guise of 'protecting' the king of Sweden's new allies, given how few of our own people Frank Jackson has been able to spare for us here." Derek Utt, the military administrator, spent as much of his time keeping a wary eye out for raiding "friendly" troops as he did for raiding "enemy" troops.

"How many military, exactly, do we have now?" Wes asked him.

"Besides me? A half-dozen up-timers. Seven, if you count Gus Szymanski, who is the emergency medical technician and nearly sixty years old. Aside from Gus, the most senior person is Mark Early, who's nearly thirty. He's doing most of my administrative stuff. Procurement, quarters, payroll. The next is Johnny Furbee, who is twenty-seven. I'm basically using him to help me train some military police from local town and village militias. The other four are kids. Good kids, and at least they all have high school diplomas, which Johnny doesn't, but they're still kids trying to teach what little they know about modern military procedures to a couple hundred of those ex-mercenary combat veterans that Gretchen picked out from the prisoners. The training that Johnny is giving the militias is*ad hoc* since he was never an MP himself and neither was I, but it's something, and at least they have a vested interest in keeping the

ex-mercenaries from raping their wives and daughters. The kids and the new MPs do good to keep*our* people from relapsing into looting the locals, to tell the truth. That's it. I don't know whether to hope Frank sends us more down-timers or be glad that we don't have too many to control."

Wes looked at him, thinking that Derek himself had just turned thirty. But he was not only older in years than the younger men he called "kids." He was a lot older in experience. Derek was a Gulf War vet. He'd been a member of the active reserves; married, with a kid, just a baby. They were left up-time. Wes understood. His wife Lena had been left up-time too, although his two daughters were in Grantville, Chandra with two kids and Lenore finally going to get married next month, which he would have to miss. Not that he would have chosen Bryant Holloway for her if he had been doing the picking.

Derek had lived in Fairmont. He had just come over to Grantville the afternoon of the Ring of Fire to go to the sport shop with his sister Lisa's husband. He had volunteered the afternoon that Mike Stearns called for people. Once Mike and Frank Jackson had gotten past their first stage of relying so heavily on the United Mine Workers, he had moved up fast in the army of the New United States.

Wes nodded his head. "If he tries to bring in troops disguised as staff, stop them at the border, but I really don't think that Ed and Frank would let him get that far with them. He's free to come back as an abbot. He can walk right in carrying his staff. Hell, he can even ride in, if he wants to. We'll even provide him with an escort from the Thuringian border to the gates of the abbey. But he's not a prince of the Holy Roman Empire any more and he might as well learn it right there as anywhere else. What route is he taking?"

The meeting got down to the nitty gritty.

Grantville, December 1632

"Because you are offering a salary."

Ed Piazza looked at the down-time woman who was sitting in a straight chair across from his desk. He knew that the chair was hard and remarkably uncomfortable. In his first job, a wise old teacher had showed him that by sawing a quarter of an inch off the front legs of a chair and sanding them, front and back, so they sat flush on the floor, it wasn't enough to notice but anyone using it was constantly sliding toward the front, in the direction of the floor, requiring him to brace his legs. It was remarkably useful for keeping parent-teacher conferences within their assigned time limits and Ed had taken his pair of wooden chairs with him from job to job, defying the advance of metal folding chairs. Even now, the people he motioned toward them rarely stayed in his office any longer than was absolutely necessary.

"How did you hear about the job?"

"Miss Susan Beattie told Mrs. Kortney Pence who told Mrs." She paused. "Schandra? Sandra? Tsandra? Prickett."

"Chandra," Ed said.

"Mrs. Prickett. Who told me, all at a meeting of the League of Women Voters. Miss Beattie thought of me because her father knows Mr. Birdie Newhouse who knows my brother Dietrich."

Ed sorted it out in his mind. From Orville Beattie's daughter to Andrea Hill's daughter who was married to Fred Pence to Wes Jenkins' daughter. All adult children of members of the NUS administration in Fulda. Grantville had been pretty a small town, after all, before the Ring of Fire.

"'Because you are offering a salary.' That is the most forthright reply I have had from anyone applying for this job. When I asked why he wanted it, I mean. Or she. Would you care to explain, Mrs. Stade?"

"My husband went bankrupt. Nobody can blame the Ring of Fire for that. He went bankrupt before it. He died in April 1631. Because of the bankruptcy, he didn't leave me any money to live on. He didn't leave a business for me to fight with the guilds about over whether or not a woman can run it. All of this was in Arnstadt, though he was born in Stadtilm. His father was born in Badenburg, which is how I came to meet him and marry him. I am from Badenburg. I married and went away from my family. Now I am a widow, childless, and do not want to go back and live on the charity of my brothers and sisters. I have used up my dowry. I want work, my own income."

She nodded emphatically. "I also consider myself qualified. My husband was a councilman before he failed in his business; my father is a councilman. I presume that one of my brothers will succeed him on the council. I know politics—more widely than most, since I have ties in three cities, and through my brother Dietrich and the problems with*Herr* Newhouse's land, have come to know a fourth, your own. I can also help the administration figure out where the disputes are between the Fulda city council and the abbey, I think. There are bound to be a lot of old grudges."

She paused and smiled, reaching through the slit in the side of her skirt for her pocket. "And I carry the constitution of the New United States with me, everywhere I go. I have learned it by heart. As well as anyone, I can tell your administrators in Fulda what the abbot can and cannot do, under the down-time law. I will be very happy to tell the abbot of Fulda what he can and cannot do under this constitution."

Ed got up, walked to the side of the room, and lifted an upholstered office chair from its place near the wall. "Have a more comfortable seat," he suggested.

* * *

Johann Bernhard Schenk von Schweinsberg was not happy. He was nearly fifty years old and had never before heard of such a thing. He glared at Ed Piazza.

"It's 'take it or leave it,'" Ed said. "The condition of our permitting you to go back to Fulda is that you take along our appointee to serve as a liaison between you and the NUS administration there."

"It is wholly inappropriate," the abbot of Fulda said. "Utterly inappropriate."

"My name is Clara Bachmeierin," the woman said. "Widowed Stade. I am from Badenburg. I am Lutheran. We have dealt with the up-timers since they first arrived. You have not. You have been away, among the imperials. We have learned to understand their politics. You have not. Stop making a sour face at me. I have reached an age at which no one will consider my presence scandalous or shocking. I am thirty-six, no girl. I will share the quarters of Mrs. Hill. She has an apartment upstairs. Her son-in-law, Mr. Pence, has an apartment downstairs in the same building, which he shares with two other men. He thinks it is safer for Mrs. Hill to be upstairs."

"You are a Protestant."

"That's what I just said," she answered.

"A Protestant and a female. Not a suitable advisor for a Catholic ruler. Not a suitable advisor for an abbot."

"Listen, Schweinsberg, at least half of your former subjects were Protestant, when you became abbot in 1623 and began a stronger enforcement of the Counter Reformation." Ed Piazza interrupted them. "That is, half of them were still Protestant*after* the last three or four abbots had been using their authority over the past half-century to try to coerce them into becoming Catholic again, using differential tax rates, forbidding Protestants to hold public office, giving them the option of conversion or exile."

"It is our duty to bring people back into the fold of the church," Schweinsberg said. "It was our guilt that the Protestant revolt occurred in the first place, damning so many souls to hell. Since you are supposedly Catholic yourself, Herr Piazza, you should be doing the same."

Ed leaned forward. "You're going to be learning a lot of new lessons. The first one is about separation of church and state. If you want the people of Fulda to be Catholic, you will have to entice them. Persuade them of the rightness of your doctrines. Feed them barbecue at revival meetings, I don't care. But you may not force them to convert. You may not compel them to hear your missionaries. All carrots, no sticks."

Schweinsberg scowled.

"Remember. They are not your subjects." Ed paused between each of those words for emphasis. "You no longer exercise legal jurisdiction over them. You are the church; the NUS is the state. I am quite sure that Mrs. Stade will be happy to explain it to you. The two of you will have plenty of time for conversation between here and the border, so she can tell you how the system works."

Clara Bachmeierin, otherwise known as Mrs. Stade, smiled blandly.

Ed Piazza continued. "There are ways that you can take advantage of our system, no doubt, but only if you work within it. If you try to go around it or subvert it, somebody in authority is going to think about the appropriate penalties for collaborating with the enemy. When you leave here, you're going to be carrying a written notification to that effect, signed by President Stearns."

Game Board
Fulda, January 1633

"Why can't they all at least be happy Catholics together?" Harlan Stull asked plaintively. He was looking at a complaint from the Franciscan Order that some sixty years before, a former abbot of Fulda had given one of their buildings, which they had abandoned and were no longer using, to the Jesuits, who still had it and were using it for a school. The Franciscans wanted it back now. The Jesuits thought that possession was nine points of the law.

"*Why*," Wes Jenkins said, "is not up to us Methodist good old boys to figure out. 'Ours not to reason why.' Though I sort of wish that they had sent us a couple of Catholics from Grantville to help us understand it, instead of shipping them all down into Wuerzburg and Bamberg. But I don't think that this is a religious problem. They're all Catholics. I hereby declare officially that it's a land title problem. Put it into Andrea's in-box and let's move on to something else."

"But." Harlan was practically wailing. "Why does it make any difference to them that the abbot and these guys who are supposed to be monks here, the chapter, are Benedictines but they squabble with these other monks who are Franciscans and who say they aren't monks but friars and both of them are jealous of the Jesuits? Aren't they all in the same bathtub together?"

"They weren't up-time," Wes pointed out. "Ed Piazza and Tino Nobili were practically in a boxing match half the time about stuff that went on at Saint Vincent's, with Father Mazzare refereeing. Or trying to."

Andrea tried to think of something that would be helpful. "Think of the Middle Ages. Before the Reformation. They were all Catholics then, well except for the Jews and Saracens, and they fought each other all the time. Remember what Melissa Mailey said about the Norman Conquest?"

"I think it's this way," Fred Pence said. "The Yankees and the Dodgers and all those other teams all played baseball, but that didn't mean that they weren't in competition with one another. For one thing, baseball was the way they made their living, so they were competing for the same pot of dough and the same fans. Like these guys. They're all playing the same game, but that doesn't mean that they're all on the same team. Sometimes they hate each other more than they do the people who play football or basketball. That's how I'm laying it out, for voter registration. The Catholics are football; the Lutherans are baseball; the Calvinists up on the border by Hesse are basketball, and the occasional oddballs are soccer and ice hockey."

Harlan stared at him.

"Well, it works," Fred protested. "Hey, guys, I'm a Nondenominational Evangelical. Or I was, when there was a church for me to go to. We don't have one in Grantville, even. I've been having to make do with the Baptists. This is even weirder for me than it is for you Methodists. But I think that I'm starting to understand it."

"How?" Wes asked hopefully.

"I got the pewterer downtown to make some molds and pour me baseball and other players, like little Monopoly markers. Then I've got a big map of Fulda and all its little outliers that are mixed up with Isenburg and Hanau and imperial knights like the von Hutten family and whatever. Not a decent topo map. The places are just little six-sided pieces of paper, like a game board. And I got some paint for the players. So a Lutheran is a baseball player and if he's an independent imperial knight, he's got a blue bat instead of a green one. A Jesuit is a yellow football player; a Franciscan is a red one, and if she's a nun, she's pink. The Benedictines here at the abbey are orange. Stuff like that. And I've got them set down on the spots where they belong. It's all on a table in my office. You should come by and look at it some time. By the time we get around to holding elections, I should know which precinct is what and where the trouble spots will probably be. Andrea's putting her land title markers on it, too."

Andrea cleared her throat. "Speaking of land titles . . ."

"Yes?"

"I've made one great discovery. The monks took the archives, but most of the local district administrators and provosts of the abbey's estates kept duplicate copies on the local level, because it would take all day for someone to run over to Fulda and look something up. So if the budget has money for me to hire some clerks, we can reconstitute a working administrative archive. Not the historical papal bulls that were five hundred years old and stuff like that, but land documents and surveys from the last

half century or so."

"The budget," Harlan said, "is very tight."

"Consider it an investment." Andrea reached up and pulled out the pencil she had stuck in her hair earlier in the meeting. "If we don't figure out who owes us how much in the way of taxes and rents and dues, there won't be a budget at all."

"Anything else?" Wes asked.

"We have a petition from a convent of Franciscan nuns here in the town of Fulda itself, phrased in such a way that it appears to be presented on behalf of the women of the town in general, on the subject of women's property rights. It's rather interesting." She picked up a piece of paper and started to read. "A laywoman who was a member of their Third Order . . ." She looked up. "That's sort of like a lodge auxiliary, by the way. Or it would be, if they were Disciples of Christ, like me." She went back to reading, "made during her lifetime a contingent donation to them that was to take effect after her death. She has since died and her stepson, who does not deny that she had a right to make a gift while living, challenges her right to make a*post mortem* donation on the grounds that it is equivalent to a bequest . . ."

Harlan Stull's eyes started to glaze over. His definition of "interesting" rarely involved probate law.

"Andrea," Wes said. "Hire a lawyer. A local lawyer. Full time. That's an order."

Variant Visions
Grantville, January 1633

"We ought to give him some kind of a send-off," Linda Bartolli said, looking at the rest of Grantville's *quondam* Saint Vincent's and current Saint Mary's worship committee. "After all, he*is* an abbot and Fulda is really historical. I looked it up in the encyclopedia."

"It should be your call. You're the organist, so most of the extra work would fall on you," Denise Adducci said.

"Well, on Brian, too," Linda said. "And the choir."

"How's it going for Brian now? Is Tino still making trouble?" Noelle Murphy asked.

Linda sighed. When her brother agreed to take on directing the Saint Mary's choir after the Ring of Fire, its former director having been left up-time, Tino Nobili had made a great big fuss. Brian's wife Debra was Methodist, which in Tino's view disqualified him for exercising anything that might be considered a public office in the church. What with Tino's wife Vivian being the parish secretary and her and Brian's parents now being full-time parish volunteers, things could get a bit touchy now and then.

"Tino seems to have settled down some. It helped that the only other person who volunteered to be choir director was Danielle Kowach. He likes the Kowaches and Mahons even less than he likes us, and having Danielle would have meant that both the organist and director would have been women."

* * *

Johann Bernhard Schenk von Schweinsberg assured himself that he supported the endeavors of the Jesuit Order and favored all its efforts in spreading the faith. The Jesuits were so—what was the English word?—dynamic. Not to mention incredibly numerous. They and the Capuchins—those two orders multiplied like rabbits, these days.

Nonetheless, he still found it somewhat disconcerting that the Jesuits seemed to have thrown themselves so very enthusiastically into the Grantville parish. Plus, of course . . . von Spee came from a respectable family, but . . . Athanasius Kircher was certainly an intelligent man—some people said that he was an outright genius—but by no means was his family upper class. Schweinsberg knew this perfectly well, since Kircher's father had been a minor civil bureaucrat from Geisa who worked for the abbots of Fulda and tried to support a large family on a small salary. Of course, the father had earned a doctorate, but the family's more distant ancestry consisted entirely of commoners. Quite ordinary ones.

"I would point out," Kircher was saying with some humor, "that it is also something of a stretch for men born into families of ordinary imperial knights to sit in the diet as princes of the empire. You and your predecessors have been there by virtue of your election as abbots, not by right of birth. The church provides this 'social mobility' for you, too."

"But the statutes of Fulda provide that none but men of noble birth may be accepted as members of the chapter."

"The statutes of Fulda," Kircher answered gently. "Not the statutes of Saint Benedict, if you would bother to read them, nor even the statutes as established by your founders. Not Saint Boniface; not Saint Sturmius; not Saint Lullus. That provision developed during later history, and can be changed. If you do not want to ossify and have Fulda cease to exist for a lack of recruits, it even should be changed. Even now, it is the*conventus* of commoners among your monks that serves the parishes of the*Stift* , not the noble chapter monks. How many parishes are there? Fifty?"

"About that many. Parishes, that is. But no one would dare to challenge the statutes. Why that might lead to a commoner being elected abbot some day."

"Banz did. That abbey also had these requirements from the middle ages that only nobles could be accepted in the chapter. When so much of Franconia became Protestant, there were no longer enough surplus sons of Catholic nobles to fill the slots. More than half a century ago, they obtained an exemption from the bishop of Wuerzburg that they could accept commoners, both as members of the chapter and students at the school."

"The bishops of Wuerzburg . . ." the abbot began.

"Yes, I am entirely aware of the conflict," Kircher said patiently. "After all, my father was working for Abbot Balthasar von Dernbach when Bishop Echter conspired with the knights and nobles of the*Stift* to expel him because of his efforts to impose Catholic reform. The commitment of Bishop Echter to Catholic reform was unquestionably genuine. However, if by getting rid of a reforming abbot, he might extend the authority of Wuerzburg over the abbey and its territories . . . with the full intent of reforming them himself, of course . . . Well, bishops are not angels. Echter was a great man, but he is not likely ever to be sainted, I suppose."

"I will never compromise Fulda's independence by asking the bishop of Wuerzburg to authorize a change in our statutes. Even if I could, as a practical matter, since Hatzfeld has opted to remain under the protection of the archbishop of Cologne rather than to return to his see and come to terms with these

allies of the Swede."

"You could always just ask the pope himself," Kircher suggested. "That would not affect the legal independence of Fulda from Wuerzburg in any way. Presuming, of course, that you are willing to defy your fellow nobles and their desire to drop extra sons into sinecures with guaranteed incomes."

* * *

Brian Grady had given a fair amount of consideration to the music for the special service, had beaten the bushes for people who were willing to sing*just this once* and scheduled four extra rehearsals. They were using the good choir robes, too. And he had a right to do something Irish, he thought.

A couple of years before, he had gotten a copy of*How the Irish Saved Civilization* with a medieval-looking dust jacket for Christmas. He suspected that his sister had gotten it out of a discount bin at the grocery warehouse in Fairmont, but, hey, in a family the size of the Gradys, the motto had to be, "Affordable Christmas presents are where you find them." He'd read it. He agreed with every single word, so he had given it to the new national library. Other people ought to read it, too, and understand the importance of being Irish.

Besides, he didn't intend to read it again. It was sort of out of his field. When he wasn't directing the choir, he taught physical education.

Be thou my vision, O Lord of my heart,

Naught be all else to me, save that thou art;
Thou my best thought, by day or by night,

Waking or sleeping, thy presence my light.

Basically, he was using the version that appeared in most hymnals, set to the "Slane" melody, which he loved.

Be thou my wisdom and thou my true word,
I ever with thee and thou with me, Lord;
Be thou my great Father, and I thy true son;
Be thou in me dwelling, and I with thee one.

He had thought that the abbot might like it, since he came from a family of knights and knights went around fighting in armor. Tournaments and jousts and stuff like that. He'd heard the story, of course, that the only reason that the guy was here in Grantville now, getting a special service, was that he hadn't been killed in the same battle when the king of Sweden was killed, up-time.

Be thou my breastplate, my sword for the fight;
Be thou my whole armor, be thou my true might;
Be thou my soul's shelter, be thou my strong tower:
O raise thou me heavenward, great Power of my power.

So take that, Martin Luther, you blasted German, Brian thought. A good Catholic Irishman wrote a fine Irish Catholic version of "A Mighty Fortress" seven centuries before you were even born.

Riches I heed not, nor man's empty praise:
Be thou mine inheritance now and always;
Thou and thou only the first in my heart;
O Sovereign of heaven, my treasure thou art.

So far, so good. The choir was on key. Brian threw a smile to his sister Linda at the organ, who pulled a few stops. Then for the final verse he broke the choir out into the other arrangement he had, not in the hymnal—John Leavitt's, the one set to "Thaxted" from the Jupiter movement of Gustav Holst's "The Planets."

Great God of heaven, my victory won,
May I reach heaven's joys, O bright heaven's Sun!
Heart of my own heart, whatever befall,
Still be my vision O Ruler of all.
Great God of heaven, my victory won,
May I reach heaven's joys, O bright heaven's Sun!
Amen!

* * *

"Outrageous, of course," Tino Nobili said to Schweinsberg after mass. "I'm sure that you agree with me. A woman as organist and women in the choir! Irish folk music and modern composers rather than plainsong. Trust me, sir, this is not the direction the entire church had gone, not even in the up-time world. I was a member of the Pope Pius X Society. I have their mailings. I will give you some of them to take with you, to read."

The abbot thanked him gravely. Personally, he had enjoyed the music and no one expected a parish in a small city to follow all of the liturgical prescriptions for the choir of the Sistine Chapel, of course. Or even those for the choir of the Abbey of Fulda.

Fulda, February 1633

"Do you prefer to be called Mrs. Stade or Miss Bachmeier," Wes Jenkins asked.

Clara thought a moment. "I am a widow, so I am certainly not Mrs. Stade, even though Herr Piazza calls me that. Caspar has been dead for almost two years. How about Ms. Bachmeierin? I understand that Ms. covers every marital status for your people. And I do prefer the feminine form of my family name. I am a woman, after all—not a man. Being called Bachmeier sounds very odd to me."

"That'll do fine," Wes said, leaning an elbow on the mantel.

They were all standing up. The cleaning crew had taken the table and chairs out of the conference room so they could mop and wax the floor.

She was leaning against the window sill. The administration building had windows with sills. The immediately past abbot, a guy named von Schwalbach, had torn down some medieval monstrosity about twenty years ago and built a nice little renaissance-style palace with corridors and paved floors and big windows with clear glass panes.

The afternoon sun came in at an angle, making a bright narrow stripe across her hair and face. And body, above the waist. He found himself thinking that whatever she called herself, she was definitely a woman. A fine-looking woman. He hoped that the late Caspar had appreciated his good luck. Then he realized that he hadn't cared what a woman looked like since Lena was left up-time.

"If you don't mind," Andrea Hill said, "since we will be sharing an apartment, I will call you Clara. And call me Andrea, please."

She looked at Wes watch the German woman and thought,*chaperone time* ? Lenore, Wes' older girl, wasn't much younger than her own daughter Kortney. She'd have to ask Kortney, next time she wrote, if Lenore and Chandra had their fingers in whatever pie led up to shipping Ms. Bachmeierin over to Fulda. She knew they had been worried about having their dad walking around like one of the living dead for so long.

Well, she couldn't blame Wes. She'd felt that way herself for quite a while after her husband Harry died back in 1997, but gradually the world had turned itself back right side up. She had felt it worse when her first husband left her in 1965. Harry, at least, had not wanted to go. But if Bob hadn't left, she wouldn't have gone back to school and gotten the A.A. degree that led her to this job, or married Harry, or had her two girls, so . . .

"When's the abbot due?" Harlan Stull asked.

"In about a half an hour. Maybe I should have asked you first, but I thought it was reasonable to agree when he wanted to go to the monastery first, before he came over to meet all of you. He's supposed to be in charge of it, after all," Clara answered.

"Supposed to be?"

"I'm not sure how much support he has. Neither is he, really. That's one thing he wants to find out."

"Brief me," Wes said, thinking he might as well find out sooner than later what caliber of person Ed had picked.

"Well, he was elected abbot in 1623. Three years later, he brought in some reformed Benedictines from someplace in Switzerland to help him reorganize the abbey. The year after that, that was in 1627, after he

got their report, he talked the pope into sending the nuncio—that was Pietro Luigi Caraffa back then—as a papal visitor, a kind of inspector to conduct a visitation of the abbey. Caraffa issued a whole batch of reform decrees that pointed out that according to the rule of Saint Benedict, authority belonged to the abbot. They were pretty critical of the way the noble-born monks in the Fulda chapter had encroached on it. After Caraffa left—he couldn't very well stay here permanently—the provosts, the monks who administered the abbey's property, got up a rebellion against the changes."

She paused for breath.

"I can see," Fred Pence said, "that I'm going to end up with stripes and checks and spots on my orange helmets."

Clara looked at him, then ignored him. "The monks who are in Cologne now mostly belonged to the opposition party. The pope confirmed the changes, but it didn't make much impression on them. The chapter seemed to be absolutely dead set on keeping the privilege of only admitting nobles. I didn't get a very clear view from the abbot as to whether they object to praying in the same room as ordinary people or if they just object to sharing the abbey's income with them. If the latter, the New United States has probably solved one problem for him."

"From what I hear," Orville Beattie said, "the party of his monks that headed off to Cologne probably won't be too enthusiastic about the fact that he's reappeared. The leader of them, a guy named Johann Adolf von Hoheneck, would have been elected as abbot by now if Schweinsberg had gotten himself shot on schedule, so to speak. Hoheneck is feeling a bit deprived, they say. Just gossip, you understand."

Orville had been sent up from Wuerzburg by Johnnie F.—Johnnie Haun, that was—to run Steve Salatto's brainchild of a "Hearts and Minds" program in Fulda. Up-time, Orville had worked for the state and farmed part time, but he was in the military down-time. "Hearts and Minds" was a military program. Having another up-time military person in Fulda made Derek Utt feel better, even though Orville spent most of his time out of town. Although Orville was Presbyterian, which made the liaison guy from the landgrave of Hesse, a guy named Urban von Boyneburg, feel better about things too, he seemed to be finding his feet pretty fast in dealing with Catholics and Lutherans.

"Okay, Hoheneck in Cologne. Probably one of the bad guys." Harlan Stull made a note.

"That's where they took the archives," Andrea said. "Can Schweinsberg get them back?"

"I don't know," Clara answered honestly. "We can ask him to try. But Hoheneck is on very good terms with Ferdinand of Bavaria, who is the archbishop and elector of Cologne. Through him, of course, he can get support from Duke Maximilian of Bavaria and the Leaguists and the Imperials. That probably means that he isn't going to pay much attention to long-distance instructions from Schweinsberg here in Fulda, vow of obedience or no vow of obedience."

"You know," Orville was saying, down at the other end of the room where a different conversation had broken out, "one thing that we really ought to do, when we get a chance, is ask von Boyneburg to come in and give us a briefing about dealing with the imperial knights. Apparently, here in Fulda, they have a legal status that's different from the knights in Hesse. More like the ones in Franconia."

Harlan Stull sighed. "I'll try to fit it into the agenda one of these days."

* * *

"Well, if your supporters followed you when you went off with Tilly's army, and Hoheneck's bunch ran off to Cologne with him, carrying the archives, who were the monks we found at Fulda when we got here?" Wes Jenkins thought this was a reasonable question.

"The Saint Gall monks," the abbot answered. "In the abbey. The monks who belong to the*conventus* of commoners don't reside here permanently. They are parish pastors and only come to the abbey for meetings and special events. And, then, some lay brothers, who do things like caring for the gardens, are still here."

"That means? Saint Gall monks?" Wes wondered if Schweinsberg missed having the administration building as a palace. He was living over in the abbey dormitory these days.

"In 1626, I asked the Benedictine Abbey at Saint Gall, that's in Switzerland, to lend us some of their monks to reform us here at Fulda. That is, to show us how to conform more closely to the rule of Saint Benedict. They kindly sent us several, to serve as models for chanting the offices and following the church year, things like that. When the rest of us left for fear of the Swedes and Hessians, they stayed."

"Reform you?"

"Introduce the Tridentine reforms. The prescriptions of the Council of Trent. That was about, oh, seventy years ago. It went on for years. The council, I mean. The abbots have been trying to bring Fulda into conformity ever since, without a lot of luck. The noble families are thoroughly entrenched in the chapter. The younger sons they send us are usually fairly hard-working when it come to doing things like administering the abbey's estates. That's what nobles do, after all. But they rarely have much enthusiasm about performing specifically monastic duties."

"What's the problem?" Wes was genuinely curious.

"We've tried, goodness knows. The Jesuit school. The seminar for future priests. And we've made some progress. Getting rid of the concubines, for example."

"Concubines?"

"Wives, really. Instead of living in little monastic cells, seventy-five years ago the chapter monks mostly lived in their own houses in town with their wives and children. Not that it was legal for them to have wives, of course, which is why they were called concubines by the reformers."

"Didn't Catholics get a bit uptight about married monks?"

"The laity? No more than they did about married priests in general, really. Not as long as they did the rest of their work okay. It's the hierarchy that disapproves of clerical matrimony, mainly, not the people. At the time of Trent, even the dukes of Bavaria tried hard to get the pope and cardinals to accept married priests."

Wes shook his head.

* * *

"The part that is properly in Franconia is called the 'Rhön and Werra' canton of the imperial knights." Urban von Boyneburg looked at the up-timers and pointed to the wall map.

Derek Utt had made a blown-up map on a dozen pieces of paper taped together, from a little one in a down-time atlas. Ortelius, it was called. Ed Piazza had ordered a dozen copies of the atlas and distributed them around. It wasn't a very good map and the original had been made fifty years ago, so it was out of date, but it was better than any other map of Fulda that they had.

"That's basically over here. You do know what an imperial knight is? And where the Werra river runs?"

Wes Jenkins nodded.

Boyneburg continued. "Most of the Franconian imperial knights are Protestant-Lutheran, in fact. Their families accepted that confession almost a century ago and they have been able to maintain it in spite of pressure from the bishops. So are the ones here in the Fulda region, in what we called the Buchenland or, in Latin,*Buchonia* . Most of the abbot's own family is Protestant, for that matter."

"What's a '*Buchen*,'" Fred Pence asked.

Boyneburg looked blank. He could point to a*Buchen* if they asked him to, but . . .

"A beech tree," Orville said in English. "This region is heavily wooded with beech trees."

Boyneburg resumed the lecture. "In October 1631, right after the battle of Breitenfeld, the imperial knights of the Fulda region had a meeting right here in the city and decided that they would like to join with the Franconian knights as the 'Buchen Quarter.' Since then, they have negotiated with the king of Sweden. He has been willing to recognize them as immediate, with no territorial lord standing between them and him, as long as they pay him tribute. Which is plenty, by the way. The Ebersburgs are expected to come up with twenty imperial*thaler* monthly, the von Schlitz have to pay forty*thaler* a month. Even the Buchenau family, which isn't very prominent or prosperous, is being assessed thirteen*thaler* monthly by the Swedes, to support the Protestant cause."

"Where does Hesse-Kassel stand on this?" Derek Utt asked.

"Well, you must know that Hesse does not have any imperial knights within its lands. The lower nobility of Hesse, its*Ritterschaft* , is subject to the landgrave. Not*reichsfrei* . They are*landsässig* , vassals of the landgrave rather than of the emperor. Or of the king of Sweden, since he has now put himself in the emperor's place, for all practical purposes."

Wes Jenkins nodded.

Boyneburg went on. "I'm afraid that my lord the landgrave rather alienated the imperial knights of the Buchen Quarter last year, by moving to make them*landsässig* in Fulda. That was before your town's arrival of course, when he hoped to be able to attach Fulda as one of his permanent possessions. Of course, the abbot of Fulda would also like to make the knights within his territory his vassals. Any territorial ruler would, naturally. It's just that Hesse and Wuerttemberg have been more successful at mediatizing them—well, at mediatizing us, since I am a member of the Hessian nobility—than most other principalities."

He paused. "The imperial knights of Buchen, ah, resist the idea of giving up their freedom and liberties to become the subjects of a territorial ruler very strongly."

"So, at the moment, they are still classified as free knights, but they are paying through the nose for the privilege. A lot more than their taxes would be if they were subjects of the abbot," Wes Jenkins summed

up.

Boyneburg nodded his agreement.

"Clara, since the NUS is sitting in the former chair of the abbot as Fulda's head of state or civil government, where do you think we stand as far as our relations with these guys are concerned?"

"These knights in the Buchen are in a little different position than those in Hesse. They do, most of them, have some lands that are allods. That is, lands that they own in their own right and for which they do not owe any feudal dues. Just taxes to the emperor. Or, now, to King Gustavus Adolphus. But most of them also hold other lands as fiefs from Fulda. So the New United States is, I think, their feudal lord, their *Lehensherr* , for those lands, as well as being their*Landesherr* ."

"We don't want to be anybody's f . . . never mind, feudal lord," Harlan Stull exploded.

"Well," Andrea Hill said, "until the New United States gets around to changing the land system, we are. Not as individuals, but the administration is. So we are, collectively, as representatives of the government. That's pretty clear from the land title stuff that I've collected."

Fulda, February 1633

"I'm it, I think," Mark Early said. "The whole Special Commission on the Establishment of Freedom of Religion in the Franconian Prince-Bishoprics and the Prince-Abbey of Fulda. At least as far as Fulda is concerned. That's what my orders say. It's what my wife Susan says, too, and since she's working directly for Mike Stearns, I guess it's for real."

"How do you intend to do it, on top of all the rest of your work?"

"If you want me to do it, Wes, Derek's just going to have to make someone else bookkeeper and paymaster. Either pull one of the kids into the job or use a down-timer."

"Derek, do you see any options to that?"

"No, to tell the truth. They say that they'll send Joel Matowski out to help Mark, but he can't be freed up until late summer or early fall, probably. And when he does get here, he'll have a steep learning curve."

"That's the down side. Is there an up side?"

"Fulda's a lot smaller than Wuerzburg or Bamberg, so maybe one guy can do it," Andrea offered.

"I don't think so," Wes said. "Even if we free up Mark, he's going to need help and it obviously isn't going to be an up-timer. Do we have any down-time staff who could lend a hand, at least with scheduling the hearings and taking the minutes. Filing the records. Stuff like that."

Harlan Stull shook his head.

"What about Clara?" Derek asked.

"Clara?"

"Well, it looks to me like a lot of what this Special Commission is going to be doing is trying to get the Lutheran imperial knights and the Catholic abbot and chapter at the monastery to co-exist and leave the ordinary people who belong to each other's religion alone. She's already been working with the abbot, so she should have a head start, so to speak. Then if we can get someone local . . . Andrea, did you ever hire a lawyer full time?"

"I did. But the Special Commission can't have him. I'm not just paying him full time. I'm using him full time. Maybe he can recommend someone else."

"Oh, sure, they always can," Harlan said. A younger brother or a nephew or their cousin's brother-in-law."

Roy Copenhaver shook his head. "Aren't we supposed to avoid nepotism?"

"Hey, until we get an actual civil service, it works as well as any other hiring system. The trick is to make sure that we fire the incompetents who don't work out, and even with a civil service they didn't manage that, up-time. Neither West Virginia nor the feds."

"Are you a cynic?"

"I'm a realist. Okay, I'll ask Clara about it; see if she'd be willing to," Harlan said. In addition to his other duties, he was personnel manager.

* * *

"How about Herr von Boyneburg?" Clara asked.

"But he doesn't even work for us," Mark Early protested. "He works for the landgrave of Hesse-Kassel."

"But it would be a good idea for someone who works for the landgrave of Hesse-Kassel to learn about separation of church and state. Wouldn't it?"

"Yeah, I guess so. When you put it that way," Harlan answered. "Seems weird, though."

"They have their own problems," Clara said. "People in the border villages along the Werra who even now walk over into neighboring Lutheran territories to take communion, after all these years and in spite of the fact that they've made it illegal. Maybe they could learn just to let them do it in peace. Plus there's an occasional Calvinist imperial knight with lands well inside Fulda territory, so they could learn to make it a trade-off. The abbot stops hassling the Calvinists and Lutherans. The Calvinists stop hassling the Lutherans. Then the Lutherans could stop hassling the Calvinists, too, maybe. Or at least stop calling one another crypto-Calvinists."

She smiled. "Are you sending an observer to the Rudolstadt Colloquy?" she asked.

"H . . . that is, heck no!" Harlan answered.

* * *

"Do we need a pilgrimage church up on top of a hill?" Andrea asked.

Roy Copenhaver winced. "You know, sometimes I ask myself if this place is worth all the grief that it's causing us. There can't be more than fifty thousand people in*Stift* and town of Fulda, combined. Total. If that many. Maybe forty thousand if you count out all the subjects of somebody else who are just living here."

"We did get Fulda as sort of an appendage to Wuerzburg and Bamberg, I think. An afterthought. It's nowhere near as big. Nowhere near as exciting. But if Mike hadn't taken it on, it would have gone to Hesse-Kassel, like Paderborn and Corvey did. And the landgrave would have done the same sort of stuff to the folks here as he's doing to the folks there, so maybe it's worthwhile," Andrea answered.

"What's he doing?"

"The longer he manages to hang on to them, the tighter he's squeezing the Catholics. He started out in 1631 just swiping valuable stuff, but being pretty generous about letting the ordinary people keep their religion. But as time goes on, first one church and then another gets handed over to the Protestants; first one and then another Catholic priest gets exiled, till there's just one little church in each town where he allows Catholic services. He fires the Catholic schoolteachers. Then the Jesuits have to go; then the Franciscans and Benedictines and the other religious orders. Then he introduces a religious test for holding public office. So far, he hasn't made it illegal to be Catholic, but it's definitely creeping Calvinism, now that he sees some prospect that Gustavus Adolphus will grant them to him as permanent possessions. SOP, pretty much, for seventeenth-century Germany when a ruler who has one religion takes over a territory that has another."

"What about this pilgrimage church Andrea was talking about?" Fred Pence asked.

"According to Steve Salatto," Wes said, "the purpose of this exercise is to keep resources out of the hands of the CPE's opponents. So they can't use them to oppose the CPE. Are the pilgrimages compulsory?"

"Not by law, no," Andrea answered. "I suppose that if a priest sticks someone with a pilgrimage as a penance, it's sort of morally compulsory. But the constable or bailiff isn't going to make the guy go."

"Does it have income?"

"Just what the pilgrims donate. It doesn't have farms or estates or anything attached that support it with dues."

"I don't think we need it," Wes said. "If it's going to cost him money to keep it up, pay the priests and so on, give it back to the abbot, land title and all. Make that a rule. If it's going to cost the abbot money, give it back to him. Parochial schools, the seminary for boys who are studying to be priests, and stuff like that. If it's going to generate income, keep it."

He leaned back and yawned. "Solomon had nothing on me when it came to snap decisions."

Ways and Means
Fulda, April 1633

"Your administration has abolished the tithes," the abbot said.

"Yep." Roy Copenhaver took a drag on his clay pipe. He still missed cigarettes, but the region right around here was about the largest manufacturer of clay pipes in Europe, from cheapos to deluxe.

"Not just the tithes that the church actually collected itself, but the ones that other investors had bought up as well."

"So they can sue us. They probably will. It doesn't make any difference in the long run. Everybody's busy. Congress didn't get around to making a law. Mike Stearns didn't get around to issuing an executive order. Steve Salatto didn't get around to sending us any general edict. We had to do something. Whatever Wes decided to do about it, somebody would have sued us, so we just wiped the things out as far as Fulda is concerned. We're building legal fees into the budget request for the next fiscal year."

"As the secular government, you are now collecting the taxes."

"That's true, too."

"And you have confiscated the abbey's estates that produce income in the form of rents and dues."

"Ummn-hmmn. That's what you get for running off with Tilly and hanging out with Wallenstein, pardon my French."

"So how do you expect me to support all the things that you have so*generously* returned to the church? How do I pay for roofs for the schools and matrons for the orphanages and priests for the churches?"

"Pass the plate. That's how we did it up-time. If they really want the stuff, they'll cough up the money. Nobody says you can't lay a guilt trip on them, even. Try sermons. My wife Jen and I were Pentecostals, up-time. That's how our preachers did it."

"Were?"

"Are. But our church was outside the Ring of Fire. There's an old retired preacher, Reverend Chalker, who was caught in it. Must be eighty years old. He was visiting Lana Soper at the assisted living center when it hit, and he's been holding tent services. We should manage to get a temporary building up fairly soon, but there aren't very many of us."

Roy looked at the abbot. "Stop feeling sorry for yourself. You're in a lot better shape here in Fulda than we are back in Grantville. You saw Saint Mary's. Nice church building, right downtown. Bet you never got out into the Five Hollows to take a look at our little arrangement."

"I suppose there's something to be said for poverty," the abbot said. "Beyond the fact that it's in the Rule of St. Benedict. Which got more than a little stretched over the centuries, as you can tell."

"What?"

"Without the income attached to the prebends, the only monks who are likely to come back to the abbey are the ones who are willing to live like monks. Which is what I've been trying to get them to do for a decade."

* * *

"I think that it might be a good idea for you to send them to Rome," Johann Bernhard Schenk von Schweinsberg said, tapping the pile of pamphlets. That's why I brought them over."

The rector of Fulda's Jesuit*collegium* ran his fingers thoughtfully through his beard.

"I rather liked Father Mazzare, you understand. And Kircher has a lot of respect for him. But if the holy father is to come to an informed decision, then he should know that the views of the up-time Catholics were no more monolithic than ours are. I, ah, feel rather sure that Herr Agostino Nobili of Grantville would be happy to share all the rest of his piles of pamphlets with the*magisterium* ."

"I will send them," the rector countered, "to Father General Vitelleschi."

"Understood."

"There is no sense in encouraging the more reactionary elements in the College of Cardinals."

"I suspect," the abbot said, "that they are perfectly capable of sending researchers to Grantville to look up the Modernist controversy in the encyclopedias for themselves. The Grantvillers will make no move to stop them. The up-timers are strange that way. Most of their leaders appear to be strongly committed to the belief that ideas should flow freely, even when they disagree with them."

"What did you make of Herr Piazza?" the rector asked. "In some ways, he may be more important for the church than Stearns himself, since he is Catholic and can be expected to understand our problems more clearly. Does he share that belief?"

"Almost certainly, since he is a strong supporter of the priest. It is as if they drink it in with their mother's milk. Father Mazzare played a piece of music for me on his 'phonograph.' Oddly, it contained German lines. 'Die Gedanken sind frei.' He said that it was folk music. I was not able to determine why they think that folk music and popular music are two different genres. After all, "*Volk*" and "*populus*" basically designate the same concept."

The conversation meandered on throughout dinner, adding the mystery of "country" as a designation for music. Why would "country" differ from "folk" or "popular," since certainly the great majority of the people lived in rural areas?

Fulda, May 1633

"It could have been a disaster," Derek Utt said, "but it wasn't. Figure that once more we've managed to squeak through by the skin of our teeth. No religious vigilante of any existing persuasion even shot at Willard Thornton, much less hit him."

"I must say," Wes answered, "that the last thing we needed at this juncture was an LDS missionary."

"So you sicced him on Wuerzburg and Bamberg? So Steve Salatto needs him? So Vince Marcantonio needs him?" Andrea Hill asked.

"They have more resources to deal with it. At least, Steve does. I'm not so sure about Vince. Bamberg is worse understaffed than we are."

"Hey," Roy Copenhaver interrupted, "Willard Thornton's not a bad guy. He's worked at the Home Center for years. I thought you said that people were just interested in his bicycle."

"I had the pewterer pour a new mold," Fred Pence said, "just in case. I'll be running out of sports pretty soon, but LDS is golf. I've still got tennis in reserve in case somebody wanders in making converts to something else."

"I haven't heard that he caused any problems," Orville Beattie added. "I don't think that he made any converts here in town, but he left a lot of pamphlets and flyers behind, so I'll keep an eye out."

"Here in town?"

Orville sighed. Derek Utt was getting pretty quick on the uptake.

"On his way out, pushing that bicycle, he stopped at Barracktown. Over there where you've planted the wives and not-exactly-wives of the down-time soldiers. Plus their kids and the usual crop of peddlers who sell them stuff that we won't issue. I haven't managed to get rid of those sutlers; throw one out and two more sprout up, it seems like. I think he made more of an impression there than he did in Fulda. Now maybe the women just wanted to wallpaper their cabins to keep out the drafts, but he must have left several pounds of printed paper behind him."

"What on earth about the Mormons would appeal to the wives of a bunch of mercenaries?" Harlan Stull asked.

"They seemed to find the emphasis that husbands should be sober, orderly, hard-working heads of their households and spend their free time going to church meetings . . . umm, an improvement on the*status quo* if they could get it?"

"I thought that Gretchen had vouched for these guys as okay," Harlan protested.

"Okay by the standards of seventeenth century mercenaries, which leaves quite a bit of leeway, so to speak. Once you get to know them," Derek answered.

"It's not as if any of the existing churches spend much time trying to improve conditions for those poor women and children," Andrea said. "There's sort of a vacuum there."

"And nature abhors one. Thanks, Orville. I guess. At least for letting me know," Derek said.

"By the way," Andrea asked, "what have we done about getting a grade school set up out there?"

They all looked at her.

"Well," she pointed out, "the people in Fulda won't let those kids go to the town schools."

"Prejudice," Derek said.

Everybody started to talk at once.

"Not in the district limits. There were rules about that up-time, too. We've made a little settlement where there wasn't one before."

"Can we make the town take them?"

"Not if we're serious about self-government."

"We're not in the school business."

"What about Ronnie Dreeson?"

"Maybe the abbot could set one up."

"Using what for money? We've swiped all his revenues. It would have to be a charity school of some kind."

"It's a peculiar religious mix out there at Barracktown," Derek said. "People who are supposed to be Catholic and a bunch of different kinds of Protestants, all tossed in together. Plus one Turk that I know of who has a Portuguese wife. And an Armenian."

"If we'd quartered the soldiers out in the villages, the kids could have gone to the village schools."

"We're not quartering soldiers on civilians, remember. That's why we have the barracks. And Barracktown."

"Anyway, the village schools around here are all Catholic and the Protestants wouldn't want to send their kids. There's no such thing as an irreligious school. Non-religious school. Nondenominational school. Whatever."

"Maybe Clara can think of something."

"H . . . I mean heck, Andrea. Why'd you have to bring up those kids?" Harlan stood up, gathering his papers together. "As if we didn't have enough on our plates."

This Troublesome Monk
Bonn, Archdiocese of Cologne, May 1633

"You could file a complaint of witchcraft against him," the man in the gray hood suggested. "It's much more likely to attract public attention than simple collaboration with the enemy."

"Against the*abbot* ?"

Johann Adolf von Hoheneck would prefer to be abbot of Fulda himself, rather than just the ex-provost of the ecclesiastical estate of Peterberg, which had been confiscated by the New United States in any case, which made him just a chapter monk of Fulda now, much to his chagrin. Still, Schweinsberg was the abbot and he found the idea of bringing him down a little distasteful. Particularly in the way of setting precedents. A person had to think long-term.

"Isn't the abbot the only person we were talking about?" someone muttered under his breath.

Hoheneck looked at the Capuchin, shaking his head. "We don't have anyone on the ground there to file it, even if the rest of us agreed. The only monks who stayed were the ones from Saint Gall, who surely won't. Perhaps a few of Schweinsberg's supporters have come back, but not in any numbers, as far as I have heard. They wouldn't either, in any case."

"Maybe if we made it worth someone's while, one of them would." The archbishop's confessor was a tenacious man.

"Not in the chapter, then," Franz von Hatzfeld said. "But, surely, there must be someone in the town of Fulda? Someone among the city councilors and guildsmen?"

"Why not file the accusation against one of the up-timers?" Hoheneck was uneasy at the prospect of trying to bring down the abbot. The more he thought about it, the uneasier he got. The bishop of Wuerzburg wasn't the only high ecclesiastical official with a desire to expand his jurisdiction. He did not consider Cologne to be exempt from it-especially not when the archbishop was a Bavarian duke. How would it be to his advantage to bring down the abbot if the archbishop mediatized the abbey in the process?

"I don't think that is prudent right now," Hatzfeld said. "But you could include the down-time woman they sent to advise him in the accusation. That always allows for all sorts of sexual innuendoes."

"But the abbot . . . who's going to investigate the charge?" Hoheneck asked. "And how, since the up-timers have abolished witchcraft as a crime?"

"Why, the bishop of Wuerzburg, I presume," the man in the gray hood said smoothly. "Fulda does fall within his ecclesiastical jurisdiction, after all. Or so he contends, at least." He looked directly at Hatzfeld, who was, after all, the bishop of Wuerzburg. "The Holy Father has never ruled definitively in the matter."

"Sufficient unto the day . . ." someone muttered, just loudly enough to be heard.

"And it remains a crime under imperial law," Hatzfeld continued, "so when the ursurping Swede is expelled . . ."

"The bishop of Wuerzburg," Hoheneck bowed to Hatzfeld, "isn't there. Just his suffragan. The bishop of Wuerzburg is here, in Bonn."

He frowned. Hatzfeld was here in Bonn—under the archbishop's thumb. Hatzfeld's family was supporting him, so he wasn't living on the archbishop's charity the way most of the rest of the refugee Rheinland clerics were, but he still didn't like the way it looked.

"Why, I should think that is all to the good," the archbishop's confessor said, also bowing to Hatzfeld. "No problems stemming from delayed correspondence. No interceptions by the Jew Nasi and his agents. It should be possible for us to make our wishes clear to him directly. And he should be willing. Unless he is, like Schweinsberg, falling prey to the temptation to save whatever he can save."

"I have been quite consistent in my refusal to deal with the up-timers," the bishop of Wuerzburg said.

"So you will handle it—the investigation into the witchcraft allegations—from here?" The question came from the clerk who was taking the minutes.

"If we aren't all running away from the Swede by the time the investigation is ripe." That was the same unidentifiable under-the-breath muttering. Hoheneck wished that the men who had not been invited to the table were sitting across from him rather than behind him. He couldn't tell who it was.

"Hatzfeld can't very well go down to Fulda and hold hearings right under the up-timers' noses, much less use judicial torture while they are occupying the*Stift* lands," he said. "Who's going to take the depositions and keep the protocols?"

"Could we possibly get Hesse to file the complaint?" a Jesuit sitting next to Hatzfeld asked.

"Hesse? He's one of Gustavus Adolphus' strongest allies," the Capuchin said.

"Sure, but if he thought that he could bring the abbot down . . . not realizing that we have a candidate waiting in the wings to take his place." The Jesuit tapped his index finger on the table. "It wouldn't have to be Hesse himself. He's bound to have agents in Fulda."

"He has a regular liaison with the up-timers," Hatzfeld said. "One of the Boyneburgs."

"Too close. Too public," Hoheneck protested.

"Could we talk Neuhoff into going back?" the Jesuit asked. "Pretending to be reconciled to Schweinsberg? Then a couple of months later, horrified at what he has seen since his return, devastated with shock, appalled . . . you know the script . . . he files the allegations."

"It might work," Hoheneck answered. "Hermann has a pretty good reputation. And he's scholarly. He corresponds with Grotius, you know."

"Every literate person in Europe corresponds with Grotius, I think."

Hoheneck resisted turning his head to see where the*sotto voce* comments were coming from.

"That's no special distinction," whoever it was continued.

"Schweinsberg could hit back by accusing Neuhoff of Arminian sympathies," the Jesuit said. "That's why Grotius had to get out of the Netherlands. That would turn off the landgrave of Hesse pretty fast."

"Arminianism is a Calvinist fight—not a Catholic one." The Capuchin pushed back his hood.

"Hesse-Kassel is a Calvinist," Hoheneck pointed out.

"What difference does that make? If a slur works, use it."

Hoheneck shook his head with annoyance. It was the voice from behind him again.

"Where do we start?" That was Hatzfeld.

"Let's hire somebody to write a pamphlet," Hoheneck suggested. "Just to test the waters."

"Obscene illustrations?" the muttering voice behind him asked in a hopeful tone.

Hoheneck turned around and glared at the group of men. "If you pay for the woodcuts," he said. "Whoever you are."

"Lovely," the voice continued. It came from a little man wearing a flat hat. "The serpent's long, long tongue extending and . . ." He smiled.

"This is," the Capuchin said, "the archbishop's palace. Control your imagination, Gruyard."

* * *

"Hoheneck's getting cold feet," Archbishop Ferdinand's confessor said.

"They've never been warm," the archbishop answered. "He's a cold fish, overall. Your putting Gruyard to mutter behind him today got more of a rise out of him than I've ever seen before."

"How much practical assistance can we expect from your brothers?"

"Very little, this summer. As you know, Maximilian and Albrecht have more immediate concerns. The recent events in Bohemia have been very worrisome. Austria needs Bavaria's support."

He frowned at the Capuchin. "For that matter, we have more immediate concerns than Fulda, too. One of Gustavus Adolphus' generals with twenty-five thousand men looking at my eastern border is one of those thoughts that makes worries about the status of Fulda seem comparatively insignificant."

"Great oaks from little acorns grow," his confessor said piously. "Moreover, I doubt that there are more than ten thousand men looking at your eastern border. And those are mostly Hessians under von Uslar rather than Swedes."

The archbishop frowned his displeasure.

"Think of Fulda as the first domino in bringing down the CPE and unraveling? Something?"

"As a grand conspirator," the archbishop said, "you . . . never mind. And get Gruyard out of my palace. I don't care where you put him, except not in any other building that belongs to the archdiocese, but get him out. He makes my flesh crawl."

"He's good at what he does."

"That's the problem."

Where Are We and What Are We Doing Here?
Stift Fulda, June 1633

"Where are we?" Mark Early asked.

"This is Neuenberg," the abbot answered. "I served as provost here before I was elected abbot. Among several other places where I was provost. That's why I came along today, to introduce you to the people here."

"What does a provost do?"

The abbot started a long explanation.

"Middle management." Clara Bachmeierin inserted the English term into the conversation.

Mark nodded.

The breeze picked up. Clara grabbed for her files. She was acting as clerk today. Urban von Boyneburg's horse boy picked up a couple more rocks and gave them to her for paperweights.

"Why are we sitting under a tree instead of inside?" Mark asked.

"It's a linden tree," Boyneburg said.

"Why are we sitting under a linden tree?"

"People around here conduct important business under the village linden tree. Always have, as far as I know. Well, maybe not in the dead of winter or a pouring rain, but generally that's where the village council meets and anything else important gets done."

Mark sighed. "When in Rome." He put on his sunglasses.

"I'd take those off if I were you," Clara recommended. "There will be better times to introduce the peasants of Neuenberg to modern technology."

He put them back in his breast pocket and squinted into the sun. A bunch of people were coming out of the chapel.

"Bailiff," Mark said, "announce that the session of the Special Commission on the Establishment of Freedom of Religion in the Franconian Prince-Bishoprics and the Prince-Abbey of Fulda will come to order."

An elderly farmer looked at him. "The bailiff's sick. Something he ate, probably. You don't want him here."

"Do you have an under-bailiff?"

"Nein."

"A constable?"

"He's the bailiff."

"Somebody," Mark said, "announce that the session of the Special Commission on the Establishment of Freedom of Religion in the Franconian Prince-Bishoprics and the Prince-Abbey of Fulda will come to order."

None of the villagers moved.

Urban von Boyneburg got up and announced it.

"Pardon, Your Honor," the elderly farmer said, "but we would like to bring to Your Honor's attention that it's a good day for making hay, and we would just as soon be done with this business by the time the dew goes off."

Fulda, June 1633

"It's gross," Andrea Hill said. She was holding the pamphlet by one corner, between her thumb and her index finger, as far away from her body as she could get it. "And the town is plastered with them."

"Come on, Andrea," Wes Jenkins said placidly. "Whatever it is, it can't be that bad."

"Oh yes it can." She threw it onto the table in front of him. "Poor Clara. They put her name in the thing, in the caption to that hideous picture. And all of our soldiers I saw out on the street were looking at the placards that go with it and going 'har, har, har!" so*you* "—she stopped and pointed at Derek Utt— "can just get up and go out there and make them stop it."

Derek reached over and pulled the pamphlet out from in front of Wes. Thumbed through it once. Got up.

Orville Beattie came into the conference room, carrying another copy. Wes grabbed the first one from where Derek had dropped it. As he looked through it, his face went white and pinched.

"Clara I understand," Fred Pence said as he came in, "but who's Salome? The one in the Bible?"

Andrea glared at him. He realized that it was one of those mornings when it was just generally a bad thing to be a male human being, and a worse one to be a son-in-law.

"The prioress," Andrea said. "At the Benedictine convent here in town. You've surely walked past it. Ascension of Mary, it's called. There's a plaque by the door. She's been here since 1630. She and three others came from the abbey of Kühbach in the diocese of Augsburg to start it up. They've been through hard times, what with the Hessians and everything. And us, considering that we confiscated the estates that the abbot had assigned to support them. They're dirt poor. There are days when they're going hungry, until Clara or I take the rest of our supper over to them. This is just so . . . unfair. Her name is Salome. Salome von Pflaumern."

Harlan Stull raised an eyebrow. "Does that explain why your per diem has gone up, you and Clara. You're feeding six rather than two? Or ten rather than two? How many are there?"

"Well, we felt bad about it. If we hadn't taken away all of the abbot's income-producing property, the provosts on the abbey's farms would be sending them something to eat, at least. And they could fix the roof. It's leaking into the chapel."

"Why the hell do they name girls Salome, anyhow?" Orville Beattie asked. "It seems like a bad omen from the start."

"Not that one," Andrea said. "Not the one with the seven veils and John the Baptist's head. There's

another one, who stood next to Mary at the cross. She's a saint. Girls get named for her."

"More than enough room for confusion, if you ask me," Fred said. He was clearly going to be on Andrea's shit list today no matter what he did, so he figured he might as well earn it.

"Where did Mark and the rest of the Special Commission go today?" Wes Jenkins asked.

Andrea looked at his face and shivered.

"Neuenberg," Orville Beattie answered. "That's not far."

"Go get them. Bring them back. Take a dozen guards with you, at least. God, this is sick!"

Orville moved fast.

"Andrea," Wes spit out. "Get your tame lawyer in here this minute. And the mayor and the whole city council."

* * *

"We've let you keep your gate guards. Did somebody bring this smut in through one of the gates. If so, which one, and when?" Wes Jenkins glared.

The captain of Fulda's militia shook his head. "There has been no large shipment of printed matter for several weeks, sir. Not to the best of our knowledge. I do have confidence in my men."

"Are you interested in the other option, then?"

"Which other option?" Adam Landau asked rather hesitantly. He was the mayor. It was his job to speak for the others, no matter how dangerous an activity that currently appeared to be.

"That some sick creep brought a manuscript and the woodcuts into Fulda in his private baggage and it was printed here?"

The council members looked at one another. Then at the militia captain. Then back at one another. This possibility was even less pleasant.

The head of the clothmakers' guild cleared his throat. "Ah. Freedom of the press, sir?" Esaias Geyder said tentatively.

Wes blew up. "There are a few little things for you to think about. First, this is a military occupation force, when you come right down to it. Fulda has not adopted the constitution of the New United States. It hasn't even voted on whether or not to adopt it. And if your friendly local collection of imperial knights doesn't manage to get its act together, it's not likely that there will be a vote any time soon, because we won't be able to organize an election. Not that things here are any worse than they are in the rest of Franconia, but that's neither here nor there.

"Second." He looked at the head of the clothmakers' guild. "There are some things that I am simply not having happen in the name of freedom of the press. Andrea's lawyer here can write back to Grantville. He'll have somebody send the information, if you want to footnote me, but there really are court decisions about this stuff. Freedom of speech doesn't extend to yelling 'fire' in a crowded theater. 'Your right to

swing your fist ends where it collides with someone else's nose.' That sort of stuff."

"What aren't you going to have happen here?" the militia captain asked.

"Witch hunts, first and foremost. How old are you, Captain Wiegand? Old enough to remember them?"

Wes waved at the group. "You have to be old enough, Kaus. You're at least sixty, and they were only thirty years ago. What about you, Rabich? I've never heard that you suffer from memory loss when it comes to your property rights. You're here at city hall hassling Andrea every other day. Has 'burning alive' slipped your mind? Not a few cases, precisely. Somewhere between two hundred fifty and three hundred, from what we've been able to find out."

Otto Kaus swallowed nervously. Eberhard Rabich took a half-step back.

Wiegand stepped forward. "They're old enough, sir. So am I, for that matter. I was ten at the last burning, but for three years, Judge Nuss took the school to watch."

"Took the*school* ," Andrea Hill gasped.

"It was a regular sort of thing, ma'am." He turned back to Wes Jenkins. "Herr Kaus is a bit nervous. Some of his relatives were burned. Some of Frau Rabich's relatives, too. It's hard for families to get away from the taint, somehow."

"Well, and shouldn't it be?" Lorenz Mangold, new head of the butcher's guild, pushed himself to the front. "Think about it. Anna Hahn, old Hans' widow, got away. And then had the gall to come back and live here after Judge Nuss was arrested and put in prison. But there's bound to have been some truth to the accusations, or the bishop of Bamberg wouldn't have burned her son as a witch a few years ago, would he? Not when he had risen as far as chancellor of the diocese. I say that where there's smoke, there's fire."

The other members of the Fulda city council appeared to have forgotten about the up-timers. They had all turned and were staring at Mangold.

Captain Wiegand backed inconspicuously out of the room. Derek Utt got up from the table and followed him. By mutual, unspoken, consent, Wiegand ran to summon his elite guard unit; Derek headed for the corridor where the MP office was.

The situation in the city hall conference room was deteriorating rapidly. Rabich pointed at Mangold, yelling that he was related to Judge Nuss' second wife. Mangold retorted that Mayor Landau was married to a cousin of the Kaus woman who, like Hans Hahn's wife, had escaped. Mangold raised accusations of witch-friendliness against the late Landgrave Moritz of Hesse-Kassel. Someone pointed out that the prince of Isenburg-Buedingen had also sheltered accused witches who escaped. This led to rancorous comments by Mangold about the role of the imperial cameral court, which had denied that Fulda could exercise jurisdiction over non-resident accused witches.

Derek Utt came back with two soldiers per council member. This crowded the room, but quieted things down quite a bit.

Wes Jenkins wasn't exactly happy, but he was feeling rather vindicated in his decision to push hard. It looked like this sort of thing was still a lot closer to the surface than anyone in the NUS administration had realized before.

With Lorenz Mangold, at least. The rest of them were looking at the man very unhappily, with sort of *Return of the Creature from the Black Lagoon* expressions on their faces, Wes thought.

Wiegand came back.

"Mangold has had a man staying with him for several days," he reported. "He left first thing this morning. I've sent the guard company to try to track him."

"Description?" Derek Utt asked. "Do you have a sketch?"

"He was wearing a brown doublet with leather buttons."

"Half the men in*Stift* Fulda are wearing a brown doublet with leather buttons."

"Some people prefer bone buttons," Esaias Geyder said. He was wearing a brown doublet with bone buttons himself.

"How many people here have seen Mangold's guest?" Captain Wiegand asked.

Nobody admitted to having seen the man.

"How did you find out about him?" Derek Utt asked.

"Mangold's cook. She's been having to serve up an extra plate each night, but he didn't give her any extra market money."

"Is there anyone around you can take to her to and get a sketch from her description?"

"There's the painter who lives in the Saint Severi church," Rabich suggested nervously. "He's been there for four years, now, through imperials and Hessians, and the New United States. Sleeps in the sacristy and paints murals on the wall. They're not bad. The sexton brings food in for him and empties his slops. That's all he's asked the vestry board for—food and his paints."

"Go get him," Wes said to Captain Wiegand.

"Don't frighten him," Andrea added. "Tell him that he's not in trouble before you haul him over to the city hall. Even better, just take him to Herr Mangold's kitchen."

Wiegand shook his head. "I have the cook here."

"Then take her to the church."

"No, this has to be official. I'll bring him here. Nicely, ma'am."

* * *

"He really, really, did not want to come with me," Captain Wiegand said. "But it's just as well I brought him. Otherwise, he wouldn't have seen the placards."

"Are those still nailed up all over town?" Wes exploded.

"Nobody said to take them down."

"Well get somebody out to*take* them, then. Before Ms. Bachmeierin and the abbot get back. I'm not going to have Clara see that filth."

Derek Utt gestured. Two soldiers per council member became one soldier per council member.

"Why is it important that he saw the placards?" he asked.

"He says that he knows the artist," Wiegand said. "Recognizes him from his style. He says that it's as plain to an artist as a signature, if two men have ever worked in the same studio. Last time he heard of this woodcut maker, he was working in Cologne, in Bonn, really, since that is where the archbishop resides, for a Lorrainer named Felix Gruyard."

"Does that name ring a bell with anyone?"

Head shakes all around. Negative.

"Who's the printmaker?"

The artist himself answered. "Alain van Beekx. A Netherlander."

Head shakes again.

Wes looked at the artist. "This van Beekx. What does he do for a living?"

"He makes filthy pictures, sir."

"Well," Wes said, "I'm happy to meet you. One man today who tells the truth, the whole truth, and nothing but the truth."

"That isn't the whole truth, sir," the artist said.

Wes waited.

Waited some more.

"He forges documents. That's how he makes most of his money. If someone needs 'evidence' and doesn't have any, van Beekx will come up with it. There's a lot of 'evidence' against me on file in Cologne. It looks very real. Any court would convict me on it. If he's involved in this, with Gruyard, there's probably a lot of 'evidence' against you tucked away somewhere, just waiting until some court asks for it. If you don't mind, I'd just as soon go back to the church, sir. It's been a very peaceful place for me these last few years."

"As soon as you make a deposition and sign it."

The artist's shoulders drooped. Andrea's lawyer, whose name Wes could never seem to remember, led him out.

Wes dismissed the city council. They left the conference room but kept milling around in the vestibule.

Captain Wiegand closed the door from the outside.

"Okay," Andrea said, "tell me something." She picked up the pamphlet with which the morning had started, again between thumb and forefinger.

"What?"

"Who from here went up to Cologne and described Clara to this van Beekx creep? The "Salome" doesn't look a thing like the prioress. It's just a sort of generic nun, and not even wearing the same kind of habit that the Benedictines do. But the "Clara," even if there wasn't a name to the picture, you could almost recognize."

Orville Beattie looked at it. "The abbot, too. Even when he's a snake."

"It's this van Beekx who's the snake," Wes spit out.

"Yeah," Fred Pence said. "Pretty good caricaturist, though."

"Or maybe someone sent them sketches. If that artist ever came out of the church and took a look at us, who would notice? He didn't look very happy about making a deposition. I've got an appointment, guys." Dropping that happy thought on the table, Orville left.

* * *

They delegated the delicate task of acquainting Clara with the existence of the placards, all of which had been pulled down before the Special Commission returned from Neuenberg, and the pamphlet, to Andrea.

"My goodness," Clara said. "How . . . unusual . . . to see my own face on a depiction of the Whore of Babylon. Because I speak with you foreigners, I suppose. The tower of Babel and all that. And the prioress is the Whore of Rome because she's a nun, I suppose."

She giggled. "But the idea of depicting the abbot as a snake with a forked tongue is really rather ingenious. Considering what he is doing with it."

"Aren't . . ." Andrea's voice quavered. "Aren't you even a little bit shocked?"

"Well, I don't like the witchcraft accusation," Clara said pragmatically. "Those can be dangerous, over here in Franconia. But I've seen woodcuts like that all my life. With this kind of iconography."

"Where?"

Clara looked at her with surprise. "Illustrating Lutheran pamphlets about the nature of the pope as the anti-Christ, of course. We read some of them in confirmation class."

Andrea started to make strangling noises.

"Fourteen-year-olds have a rather crude sense of humor, of course. Our favorite was one of the pope. You could tell it was the pope because he was wearing a triple tiara, but he had breasts that drooped down to here"—Clara gestured expressively—"and a big swollen belly covered with fish scales and was giving birth to the Leviathan, that's the great beast from Revelations, while the devil stood behind him and

. . ."

"Stop," Andrea said. "I think I get the idea."

Clara thought a moment. "I expect that they, the Catholics, make that kind of picture about us, too. But I wonder why Catholic propagandists in Cologne, if you say that's where this came from, used the Whore of Rome image? That's ours, not theirs."

After she had thought for a couple of minutes, Andrea began to wonder about that herself.

* * *

"Mark," Andrea said the next morning. "I think there's something we need to talk about. About the Special Commission. There's something that came up when I was talking to Clara that made me think that, maybe, the road to getting seventeenth century Europeans to get to the point of religious live-and-let-live is several thousand miles longer than any of us ever dreamed."

"Maybe," Mark said after he had heard her out. "Maybe. But you're forgetting something."

"What?"

"She*is* working with us on the Commission. And so is the abbot. Captain Wiegand is really pretty decent. No matter how much of this conditioning they got as kids."

* * *

July seemed to go by in a blur. Sitting in Wuerzburg, Steve Salatto got the latest mailbag from Fulda and wished that he had better communications. In Grantville, Ed Piazza pointed out to Arnold Bellamy that the folks in the field were pretty exposed and that he was planning to continue letting them function on a fairly long leash. No, he said. He really did not think that Wes went overboard. Under the circumstances. Maybe a little ballistic, but not overboard.

In Fulda, the news arrived that the CPE delegations were off to Paris and London to conduct negotiations. Everyone figured that getting ready for that must be why they hadn't been getting much in the way of instructions from the Department of International Affairs lately. The Special Commission held a bunch more sessions.

And ever since the affair of the placards, Wes kept hovering around Clara in a very overprotective manner, fretting every time the Special Commission went out of town until it was back safely. The rest of them thought it was funny, but he didn't even seem to realize that he was doing it.

Mark Early reported that they would finish up Fulda proper by the end of the month and start on the imperial knights the beginning of August. One at a time, he groaned. The imperial knights of Buchen Quarter were so jealous of their individual prerogatives that they hadn't been able to agree on a common time and place to hold even an introductory meeting so he could explain what the Special Commission's assignment was.

"Like hell they'll get away with that," Wes exploded.

* * *

The imperial knights of the Buchen Quarter were obviously not happy to be meeting in Fulda. Well, in a mown hay field outside Fulda. However, the combined visitation of the military administrator's regiment and the Fulda militia to each of their territories, individually, had been enough to persuade them of the prudence of agreeing.

Actually, Derek Utt thought, looking around the field, his soldiers weren't looking too bad these days. They had decent uniforms, finally. He wouldn't have chosen sickly orange himself—that was the best way he could describe the color—being more used to camouflage. But nobody expected them to be fighting in the field, so Frank Jackson hadn't sent them greeny-brown combat uniforms from Erfurt or Magdeburg. He hadn't sent them blue dress uniforms styled more or less after those used during the American Civil War, either—these being a product of what Melissa Mailey, in one of her more acerbic moments, called "reenactors' nostalgia" combined with the relative cheapness of cloth dyed with Erfurt woad. Dennis Stull, the civilian head of procurement, had just sent Derek a bank draft and a recommendation to do his best.

His best, when delegated to Harlan Stull's fiscal frugality, had turned out to be sickly orange. Good quality English fabric, Harlan said, but a bad dye lot. Or at least some Frankfurt merchant's bad guess as to whether or not the color would be popular. They'd paid the wives to make the uniforms up, which kept the money in the family as much as possible, so to speak.

They were even developing some*esprit de corps* . They were calling themselves the Fulda Barracks Regiment, these days. One of the sutlers had found them a set of regimental colors. Derek suspected that the banner had started life as some rich lady's party dress, but it had white and orange satin, so they were happy. And a logo. He couldn't make out what the logo was supposed to be—it looked to him like a lopsided blob—but it had one, and they had chipped in to pay for the flag themselves. Their weapons weren't as fancy as the ones carried by the imperial knights, but then his guys weren't planning on riding around in tournaments. They just planned on riding around looking mean. So far, he had been able to get horses for about half of them to ride at a time and was dual-training them as dragoons. Out in the boondocks like this, Derek had decided, flexibility came in ahead of doctrine any day. He didn't care what the army's organizational table called them. He just had a job to do. Horses were a convenience, frequently very handy in a pinch, even if your label said "infantry."

Of course, the horses had to be taken care of, but he was paying some of the older kids from Barracktown to do that.

Which reminded him that Andrea was still nagging about a school out there.

Plus, the regiment wanted an anthem.

He had learned that the Swedish custom was to sing Psalm 46—that was*Ein feste Burg*— and then start Psalm 67, starting to advance before the singing finished. That would not work for the Fulda Barracks Regiment. Too many of the men had been on the receiving end of those advances, so to speak. He'd have to think about an anthem. The first requirement was that it had to be something that neither the Catholics nor the Lutherans could claim. The second requirement was that it had to be something he was willing to hear them sing every day. And an anthem ought to be uplifting. Martial, militant, but not some dirty marching song.

* * *

Derek's eyes jerked back to the center of the field when Wes Jenkins yelled again.

One of the knights was waving around a copy of that obscene pamphlet with Clara Bachmeierin's name in it. Refusing to receive the Whore of Babylon as an envoy from the Special Commission.

Wes went on yelling. For a Methodist, he had picked up a colorful vocabulary.

The guy with the pamphlet was backing down.

"I don't see what you're screaming about," another one of them—Karl von Schlitz—was saying to Wes. "You had them all torn down before one person in ten saw them. And it cost enough to get van Beekx to . . ." His voice trailed off. "Add in the Whore of Rome too."

Wes had stopped yelling. He was smiling. "Just how, Herr von Schlitz," he asked, "do you happen to know how much it cost to do that?"

Derek moved his men in to form a double line, closer to the knights. Wiegand brought the city militia to replace them around the edges of the field.

This contributed a lot to the continuation of rational discussion. By the end of the afternoon, all of the imperial knights of the Fulda region were willing to swear upon their Bibles that Clara Bachmeierin was a desirable member of the Special Commission.

A couple of them even expressed the view that the Special Commission was desirable.

Not von Schlitz. Over some protest by his colleagues, he was "voluntarily" remaining in Fulda for meaningful discussions with the NUS administration about alleged treasonous contacts with the archbishop of Cologne.

Fulda, August 1633

August was a pretty good month. The NUS administration got news of the first flight of the Las Vegas Belle. Wes dipped into his own pockets and held a party for the whole town of Fulda. Barbequed mutton. As he said, his pay had mostly just been accumulating, since there really wasn't a lot in Fulda that a person could spend it on.

Harlan Stull wasn't sure how many of the guests really believed in airplanes, but the government wasn't paying for it, so it wasn't his problem.

Then the news of the second Battle of White Mountain arrived. The abbot asked Roy Copenhaver if he was pardoned for having been hanging out with Wallenstein. If he was, he suggested, it would be really nice to have some of that income-producing property back, because otherwise the clergy of*Stift* Fulda were going to have a pretty hungry winter. Most of the population hadn't really gotten into the swing of voluntary church contributions.

"Herr Piazza," he said, "says that if I am to save souls, I must use carrots rather than sticks."

"Sounds like Ed."

"So." The abbot smiled. He was missing more than a few teeth. "I need a supply of carrots. Please."

Roy didn't give him any property back, but the administration did agree to turn over the wine from two formerly monastic vineyards for him to sell. Mostly because Harlan didn't want to get into wine marketing, which seemed to involve international cartels and a lot of other really complicated stuff, but Schweinsberg seemed a lot happier after he had sold it.

And Johnny Furbee married his German girlfriend. She was from Barracktown, though, so it didn't gain them any brownie points with the citizens of Fulda.

Fulda, September 1633

What with the news of the Dutch defeat at Dunkirk, September was a downer. People started to ask questions like, "Are they*ever* going to remember to rotate us out of here?" About all that could be said for September was that the Special Commission wound up the hearings and hired a wagon to take the accumulated paper to Grantville. Joel Matowski turned up, too late to do the Special Commission any good, really, but by having him there, Derek Utt would be able to send his other up-timers, in rotation, for some R&R in Grantville.

Since the wagonload of paper was going anyway, Wes sent along Karl von Schlitz under guard. Mostly to counter the rumors that he had been torturing the man. Let the Nice Nellies see for themselves. Anyway, Derek and Wiegand hadn't managed to get much out of him. Mangold was Catholic, so it was easy enough to see why he might have linked himself up with the monks who had gone into exile in Cologne. But von Schlitz was Lutheran. It didn't seem to add up.

Well, it hadn't, until Andrea's drab little lawyer pointed out that a lot of Lutherans hated Calvinists even more than they did Catholics and von Schlitz was one of them. Combine that with the landgrave of Hesse's efforts to make the knights his vassals before the NUS showed up, and figure that the NUS was allied with the king of Sweden who was allied with the Hessians, who were Calvinists . . .

It made sense, in a warped sort of way. But now Ed Piazza could worry about it. And maybe Francisco Nasi could get more out of the guy.

Wes wrote a memo to Ed Piazza on the topic of needed legal reforms, with a courtesy copy to Steve Salatto. In the course of it, he mentioned that the administration in Fulda had made several arrests in connection with an outbreak of scurrilous pamphlets, commented that he had refused to authorize the use of judicial torture in the case, and added that, by the way, the pamphlets had been produced on a very ingenious down-time designed and manufactured duplicating machine marketed by a Herr Vignelli from Bozen. He sent this memo off in the same mail bag as his memo on the topic of needed improvements in the postal system, which was appended to his memo on rural transportation which accompanied his urgent memo in regard to cost overruns in the land titles department.

Fulda, October, 1633

As Harlan Stull said to Fred Pence, being in Fulda was sort of like being the little ball out on the far end of a stick that was just barely plugged in to some kid's Tinker Toy construction. What with the abysmal radio reception, if it hadn't had a post office on the mail route from Frankfurt to Eisenach, it could have

been on the moon. They didn't learn about Wismar until two weeks after it had happened. They didn't learn that the CPE had turned into the USE with Mike Stearns as prime minister for a couple of weeks after that.

One thing they learned from a private courier who rode the route from Erfurt to Frankfurt regularly, two weeks before the letter from Grantville showed up, was that the guard on von Schlitz hadn't been heavy enough. A batch of riders, presumably from his personal guards and presumably led by his two oldest sons, had run down the wagon on a pretty deserted stretch of road, shot the two guards and the teamster, and taken him off it. He had disappeared. Gone to ground somewhere. He had kin all over the place.

The Fulda Barracks Regiment put up two memorial plaques. It had not occurred to the men to commemorate their fallen, but Derek had suggested it.

Nobody except their relatives told them anything about what was going on in Magdeburg. They had to read it in the newspaper. That was even how Wes found out that the landgrave of Hesse-Kassel had signed on to some grand railroad project. In the future tense, of course, but at some point people would be coming through to survey a railway route running through Hersfeld and then through Butzbach, down to Frankfurt am Main and then through to Mainz.

"Has Hessen-Darmstadt signed on?" Clara asked. "Butzbach belongs to an uncle of the landgrave of Hessen-Darmstadt, not to Kassel. They'll have to go through quite a bit of Hesse-Homburg before they even get to Butzbach. That belongs to another uncle of the landgrave of Hessen-Darmstadt."

Wes didn't know. The paper hadn't said anything.

"The line is supposed to run twenty miles north and then twenty miles west of here, more or less," Harlan Stull grunted. "It shouldn't affect us at all."

"Once they actually build the thing," Roy Copenhaver pointed out, "it will open up new markets. Even for farmers this far away."

"Yeah, but that will be years. Why didn't they bring it down this way, and then to Frankfurt along the Kinzig River valley?"

"To do that, they would have to go through Schlitz and the*Reichsritter* wouldn't cooperate. He's Lutheran, so Oxenstierna didn't want to piss him off."

"I remember that stuff. Schlitz beer. One thing about up-time that no one will miss. Horse's piss."

* * *

In Grantville, during the first week in October, Ed Piazza, while digging through the latest stack of usually worthwhile memoranda churned out by Wes Jenkins, found the three paragraphs that specifically addressed the production of scurrilous propaganda pamphlets by means of inexpensive down-time manufactured duplicating machines, yanked the page to the top, and radioed the essential data to Francisco Nasi in Magdeburg.

Fulda, November 1633

"So," Wes Jenkins announced, "it is now official. We are the United States of Europe—the USE—rather than the CPE. Mike Stearns is prime minister of the new nation—it's going to have a British-style parliamentary system rather than being modeled on the up-time USA. Ed Piazza's the president of the NUS now, but it's only a state in the new country."

It took the rest of the staff meeting to digest this information.

"Hey, Orville," Wes said on the way out, "Who the hell is Brillo?"

"You know, the cartoons. The stories. Contrary down-time ram. Some of them were published in the *Grantville Times* . Why?"

"Steve Salatto wants to know how he connects to the peasant revolt."

Fred Pence frowned. "What peasant revolt? I'm out in the precincts every week and I haven't heard anything about a peasant revolt."

"It hasn't happened yet," Orville said. "It may happen in Wuerzburg and Bamberg."

"I'll tell Steve that I never heard of the stupid ram." Wes paused. "Why are they having a peasant revolt?"

"I dunno."

* * *

Roy Copenhaver wandered into the "Hearts and Minds" office. "Orville?"

"Yeah?"

"Who's actually running these estates that the NUS confiscated from the Abbey of Fulda?"

"They aren't like plantations with overseers and things. Mostly, after we abolished the stuff connected with serfdom, we've just let the farmers get on with it. I guess the village councils are running them."

"Who's collecting the rents and taxes and stuff?"

"We're collecting the taxes, using the district administrators, the*Amtmaenner* . As for the rents and dues, the real estate stuff, ask Harlan or Andrea. That's their department. All I can tell you is that we haven't had any major complaints from the granges on my watch."

* * *

"Andrea, who's doing the actual collection of revenues from the estates the government holds?"

Roy looked around. Andrea's little domain was buzzing, with a half dozen clerks clustered around ledgers and box files. Harlan had complained a lot about the cost of reconstituting the records. It was way over budget. She had looked at him and answered, "Well, if the original estimates were realistic,

nobody would ever authorize starting*any* project at all. You have to break it to them gradually."

The clerks were jabbering away in the standard means of communication, which was German with a bunch of English terms thrown in. Terms like "paper trail" and all sorts of acronyms. The up-timers did the same thing when they spoke English. There might have been English words for technical terms like *landsässig* and*Stift* that von Boyneburg had taught them, but it was certain that not a single one of the Grantvillers in Fulda knew what they were. Anyway, mostly, except when the Grantvillers were by themselves, they all spoke German. Or Gerglish.

Andrea was wearing the down-time full skirts that went right to the floor. She said they were warmer. The one she had on today was a sort of dull gold color, like the shade that used to be in the crayon boxes. She was also wearing a gray knit sweat shirt with a hood and a wool up-time ladies' suit jacket. It was pink. Because she spent her days with pens, pencils, and dusty ledgers, she had added, in this world without dry cleaning, a set of down-time removable linen cuffs to keep the pink wool clean at the wrists. Roy couldn't have described this ensemble to his wife Jen in any detail if she had asked. He could and did stand there hoping, inarticulately but profoundly, that the ensemble did not represent the wave of the future as far as fashion was concerned.

Andrea shook her head. "Ask Harlan. We do the titles, not the collections. This office just figures out *who* owes us and sometimes how much. Not to mention how far the payments are in arrears."

* * *

"You don't mean it," Roy said.

"Well, it's not as if I have a budget for a property management staff," Harlan protested. "It was the only thing I could think of that made sense. So I contracted it out."

"The abbot's collecting them?"

"Straight percentage."

"Is he scamming? Skimming? Doing any of the other stuff with which West Virginia state employees are so familiar?"

"I don't think so, but how the h . . . heck should I know. It's not as if I have a staff of auditors at my disposal."

"Wes is going to have a cow."

A Bunch of Damned Anarchists
Fulda, December 1633

"I tell you," Wes proclaimed, "these imperial knights are a bunch of damned anarchists. I've never seen anything like it. Each and every one of them thinks that he's a little universe all to himself and not bound by anything that anyone else decides. Certainly not by a majority vote. Not even by a majority vote of their own organization that they set up themselves and voluntarily joined."

"That is," Clara said, "their definition of liberty, after all. That no one else can tell you what to do. Or, for the*Reichsritter* , liberties. Not to be subject to someone else. To determine one's own destiny freely."

"What have they done now to set you off?" Fred asked.

"I was over at the Buchen Quarter meeting. They're still trying to decide what they want to do about the election next spring. Some of them, like Ilten, are willing to take part in it. He was actually radical enough to say that he would accept a majority vote. Some of them, von der Tann right at the head of them, don't want anything to do with it. The Till von Berlepsch guy got up and talked for a good hour about how they defied the abbot back in 1576 and his ancestor was involved. Riedesel, over on the western border—he has lands at Eisenbach and Lauterbach—won't have a thing to do with anything that might put him under Fulda. His family has been fighting the abbots for centuries, it sounds like. Fighting as in armies and such. When his ancestor introduced the Reformation, it just gave them one more thing to fight about."

"It's not as if they ought to be worried that the NUS administration is going to try to make them Catholic again, just because we're working with the abbot on some stuff. Haven't we managed to make that clear?" Fred's frustration was plain in his voice.

Urban von Boyneburg, who was still in Fulda keeping an eye out for any possible advantages that might accrue to the landgrave of Hesse-Kassel, started another mini-lecture. "It's clear to them that*you* won't. And that for as long as you are around, Schweinsberg won't. But even though they're anteing up a lot of money to Gustavus Adolphus, they're trying to hedge their bets in case he doesn't win the war—keeping a weather eye out on what the imperials and the Leaguists are doing and the possibility that this abbot could be tossed out and replaced. It's not as if there's no precedent, since they tossed one out themselves, back in grandpa's day. There are several of them who think that if there's another tilt and the emperor comes out on top, they could plead 'coercion' for making the tribute payments to Gustavus Adolphus and get off lightly, but not for formally voting themselves into the USE and State of Thuringia. Or even for letting themselves be voted in."

"So what did they do, finally?" Fred asked Wes.

"Tabled it and adjourned until after New Year's."

Fulda, January 1634

"Great party," Fred said. "Post-Christmas, pre-New-Year, whatever you want to call it. I'm really glad that Kortney and Jared could come over to Fulda for the holidays. It was nice of the nursing school to let her take a whole month off from her classes."

"Well, they're calling it an internship and they got an exchange," Andrea answered. "She's substituting here for Gus Szymanski so he and Theresa could go home and spend Christmas with his sister Garnet. She's had a lonely life. Gus will be talking to the EMT students about his experiences during a year of actual field practice."

"True. Kortney was up before I was this morning, heading out to the barracks to check on people."

"Where's Jared?"

"Clara took him with her over to the abbey. One of the novices is going to show him around, and he'll write a report for having done a field trip, since he's missing a couple of weeks of school."

"Did you watch Wes dancing with Clara?"

Fred grinned. "Cheek to cheek and all that, for all that they are still officially on 'last name' terms. They had so much trouble prying their hands apart that I suspected Jeffie Garand of daubing their palms with super glue at first. Do you suppose Wes thinks that nobody has noticed that he is the only one of us who *doesn't* call her by her first name. We ribbed him about it. He says that he's 'way too old' for her to be interested in him."

"Well," Andrea said. "*I* had fun at the party. Wes danced with Clara. Johnny danced with Antonia. Jeffie danced with Gertrud. You danced with Kortney. And *I* got to dance with all the other guys. I was the belle of the ball. Too bad it didn't happen forty years ago, when it would have been more exciting."

"Yeah." Fred got up. "Better get to work, I guess. It's too bad that Eden and Jen couldn't come for the holidays too, but at least Harlan and Roy get to go over to Grantville occasionally to deal with the budget people."

* * *

"That fruit candy was good. Nice change from the usual stuff," Harlan said.

"Where did it come from?"

"Andrea's lawyer ordered it from Frankfurt. He knows someone down there who imports it. The fruit is called currants."

"Wes didn't eat much."

"He was too busy dancing with Clara."

"Would you call that dancing?"

"Wes is like me." Harlan grinned. "Methodists of the generation who still suspect that dancing is sinful, but think that God won't really be offended if you just get out and the floor and walk around, without actually performing a dance step. And ignore the music. If you have no rhythm at all, you're practically not dancing."

"Clara looked good at the party," Roy said. "She dresses a lot sharper than Andrea."

Fred grinned. "According to Kortney, her mom doesn't have any fashion sense at all."

"That," Roy said, "is really a relief to hear."

"How long do you suppose it has been since Wes asked a girl for a date?" Derek asked.

"He started going steady with Lena in high school," Harlan answered. "And he's what? Fifty, maybe? Fifty-two? Enough older than me that we were never in school together."

* * *

"Do you think," Andrea asked, "that Wes would be 'way too old for you' to marry?"

Clara looked at her. "If Caspar were still alive, he would be several years older than Mr. Jenkins. Plus, he would be much sicker."

Andrea raised her eyebrows.

"Caspar was always having a physician in to bleed him or going to the apothecary for a dose of medicine. If a disease existed that was not fatal, Caspar had it. At least, he thought that he had it. After thirteen years of that, I was really rather surprised when he actually died."

Clara shrugged. "It was his mother's fault, I think. He was her only child who lived and she was always afraid that he would die."

Her eyes twinkled. "I am pretty sure that Mr. Jenkins is feeling quite healthy. He never takes time off work to be sick."

Her face became more serious. "I wish, though, that he was not always so angry. Not at people. To us, who work for him, he is kind. For all of the people in Fulda, he is anxious. Concerned. But angry at the world. At the things that happen."

"Wes didn't want this job. Ed Piazza twisted his arm to get him to take it. Grantville doesn't have that many people with degrees in public administration. I sat in on some of their arguments, before we came over here. Wes pointed out that he didn't handle this kind of thing. He was a manager, but he was deputy director of the Marion County parks department. The worst threats he faced on the average day were cracks in the asphalt on tennis courts or vandalism to the catchers' cages on the baseball diamonds. Anything worse than that, he called the sheriff's department and let them take care of it. He had a staff that worried about scheduling conflicts when more than one family reunion wanted to use the same shelter on a Sunday afternoon."

"But he does it wonderfully. This job. I admire him so very much."

"But he thinks that he's a fake, Clara. Every morning he gets up thinking that this will be the day that some Leaguist with a lot more regiments than he has figures out that he's just blowing smoke and moves into the spot on the map that he's responsible for, slaughtering and raping his way across it. That's why he's so uptight about everything. Because it's his duty to protect it now, and he's not at all sure that he can."

"Perhaps he can't. But he tries his best, every single day." Clara crossed her arms across her chest, shivering a little, as if she were cold. "That's one of the reasons that I certainly would not object . . . But he should not marry me, you know, because I am barren. He has daughters, but if he marries again, he should choose a woman who can give him sons."

"What's the other reason you would not object?" Andrea was genuinely curious.

"Oh, there are many. He has a good job, his social position is suitable, my family would not protest, all of those. But the main one . . ." Clara winked. "When I dance with him, I do not think that he is 'way too old' at all."

* * *

Andrea looked down at her daughter from her perch on the desk. "Why do you suppose?"

Kortney shrugged. "It doesn't make sense. It just is. Line up a couple of hundred men and let a woman take a look at them. In front of a hundred ninety-nine, every internal organ from her eardrums to her kidneys will get together and announce, 'I would rather kiss a toad.' Perfectly nice, reasonably good-looking, reasonably sober, reasonably hard-working guys, a lot of them. Not losers. No obvious way to tell them apart. Then there's the one for whom the same organs all stand up and shout '*Boing*.'"

"Maybe it's an anti-promiscuity gene," Andrea said. "But I know what you mean. It's probably the reason that the ladies who eat lunch at Cora's back in Grantville repeat the sentence 'I just can't tell what she sees in him' as often as they do. Bunch of gossips."

"Well, that's true. Because if you take the hundred ninety-nine leftovers and let another gal look them over, she'll react to one that the first one ignored completely. Some girls miss out on it, of course. They're mostly the ones that we keep seeing at the clinic, over and over."

"Clara's never said a word against her husband. But you pick up things, rooming together as long as we have now. To use your word, I have a suspicion that he was a platter of deep-fried toad, served up by her family, and she just made the best of it. So she hasn't had much experience with these kinds of feelings. And, of course, she's handicapped by wanting what she thinks is best for Wes instead of just wanting what she wants."

"Which is Wes." Kortney giggled.

"And even though he was obviously going "wow" the first time he saw Clara, somewhere deep in his heart, Wes thinks that he's still married to Lena. And he's*such* an upright citizen."

"And you say the ladies at Cora's are gossips, Mom. We aren't?"

"Well, not malicious. Just trying to figure out a way to dig them out of this impasse."

Kortney frowned. "Did Clara ever have a gyne exam? That is, did the doctors or midwives or whatever have any idea why she never got pregnant?"

"You could ask her, I guess." Andrea folded her arms and stuck her chilly fingers up her sleeves. "That is, if you have the nerve."

"That's one thing you learn in nursing school, Mom. Not to be afraid to ask embarrassing questions. They really ought to make it a prerequisite for being admitted."

"Well, I don't think that she will be embarrassed. That's one thing that I've been learning this year. I guess I just assumed that since back in Victorian times, people were more prudish than we are, then a couple hundred years before, they would be even more prudish. It doesn't work that way. People in the seventeenth century haven't gotten to Victorianism at all yet. Honest to God, some of the things that Clara says just make me blush."

* * *

"Well," Kortney said, washing her hands, "I can't tell on the basis of a regular gyne exam that there's any reason at all why you didn't have children. All your organs are there, in the right place, healthy, no polyps,

no obvious endometriosis, none of the stuff that we look for first. Maybe it was your husband's problem."

She launched into the next set of embarrassing questions.

"You've got to be kidding. On the*average* ?" Kortney snorted her coffee. "Every three*months* ?"

"Well, the first five years that we were married." Clara said. "After that, less often. You understand that Caspar was afraid that spilling his seed too often would weaken his vital humors and they were not strong to begin with. I know that one physician did tell him that it would improve his likelihood of begetting heirs if he increased the frequency to what was recommended in the Old Testament, but he changed doctors."

"I didn't even know that the Old Testament recommended anything."

"Twice a week, except during a woman's courses. At least, that was what the physician told us. Although he added that he himself, on the basis of experience, thought three times in the week was preferable for couples who desired offspring. Perhaps in these latter days men's vital forces are weaker than they were in biblical times. After all," she said seriously, "the Old Testament patriarchs lived much longer, too. It was not until much later that things became worse, so that today 'our years are seventy, or eighty if we have the strength.'"

Buchen Quarter, January 1634

"It's an interesting concept," Ruprecht von Ilten looked at the other imperial knights of the Fulda region. Unfortunately, the questions that they had tabled before Christmas could not remain tabled indefinitely, so they were having another meeting.

"Why do we all have copies of the constitution of the New United States?" Johann von der Tann was stomping around the room.

"Because Herr Wesley Jenkins sent them to us, to read before he makes his presentation."

"Are you trying to be deliberately naive, von Ilten?"

"Apparently, in the spring of 1632, when its representatives met with the king of Sweden, the ambassadress, the Abrabanel woman, made this point." Claus von Berlepsch was representing his brother.

"Which point?" Eberhard von Buchenau asked.

"That the purpose of the constitution was not to take away rights, but to establish them."

"Her name is Rebecca, the Abrabanel woman. Rebecca the deceiver, who misled Isaac into granting the blessing to the wrong son. They can't expect us to believe this," von der Tann protested.

"It's an interesting idea. If, of course, it is true." Von Ilten rather hoped that it was true.

"I'm not ready to commit myself to anything," von der Tann said.

Von Buchenau echoed him. "None of us are."

* * *

"This is quite true," Wes Jenkins said. "Under the constitution of the New United States, there are no 'subjects.' Only 'citizens.' Because we know that you have been seriously concerned that your status under the law might be diminished by such developments as the landgrave of Hesse's efforts to reduce you to the status of*Landsassen* within*Stift* Fulda, several members of the administration have cooperated to produce this special presentation. I assure you that we are sincerely grateful that the imperial knights of the Buchen Quarter are devoting so much of their valuable time to considering our modest efforts."

Wes continued his introductory remarks, thinking to himself, "drone on, Mr. Jenkins, drone on" to Woody Guthrie's tune. He loathed these apparently endless speeches, but had resigned himself to the fact that he now lived in a world in which brevity was equated to rudeness on formal occasions. At least he didn't have to write them. Andrea's lawyer, upon request, had dredged up a nephew who was willing to write his speeches, among such other duties as might from time to time be assigned.

* * *

"How could it possibly work? That we would be incorporated within this new state—the State of Thuringia—if this election decides that Franconia will join it, but not be mediatized?"

"The idea is really strange. But it seems to be true. I certainly was able to buy copies of the constitution of the original 'United States'—the one they came from—with no problem at all. Just ordered them from Frankfurt, the way I would any other book," von Ilten said.

"How did it work? Von Buchenau looked at his colleague. Von Ilten had a suspiciously scholarly bent, but on the other hand, it saved his friends a lot of work, because he read the books and explained things to the rest of them.

"Well, the national government was made up of a group of 'states' just as the Holy Roman Empire is constituted from the different states of the Germanies. And Bohemia, of course. But for the 'citizens' within each state, and they are very oddly named, I must say, I cannot pronounce some of these at all, the 'state' did not stand between them and the 'country.' They were directly citizens of the 'country' as well and had a vote in choosing delegates to the 'senate' and 'congress' just as the Bench of Imperial Knights chooses who will represent it in the*Reichstag* . At least, if I understand it properly."

"This means that if we agreed to be incorporated into this State of Thuringia, we would still vote directly for our representative in the USE parliament, rather than being mediatized under the president of the state?"

"Yes, as I understand it. And, of course, we would also have a vote in choosing the president as well."

"How does that work?"

* * *

"Hmmn," Wes Jenkins said. "Around here, when someone says, 'A man's home is his castle,' I guess he really means it. This hall looks bigger every time I see it." He was standing with his back to the fireplace. Wearing an overcoat.

"It wasn't that hard to design the presentation," Clara said. Her breath made little patterns of steam in the air. She was wrapped up in three shawls.

The rest of the delegation now appreciated her insistence on bringing along three folding screens to this meeting. When they were set up in a semi-circle around the fireplace, they not only cut down significantly on the drafts but also to some extent reflected the heat from the fire back on the group. Otherwise, it would have dissipated into the cavernous hall.

Andrea shivered. "Do you suppose that reasonable nobles like Count Ludwig Guenther deliberately build themselves modern houses? Or is it living in freezing*Burgs* like this one that makes the unreasonable nobles the way they are?"

After their first three days as guests of von Buchenau, they had all come to appreciate that one of the main advances in modern architecture—seventeenth-century modern German architecture—was the ceiling. In this old fashioned great hall, what little warmth the fireplaces produced just floated up and up and up until it went out an unglazed window. When they got back to Fulda, they would have to say something nice to the abbey's one-time construction foreman, now the NUS administration's construction foreman, about the ceilings in the administration building.

"Actually, I thought it went pretty well, this time," Wes said. "Some of them don't buy into it at all, of course. Von Schlitz is still in hiding somewhere and I'm sure that several of the others share his opinions. And some of the ones who were considering it at the meeting will relapse into their old ways of thinking before the election."

Clara got up and moved over toward the fireplace. "Of course, I left something out."

"Left something out?"

"As we have presented it to the knights, it is very strong in showing that they will become direct citizens of the United States of Europe if they accept the constitution of the New United States. Well, now, the State of Thuringia. It will be the same constitution, with just a few name changes."

"So?"

"Ah. Haven't you noticed? I left out entirely that all of the people who are now*their* subjects will also become direct citizens of the United States of Europe, in all ways equal to them, and will have just as much right to vote for their representatives in congress and parliament and the president of the State of Thuringia as they do."

Wes stared at her. Now that he thought about it . . .

"Really, I just thought it was prudent to omit it." She looked at the rest of the delegation with an innocent expression on her face. "In some ways, it is very convenient that this is such an isolated backwater that the more extreme propaganda of the Committees of Correspondence has been slow to reach it. Possibly even von Ilten does not realize that if the election succeeds and Franconia becomes part of the State of Thuringia, all the little local legal jurisdictions will be abolished. It is in a subordinate clause, after all, in a subparagraph."

"Clara," Fred Pence started.

"If they aren't bright enough to figure out for themselves that although they will not be mediatized, neither

will they any longer mediatize their tenants, was it our duty to stir up trouble by mentioning the matter?"

Fulda, February 1634

"It's a pretty complicated ballot," Fred pointed out. It has a lot of 'if, then' items on it.'

"What do you mean?" Roy asked.

"'If' the person votes in favor of incorporation into SoTF, 'then' there's a question about whether it will all be one county, Fulda and all the imperial knights together, or whether each little imperial knighthood will be its own county. Or county-equivalent, depending on what they decide to call it. Then a question for choosing the name. Of course, someone who votes against incorporation can still vote about the name, but it's hard to see why he'd want to. Or she. I've tried to make it as clear as possible. Do you think we ought to offer some kind of voter assistance, Orville?"

"We can't very well put someone in every single precinct to answer the voters' questions. We just don't have enough people."

"I've trained as many volunteers as I can, working from the voter registration lists. Picking a couple of people out of each precinct. It's been sort of trickle-down, but I've done it. It's not going to be perfect. Nothing is. But I've sent stuff with the directions out to the provosts and the*Amtmaenner* and the village mayors. They've been, or most of them have been, holding meetings to explain it to everyone. At least, I hope they have. In most cases, it's probably a bunch of guys sitting around in the village tavern and having a beer. If that. And the League of Women Voters has helped."

"What League of Women Voters? Since when do we have a League of Women Voters?" Wes Jenkins was frowning.

"The one in Barracktown," Derek answered. "The LDS in Grantville has kept sending them stuff, ever since Willard Thornton went through, way back when. You know Liz Carstairs, Wes—Howard's wife, works for Mike Stearns?"

"Sure."

"Well, she's one of them, you know. Willard's sister. She sent a lot of League of Women Voters stuff along with the LDS Ladies Relief Society stuff. So they organized one. That was, oh, months ago. I'm not sure it's real clear in their minds about which is which, but they have one."

Andrea clapped her hands. "That's great. What about poll watchers, Fred?"

"Derek is splitting up the soldiers from Fulda Barracks into small groups and sending a detachment to watch the polls in each of the*Reichsritterschaften* ."

"Intimidation?" Harlan asked. "We don't want that."

"Anti-intimidation," Fred answered. "If they're not there, several of the knights will be standing around with their own guards 'guiding' the voters."

"What about the*Stift* territories proper?"

"We'll just have to spread ourselves pretty thin. Derek has arranged with Captain Wiegand for the members of the Fulda city militia to vote first thing in the morning and then be available to ride circuit with us, from one polling place to another."

* * *

"That reminds me," Andrea said. "Derek, did you ever get a school started out at Barracktown this winter?"

"Uh, yeah. Well, we don't have a building, but we have a teacher."

"Who?"

"Um, your lawyer's sister-in-law's nephew who needed to find a job to tide him over after the University of Tuebingen closed down because Horn and Bernhard have been marching all over the place down there in Swabia. He's only nineteen, but he works cheap, which is lucky. I wasn't authorized to hire a teacher, so I recruited him as a private, with a promise that I'd discharge him when the university opens up again. In writing. Notarized. He has a copy. His name's Biehr."

"Beer?"

"Yes, Biehr. The sister-in-law's sister married a German?"

"Andrea, isn't your lawyer German?" Roy Copenhaver asked. "If not, why not? I never can remember his name."

"If there's no building . . ." Andrea persisted.

"In the loft of Sergeant Hartke's house. His wife fixed it up, and we're paying them some rent."

Harlan frowned. "I don't remember that item in the budget."

"That's because the budget didn't have an item for renting space for a base school."

"Where's it coming from?"

"Ummn."

"Textbooks? Supplies?" Harlan was adding up sums on his notepad.

"We didn't have any to start with. But Howard Carstairs shipped over a whole set of German translations of LDS Sunday School materials."

"Err, Derek . . ." Roy frowned. "Separation of church and state, remember."

"It was those books or no books. Which choice do you like better? They're perfectly alright for learning ah, bay, tsay, day, ay, eff, gay." Derek whistled the German alphabet to the tune of "Twinkle, Twinkle, Little Star." "Remember the budget and keep it holy. Anyway, Mary Kathryn says that she thinks it will get by."

Everybody grinned. Two weeks before, last man on the military rotation he had set up after Joel Matowski arrived, Derek had sneaked back to Grantville and, after a long courtship conducted almost entirely by letter, married Mary Kathryn Riddle. Since she was the daughter of the chief justice, first of the NUS and then of the newly-born State of Thuringia, not to mention a legal eagle herself, it probably would get by. This time.

"Any chance of more leave coming up?" Derek asked hopefully.

"For you?" Wes put a doleful expression on his face and shook his head.

"Well, Dave Frost married Mackenzie Ellis when he was back home in January, too. Lawson got married last November. Devoted new husbands and all that, you know." Dave and Lawson were two of Derek's four "kids," all of whom had done a lot of growing up. "Maybe if the others got back a little more often, they could get married, too."

"Isn't Jeffie going to marry Gertrud Hartke?"

Derek frowned. "He'd better."

"Where*is* the rent coming from?" Harlan was not easily diverted.

"The lawyer's relative is from Tuebingen?" Wes asked, thinking back to several sentences earlier. "That's Wuerttemberg. I thought that I told you to hire a local lawyer, Andrea."

"Maybe the boy was just going to the university there. Etienne was living in Frankfurt as a refugee when we hired him. That's pretty close. And he was low bidder."

"Bidder?"

"There's no authorized FTE for a lawyer in my department. I had Harlan put out a RFP for a contractor."

"Life is so full of interesting surprises."

"Etienne says that he needs either another lawyer or two more clerks to handle the work load. Or another lawyer and two more clerks."

Harlan was still adding sums. "Derek, where are you getting the rent for the school loft?"

"Ah. When we built the barracks, some dope put in an item for landscaping. It seemed sort of a pity to let it go to waste. And we've put some potted plants in the school room. Didn't spend any money on them—the moms just cobbled together some pots from scrap wood, filled them with dirt, and dug up a few bushes. I'm hoping it's enough to get us in under the wire if auditors show up."

* * *

"Are we ready to certify the results?"

"Yes," Fred Pence said.

"First, in regard to the question of incorporation into the State of Thuringia."

The statistics were tedious, but the question passed.

Eleven of the territories of imperial knights voted to join both the State of Thuringia and the new consolidated subordinate administrative polity (aka SAP, which made Arnold Bellamy very unhappy). Seven voted to join the State of Thuringia but be subordinate administrative polities of their own and keep calling themselves*Reichsritterschaften* . Schlitz voted "the hell with it and a pox on you and both your political parties." Each of the seven separate*Reichsritterschaften* only had a few hundred residents apiece, but that was the will of the people.

Even the dissenting vote in Schlitz was technically the will of the people, though Fred Pence suspected that Karl von Schlitz's two oldest sons had made it fairly plain to the people what their will had better be. That pair would have done well in Chicago under Capone, except that the Mafia probably didn't take Lutherans.

The citizens of the new consolidated SAP voted to distinguish their secular government from that of the Abbey of Fulda. The name of the new polity would be Buchenland (Latin version Buchonia). This gesture on the part of the majority, residents of the former*Stift* , to the minority, residents of Buchen Quarter, was widely recognized as generous.

In a subsidiary question, the citizens of the new polity voted to establish an*Ausschuss* or*Conventus* whose duty would be to design an emblem and coat of arms for the new county.

Applause followed the formal certification.

So did a petition from several imperial knights of the Buchen Quarter, led by Friedrich von der Tann, who alleged that the soldiers of the Fulda Barracks Regiment had, in the course of carrying out their electoral duties, committed attacks, plundering, unjustified arrests, libels and slanders upon the honor of citizens, persecutions, demeaning statements, alienation of assets, and a variety of other crimes and delicts.

Wes told him to give it to the lawyers.

* * *

The following day, Derek Utt broke the news that he would now be conducting military musters throughout Buchenland, to establish a county-wide militia.

The imperial knights whose*Ritterschaften* had voted themselves into it discovered that they would no longer have their own private militias.

The rest of the imperial knights said, "I told you so. Don't say that I didn't warn you. Big government. Mediatization."

Captain Wiegand said that the Fulda city militia would be happy to provide training to the new local units.

Von Buchenau refused to allow the muster on his estates, saying that the ballot had not contained any provisions about military musters. Derek, with Wes' backing, arrested him.

His lawyer sent a petition to parliament and the emperor of the United States of Europe, pointing out that he had been paying a tax of thirteen*Thaler* per month to support the Protestant cause, contingent upon the agreement of the envoys of the king of Sweden that they would recognize the immediacy of his territory. He protested that one aspect of being independent was that a ruler could have his own army.

The effort that the von Buchenau militia made to spring him out of jail made it pretty clear that the knightly troops really could use the training that Captain Wiegand had offered, not to mention demonstrating that their equipment was more than a little obsolete.

Wes let the von Buchenau militia out on parole, since they were, when not being militia, the farmers who leased land from the knight and spring planting season was coming up.

After von Buchenau agreed to sign an*Urfehde* , Wes let him out on parole, too.

Schweinsberg told him that this was a really bad idea, and would be interpreted as a sign of weakness rather than as a sign of a generous spirit.

Wes said that the guy was just a nuisance.

Clara Bachmeierin agreed with the abbot.

Salmuenster, Buchenland, March 1634

Joel Matowski looked at the residents of Salmuenster. Thirty-four families. According to the duplicate records that the local administrator had kept, there had been a couple of hundred houses in the town before the war started. He was here to take their oaths of allegiance to the new constitution and run a military muster while he was about it. Salmuenster was about as far from Fulda as you could get and still be a part of the*Stift*— well, part of Buchenland.

The man raising all the objections was named Hans von Hutten.

He was, he said, an imperial knight.

He was, he said, a Franconian imperial knight proper and was not and had never been a member of the Buchen Quarter, so owed no obligation to any decisions that it might have taken.

"If you aren't," Joel asked, "then why are you here today?"

The answer, delivered by a lawyer carrying several boxes full of paper, involved a series of transactions by which the abbey of Fulda had pawned its outlying possessions in the Kinzig river valley to the von Hutten family, redeemed them, pawned them again, split them, redeemed them, and the like, for the past two and a half centuries.

Von Hutten's position was that he held a currently valid*Pfandschaft* arrangement with the Abbey of Fulda. If the New United States, and then the State of Thuringia-Franconia, had possession of the abbey's former estates, then by extension he held a currently valid*Pfandschaft* arrangement with it. The terms were that until such time as the governing entity, whoever it might be, paid him back the capital sum that his great-grandfather had advanced to the abbot and chapter of Fulda, these lands were damned

well his and these people were damned well his and the administration in Fulda had no authority to have conducted an election here by which they illegally voted themselves into Buchenland.

Von Hutten added that he, personally, as a resident of the former prince-diocese of Wuerzburg, had voted against incorporation, and that even though the majority of the people in Wuerzburg voted in favor of it, he did not accept that a majority vote was binding upon him. In his view, nothing to which he personally did not agree was binding upon him, because if he accepted the decisions of others it would restrict his liberty.

"Look man," Joel protested, as he experienced a political epiphany vaguely related to his half-forgotten memories of Ms. Mailey's explanation of how representative government worked, "that's no way to run a railroad."

Von Hutten announced that he was appealing the election results to the emperor, to the imperial cameral court, to the other emperor, to the imperial supreme court, and to anyone else he could think of. He proposed to demand an imperial commission to investigate.

When Joel got back to Fulda, he reported that just because the election went well, this whole thing was not yet a done deal, by any means.

Andrea's lawyer pointed out that all those appeals would be very expensive, so that unless von Hutten had more money than he appeared to, or was calling on outside resources, his complaints would make haste very slowly.

The rest of the meeting was devoted to speculation on possible sources of outside funding.

Wes told Joel to write up a report. They would send it down to Steve Salatto. First to let Steve know that von Hutten was making a nuisance of himself, since he properly belonged to Wuerzburg. Second to ask for money to buy the pawned districts back from von Hutten, so they could go ahead and incorporate them into the administrative system they were setting up for Buchenland.

Not that Steve would be able to come up with that much money before the next fiscal year, at the earliest.

Who Will Rid Me?
Bonn, Archdiocese of Cologne, March 1634

Walter Butler was leaving it to his associates to work out the details. Overall, he thought, he was in a pretty good position for a Catholic Irishman and professional military enterpriser. Or, if one wished to be crude, a colonel of a mercenary regiment. At least, compared to the position he would have been in if Wallenstein had caught him, once the bastard found out that Butler had been one of the point men for Ferdinand II's generals in organizing his assassination in that other world.

Butler had left Austria a year before, high-tailing it through Tirol and the Habsburg lands in Swabia, bringing Dennis MacDonald, Robert Geraldin, and Walter Deveroux with him. While passing through that heavily Leaguist territory, with a decent subsidy that Maximilian of Bavaria had arranged, they had recruited. With four regiments of dragoons, staffed almost to paper strength and well equipped, they had managed to negotiate an advantageous arrangement with the archbishop of Cologne.

Whose confessor was now sitting in the room with them. Along with Franz von Hatzfeldt, the bishop of Wuerzburg who had been driven from his lands by the Swedes. And von Hoheneck, one of the provosts of the abbey of Fulda. Both Wuerzburg and Fulda were now run by the "up-timers." That was, Butler presumed, why the others wanted to talk to them.

Since the others had initiated the contact, that meant that Butler and his colleagues had something they needed. Or, at least, that they wanted. Which meant that his negotiating position was good.

At the moment, Deveroux was telling the archbishop's confessor that he was out of his mind. Not a prudent thing to say, but true. Given the layout of the military map right now, there was no way they could take troops into Fulda. Not through Hesse. Not through Mainz and Frankfurt. Not through Wuerttemberg and Franconia. Not. It was too far inside the borders of the USE. Unless the coming summer's campaign changed the way that the Swede's troops were deployed, a raiding party could only figure on being chewed up. No profit. No plunder. Where was the gain in that?

Surprisingly, the bishop of Wuerzburg was backing Deveroux up. "He's right, you know. It's not that easy to infiltrate any sizable group of men deep into Franconia. Dingolshausen was a disaster. Melchior's men got in, but not a dozen of the original two hundred got out again. Not to mention that it's caused a public relations problem."

Hoheneck interrupted. "They don't have to take men in."

What did he mean by that?

"If they go in themselves," Hoheneck waved in the direction of the four Irishmen, "there can be troops waiting for them. I have full assurances that not all of the imperial knights of the Buchen Quarter were satisfied with the outcome of last month's election. Particularly not now that they realize that although they have not lost their immediacy legally, every damned peasant on their estates has gained the same rights. There hasn't been time for the up-timers to complete the reorganization. The four of them can go in. It's easy for four men. Get a couple of companies together from von Berlepsch, from von der Tann. Von Schlitz will do the organization. I know where he's gone into hiding. Note that he has maintained sufficient influence over his subjects that they voted not to join the State of Thuringia. He'll have them ready for you when you get there."

Butler had intended to keep quiet, but he couldn't.

"What happens to our regiments while he's gone?"

The Capuchin cleared his throat. "If you leave them here, under the command of your lieutenant colonels, the archbishop is willing to continue paying you at the current rate. Plus the additional compensation for the work in Fulda, of course."

"Is there any hope that the imperial knights might let you take their men with you on the way out? It would be really nice," Hatzfeldt said wistfully, "to wreak a little destruction on the Hessians."

"Not a bit. If they strip themselves, the SoTF will just come in with troops from Thuringia and wipe them out."

"Even if they keep their couple hundred troops, the SoTF will just come in with troops from Thuringia and wipe them out."

"Not the same kind of situation as Jena or Badenburg or the Crapper. Not even the same as the Wartburg. A batch of different opponents, up in hilly country, who know the terrain. Even with just a couple of hundred men . . ."

"A couple of hundred men if they were decently equipped. But without . . ."

The archbishop's confessor got up from his chair. "Let me know what you decide." He left the room.

The professionals reverted to shop talk.

* * *

"The main objective, then, is to abduct the abbot." Archbishop Ferdinand's confessor nodded his head firmly.

"Yes," Hatzfeldt said. "That has to be the first goal. Get hold of Schweinsberg and get him to Bonn." He waved at the four Irishmen. "Any one of you can do that. We don't care which one. Decide it among yourselves."

"Why us? In particular?" Deveroux asked.

Butler had wondered about that, too.

"Because you speak English," Hatzfeldt said. "Schweinsberg is not the only target. We wish to interview the NUS administrators, which will better be done there. Take Felix Gruyard with you—he's good at what he does. Smuggling out one man is a different matter from smuggling out a half-dozen. These up-timers have learned German, of course. The administrators in Fulda, I mean. But still, it is not their first language. If we want to get the maximum amount of information from them, in a short period of time, it will be much better to have interrogators who can question them in their own language. So split up. One of you to each of the targets. Then, while you are doing that, we hope very much that by holding them the imperial knights will disrupt the administrative system of all of Franconia. The others, in Wuerzburg and Bamberg, will send their forces toward Fulda. Then, if Melchoir—my brother—can send a force through Saxony and Bayreuth . . ."

"Will send their forces to Fulda?" Butler asked. "Or do you just*hope* that they will send them?"

"It's hard to understand the up-timers. But from all we can learn about them, they are very protective of their own people. It's a calculated risk, of course. But, then, life is a calculated risk."

"Meanwhile, what will you be doing with the abbot?"

"Once he is here, the archbishop and I can persuade him to stop cooperating with these abominable up-timers. Persuade him to stop collaborating with the Protestant Swede. Or, if it comes to that, depose him. The emperor and pope would have to agree to that to make it permanent, but if we keep him in prison here while the haggling is going on, it will have the same effect. The archbishop can appoint me as interim administrator."

Hoheneck cleared his throat.

"You were thinking of some other candidate for administrator?" the archbishop's confessor asked.

"I was just going to point out that any administrator should be appointed by the archbishop of Mainz rather than the archbishop of Cologne," Hoheneck said.

"Casimir Wambold von Umstaedt is a refugee in Cologne also," the Capuchin answered. "He will allow himself to be guided by Archbishop Ferdinand's wisdom, I am sure."

Hoheneck was not so sure of that. After all, the archbishop of Mainz was close to Friedrich von Spee, who had been in Grantville and was now in Magdeburg. Overall, the archbishop of Mainz was closer to the Jesuits than to the Capuchins.

As, in fact, were the abbots of Fulda.

While it appeared that Hatzfeldt might have quite a lot in common with Echter. If the bishop of Wuerzburg was going to try to use this to pull Fulda under his authority and come out of it, once the imperials eventually won this war, with an expanded sphere of influence and Fulda nothing more than one mediatized monastery . . . what would be the point in becoming abbot of Fulda?

Privately, he was quite certain that Hatzfeldt was the wrong candidate for administrator.

Fulda, Buchenland, April 1634

"The 'Ram Rebellion" or 'Brillo Movement' does not appear to have spread significantly from Wuerzburg into Buchenland."

Wes finished up his monthly report.

He was profoundly glad that he had been able to write that last sentence.

Maybe there were some advantages to being in a spot that was such an economic backwater and political boondocks that nobody else cared about it. Not even revolutionaries.

Fulda, Buchenland, May 1634

"It's the surveyors," Orville Beattie said.

Roy Copenhaver turned a page in his notebook. "What surveyors?"

"The ones planning for pushing the railroad network out farther. It's a long way off, considering what a struggle it was to find supplies just for Halle-Stassfurt-Magdeburg. Iron by itself . . . But they're doing more surveys this summer. Gustavus Adolphus wants to see a line head out from Erfurt-Eisenach to Frankfurt am Main and Mainz. Tie his administration together. So they're laying out a route along the Fulda Gap. The landgrave of Hesse-Kassel signed onto the project and approved having it come through his lands way last fall. Howard Carstairs had some old topo maps he had squirreled away—he served with Third Armored—so they're making pretty good time, in spite of the changes."

"Why does this lead to a peasant revolt?" Wes Jenkins frowned. Surveyors in the north didn't seem to connect with the stuff he had been getting from Steve Salatto to the south.

"The landgrave doesn't seem to have explained it all very well," Orville said. "Not surprising, since he's been out in the field managing armies for Gustavus Adolphus, his wife has been in Magdeburg politicking, he got his brother appointed Secretary of State so he's in Magdeburg too, and they seem to have left a vacuum into which the rumors could come flying. The district administrators can't explain anything to the farmers and village councils because they don't know anything much themselves."

"Anything specific about the rumors?" Roy asked.

Orville wrinkled his nose. "This is what I've gotten from the granges. The leaseholders, the people who actually farm the land, have gotten the impression that they're going to be thrown off with no compensation. Apparently a few of the surveyors made some rather loose statements about using the power of eminent domain to take the right-of-way if owners didn't sell voluntarily. 'Owners' brought to mind landlords. The farmers got the impression that any payments that come out of this will be going to businessmen, or charitable institutions, or nobles, who hold the*Lehen* . Not to the guys on the spot, who will be left holding the short end of the stick and trying to get the value of the broken leases back from the owners. Who most likely won't be interested in making payouts."

"So?" Andrea pulled her pencil out of her hair and started twirling it around with her fingers, like a cheerleader's baton.

"So they're having a peasant revolt. Meetings, gatherings, marches, protests, broadsides, poems, pamphlets, guns pointed at local administrators." Orville put a bright and cheerful expression on his face. "All the regular amenities, as I understand how these things go."

"Brillo?" Wes asked with some trepidation.

"Not in Hesse. His fame does not yet seem to have reached such exciting spots on the map as Friedlos and Schrecksbach. I sort of hate to tell you, though . . ."

"What, Orville?"

"We're seeing more and more of the ram stuff here in Fulda. In Buchenland, that is. Especially to the south where it borders on Wuerzburg. The 'Hearts and Minds' people are circulating through the whole area, trying to talk things down. The best argument we have right now is that the railroad isn't coming through Fulda anyway."

"Economically," Roy Copenhaver pointed out, "it would be a good thing if it did. Open up markets and the like. If they're running it through Hersfeld, that's still twenty miles of bad road from most of the farms in Buchenland."

"What do you need from us?" Wes asked.

"If all of you, at least as many as can be spared off other jobs, could start spending more time in the field, backing up our efforts, it would be a real help." This time the bright expression on Orville's face was more genuine.

Buchenland, June 1634

"Damn it Derek." Wes Jenkins was yelling again. "Your cursed Fulda Barracks Regiment is more trouble than it's worth."

"They are just trying to demonstrate their loyalty to the government."

"Threatening to defect to Hans von Hutten on the grounds that he will let them shoot peasants is not a really outstanding declaration of loyalty. In fact it sounds more like mutiny to me."

"They feel that by not suppressing the revolt, they are failing in their duty."

"They are just itching because they haven't shot or plundered anybody for a year and a half. Especially plundered."

"Garrison duty is always difficult."

"Well, make it plain to them that they can't shoot any of the farmers or citizens of Buchenland unless I give them permission. Peasant revolt or no peasant revolt. And tell them that there is no way that I'm going to turn them over to von Hutten so*he* can shoot our citizens. Or Wuerzburg's citizens, for that matter. Lock them in the barracks, if you have to."

"Set their wives to guard them," Clara Bachmeierin suggested.

Wes stared at her.

"They have houses now, in Barracktown. Cabins with wood floors, a lot of them. Some even have fireplaces with stone chimneys and hearths. Windows with shutters and oiled paper. Doors with latches. A school for their children. Sergeant Hartke's oldest boy turned out to be so smart that Andrea's lawyer gave him money to go to the Latin school that the Jesuits run here in town. He would rather send the boy to a Calvinist school, but there isn't any. Hardly any of them want to go back to tramping around after a regiment on the march."

Wes looked at Derek, raising his eyebrows.

"I can try it. I really don't want to use Wiegand's Fulda militia to guard them, unless I absolutely have to. If this blows over, they'll need to work together again."

* * *

"You really mean that?" Deveroux looked at Karl von Schlitz with disbelief. "They are not holed up behind Fulda's walls, huddling together in the administration building?"

The imperial knight was looking a little pale, having spent quite a lot of time recently living in a rather small pantry off the main kitchen of his great-uncle's long-ago mistress' miniature castle.

"My sons assure me that it is true. Because of the unrest, the administrators, almost all of them, and the abbot as well, are riding the length and breadth of this newly invented Buchenland, trying to make the peasants happy."

"Why should peasants be happy?" Robert Geraldin asked with honest bewilderment.

Dennis MacDonald glared at him. "They shouldn't, of course. Their suffering in this life will be compensated in the next, like the beggar outside of the rich man's house."

"That," Deveroux said, "is beside the point. Do you have any way of getting their itineraries?"

"Yes. Fritz and Oswald can get them for you."

"Well, glory and hallelujah!"

"Not to mention," one of the von Schlitz sons said, "that they are very lightly guarded, if at all, only by members of the Fulda city militia, because their regiment tried to mutiny."

Deveroux jerked his head up.

"You mean this?"

The son—Friedrich, it was, Fritz von Schlitz—howled with laughter. "Because they won't let the soldiers shoot the peasants, would you believe it? So you will have a peasant revolt to blame any 'accidents' on and the Thuringian troops who pour into Fulda to avenge their administrators after you are long gone will be shooting their own innocent 'citizens.'"

Felix Gruyard smirked.

Walter Butler shook his head. It was enough to make a man believe in divine providence.

Bonn, Archdiocese of Cologne, July 1634

"The archbishop is not receiving callers this morning."

"But," the reporter said cheerfully, "I would like to obtain his comments upon the news that the pope has elevated the priest from Grantville to the dignity of cardinal of the Holy Roman Church and appointed him as cardinal-protector of the United States of Europe."

"Trust me," the doorman said, "you don't want to hear his comments."

"Oh," the reporter said, "but I do. Not to mention that I have a duty to my readers. What are the archbishop's comments?"

"No comment." The servant slammed the door.

* * *

Franz von Hatzfeldt looked rather anxiously at Johann Adolf von Hoheneck. "Is this appointment of a cardinal-protector for the USE something we should be taking into consideration in regard to Fulda?"

"There's nothing that we can do about it. It's too late to call the Irishmen and Gruyard back. We don't

know exactly where they are. We have no way to communicate with them. And, in any case, we aren't paying them."

Schlitz, July 1634

"So I went into the town to get some news," Gruyard muttered. "I got it, didn't I? We can't sit walled up on top of this stupid hill forever. It isn't as if there's anyone in Fulda who might recognize me."

"It just goes to show," Karl von Schlitz orated, "that the demonic up-timers are in league with the Roman anti-Christ."

"Come down off it," Geraldin said. "Who do you think that you linked up with when you sent those feelers out to Hoheneck? Martin Luther?"

The two sons howled with laughter.

Gruyard smiled.

Walter Butler didn't think it was that funny.

Fulda, July 1634

"What do you suppose this means," Johann Bernhard von Schweinsberg asked. "Will Gustavus Adolphus allow the archbishop of Mainz to come back to his see? How does it affect the status of the Mainz possessions around Erfurt that voted themselves into the State of Thuringia-Franconia? Will there be a new appointment to the see of Bamberg? How will it change the status of the bishop of Wuerzburg? Does it mean that Thuringia-Franconia will be granted its own bishop. If so . . . that would be wonderful."

"Why?" Harlan Stull asked.

"Well, there would be someone who could ordain priests. And confirm children. None of that has been done in the*Stift* for three years. Unless the suffragan down in Wuerzburg has done confirmations in some of the southern parishes that the diocese claims are under its jurisdiction."

"Why don't you ask him?"

"If I asked him, he could interpret it that I was asking him for favors. He could perhaps even interpret it to mean that I was tacitly acknowledging that the abbey of Fulda is under the ecclesiastical jurisdiction of Wuerzburg."

"Look," Harlan said. "You don't have the property any more. All you've got are a bunch of parishes with people in them. How about cutting out the turf wars?"

Schweinsberg looked at him wearily.

"Herr Stull, I have come to like and respect all of you. But in the course of the history of the church,

Grantville has been a factor for only a short, a very short, time. The abbey of Fulda has been here for eight hundred years. I hope that it will still be here in another eight hundred years, if the last judgment does not intervene. I cannot and will not unilaterally renounce its rights."

* * *

"The truth is, Schweinsberg," Wes Jenkins said, "that I quite honestly don't have the vaguest idea what this will really mean. I'll write to Ed Piazza. And I'll set up an appointment for you to meet with Henry Dreeson before he goes home. Once he gets here, that is."

"I took a bunch of newspapers out to the barracks," Derek Utt said. "It should give them something to talk about besides peasant revolts. Distract their minds, sort of. I'm having them practice their new anthem, too. Mary Kathryn's grandma picked it out. The kid teaching school in Sergeant Hartke's loft translated it into German poetry for me and he is assigning the parts. Biehr, his name is."

Dubious Saints
Fulda, August 1634

Andrea was feeling increasingly frazzled. She was the senior civilian administrator in Fulda. Someone else should have been back a couple of days ago. They couldn't all have been delayed. Or if they were, at least one of them should have sent in a message. Pushing her bangs out of her face, she started out into the hall.

The land claims lawyer was just coming in, followed by his relatives, the school teacher and the speech writer. And by the little artist who lived in St. Severi church and painted murals.

Andrea stopped and looked. They had an amazing resemblance to one another when they were lined up like that. All four of them, Etienne Baril, his nephew, the teacher, and the artist. No one could ever seem to remember their names. Maybe it was deliberate.*Last night I met upon the stair, a little man who wasn't there* , she thought to herself. These Calvinist refugees survived as a kind of professional migrant labor force, from France to Antwerp to Frankfurt, from Lucca to Geneva to Hamburg, from Scotland to Nuernburg to Hungary, making themselves inconspicuous as they worked away to make the bottom line come out even in the cracks and crannies of administrative back rooms all over the continent. Survival by invisibility.

"What is it?" she asked.

The lawyer nodded to the end of the line. "Paul says . . ."

The little artist spoke up. "Felix Gruyard is in town. Or was. I saw him. He came to services at Saint Severi. I don't go out in the congregation, of course. I watch from the sacristy, so he did not see me."

"Who is Felix Gruyard?" Andrea frowned. Something, right on the edge of her memory. Something to do with that obscene pamphlet. A Lorrainer.

The little artist lifted up his loose tunic. The school teacher pointed to his legs.

"He is the archbishop of Cologne's torturer," the speech writer said. "He is very good at what he does."

The artist dropped his tunic. He held out his hands and arms, unscarred. "He is very careful in his work. The archbishop still wanted me to be able to paint, you see. Even though I am a Calvinist."

Buchenland, August 1634

"That went pretty smoothly," Geraldin said. They had the abbot of Fulda neatly trussed up and loaded on a small hay cart. Pretty fair hay, too.

"What about the other one?" MacDonald asked.

"Leave him down there. He's not going to be moving. Get back to where you were supposed to meet the boss. Shots attract attention and you don't want blood all over your clothes if you pass other people between here and there. I'm on my way."

MacDonald shrugged and headed back to meet Butler and Deveroux at von Berlepsch's.

* * *

Wes Jenkins had finally dealt with the way he couldn't help worrying about Clara Bachmeierin whenever she was out in the field by assigning her to ride with him while they tried to pacify the farmers. That way, he figured, he would only have to worry about her when it was absolutely necessary. That would help him keep his mind on other things, such as the importance of believing that railroad surveyors are your friends.

Most of the farmers had a lot of trouble grasping even the basics of that idea. So did Wes, for that matter. He'd read a book once about some of those early railroad barons, back in American history. He expected that his spiel wasn't as convincing as it might have been.

There were getting to be a lot of Brillo pamphlets and poems and songs around. Clara thought they were funny. Wes didn't think they were particularly funny. Oh, a couple of them were cute enough, but not anything that you could compare to Peanuts. Peanuts had always been his favorite comic strip. Once, Reverend Jones, Mary Ellen, that was, had taken the adult Sunday school class through a book called *The Gospel According to Peanuts* . That had been pretty good. He wondered if Clara would like it.

About that time, someone jumped into the pony cart and hit him from behind, rather hard. The horse reared. Men started yelling. They pulled him out of the cart. Three of them were on him, tying up various pieces of his body to other pieces.

"Leave his legs free," someone said. "We have to move them." Two men sat on him, one on each leg.

Clara was yelling, too, until someone shoved a rag in her mouth.

A man behind him was trying to get a blindfold on his eyes. He kept tossing his head up and down. He kept thinking that von Schlitz's sons had tried to blame the attack on the wagon going to Grantville on bandits. If so, it had been the only batch of bandits on that road in the last year and a half. Like this one. This was a perfectly safe road. He wiggled his head away from the blindfold again. That*was* von Schlitz's son. The older one. Fritz.

"Hold still," someone said. "Hold still or I cut her."

Wes looked up. A couple of men were holding Clara's arms. Another man was holding a wicked-looking knife right against her cheek, smiling sweetly.

He let them put the blindfold on.

It was hard to tell how long it took to get where they were going. The path, if he could trust the feel of the horse under him, had more curves than the climb to Pike's Peak.

He'd gone to Pike's Peak with Lena and the girls, once. They had tried to hit all of the important national parks on family vacations. He wondered what Lena was doing now.*Whatever it is, Lena, God bless you* . He said goodbye to his wife.

Nobody was talking except the man who had smiled as he held the knife against Clara's cheek. He seemed to find it entertaining to describe the things he planned to do to them if they did not answer the questions they would be asked.

* * *

The sound behind them was probably a door closing. Wes thought that it made a depressingly solid sound. A well-built door, probably. Reinforced panels and a good latch. Where was planned obsolescence when you really needed it?

"They pulled out my gag," Clara was saying, "If you come over here and sit on the floor so that your head is about the height of my hands, I will try to untie your blindfold. That is the best place to start, I think. He put on yours before he put on mine. It is just rough hempcloth, so the knot can't be too tight. He didn't bother to dampen it."

Wes felt his way across toward Clara's voice and slid down.

"I'm really sorry about this, Ms. Bachmeierin," he started out. "I would have given anything to avoid exposing you to this mishandling."

"I'm sure," Clara mumbled under her breath as her fingers fished around for the ends of the knot. "There, it's coming," she said aloud. She kept pulling.

"It's called the*terratio verborum* ," she said suddenly. "Terrorizing with words. That's what he was doing. Describing each instrument and its effect. It's the first stage of judicial torture. He's probably a professional, not having fun, just saving some time by talking while we rode."

Wes stood up and blinked his eyes clear. "It's not a dungeon," he said. "Stone floor and walls, but the window is at the regular height. It's after dark, but it's lighter out than it is in here and I can see the outline. It's barred."

"Untie my blindfold, would you?" Clara asked. "Then we can admire the scenery together."

"Oh," Wes said. "Sorry." She sat down on the floor. He untied it. She stood up again and he started picking at the knots fastening her hands. That was just a length of rag, too, not a rope. It came loose pretty easily. Somebody hadn't belonged to the Boy Scouts. Either the soldiers who tied them up weren't

taking this very seriously or they intended to be back pretty soon. He preferred the first thought.

"It's a pantry. See the shelves, over there in back. Somebody's been living in here, I think," Clara commented after her eyes had adjusted.

"Why?"

"Because," Clara said, "there is a table. With a pitcher on it. She walked over and stuck her finger in it. Half full of water. She took a drink and handed it to Wes.

"A chair. And a bed. A cot, but a real, live, genuine, bed with ticking and a stuffed straw mattress."

"Fleas and bedbugs?"

"Probably those too." She stood there, looking at the bed. "After this kind of a day, I'll risk it."

"I'll sleep on the floor by the door, in case someone should . . ."

Clara had enough.

"No," she said. "You won't."

She started to take her clothes off.

"I am getting ready to finally get into that bed with you. Before that nasty little man cuts me up in all the pieces he spent the afternoon telling us about so meticulously. So there. Even if it is too dark for you to see my body before it gets sliced and diced, at least you can feel it. And I can feel yours while it is still all there, since he is threatening to pull your fingernails out, too. And other things."

"Ms. Bachmeierin . . ."

"The name," she said, "is Clara. And you are Wesley. Now . . ." She pulled him down to sit next to her on the bed.

"Clara," he said faintly. "We aren't married."

She sighed with exasperation.

"Here," she said. "Your left hand in my left hand. My right hand in your right hand. Now you say, in the present tense, 'I take you for my wedded wife.'"

He complied.

"Now. I take you for my wedded husband. That makes us married. Do you have anything that we can divide and share for a token. A coin or something. That makes it stronger."

"I'm not the kind of strongman who goes around bending coins with his bare hands." Wes felt around in his pocket. "Would two links from my watch chain do?"

"Superb."

He pulled them off. They solemnly exchanged them.

"Now," Clara said. "We are fully and completely married, to the entire satisfaction of ninety-five percent of the population of Europe." She kissed him again and kicked off her last petticoat. It was midsummer, after all, so she was only wearing three. All of them linen. And a pair of blue jeans under them, of course, since when she rode she now kilted her skirts and petticoats up around her waist.

Wes started to unlace his shoes.

"Ah, who are the other five percent of the population of Europe?"

"Lawyers and bureaucrats!" Clara exploded. Then. "Wesley, if you stop unlacing those shoes, I am going to be very, very, annoyed."

* * *

Joel Matowski started to wiggle his way out of the ditch and up onto the path, thinking that if he got out of this, he might just make a visit to the pilgrimage church up on top of a hill that Wes had handed back to the abbot. He hadn't always thought it was wonderful to have a mother who was a ballet teacher. If he got back to Grantville, he would apologize to his mom, ten times over, for all the occasions when he had been cranky about going to lessons or practicing. There were times in life when a lot of ballet training came in really useful. It turned a guy into something of a contortionist, not to mention developing stamina. Wiggle, hump, stretch. He fell back to the bottom twice, but kept pushing. The second night, it rained. He lay there on his back, his mouth open. Over three days after those guys had taken the abbot, by the time he had his legs onto the path and was making pretty good progress pushing the rest of himself upwards with his shoulders and elbows, a good Samaritan came along. Who happened to be a tenant of Ruprecht von Ilten.

* * *

"Berlepsch, I think. Tann, Schlitz, and Buchenau for sure. The ones who let the Irishmen use their soldiers. So those castles should be where you will find your various officials. Of course, some of them have more than one castle, and they might use storage barns or other buildings." Von Ilten was looking very anxious.

"None of the others?" the little lawyer asked.

"Not as far as I have been able to determine."

* * *

"Damn it, I'm not an invalid," Joel Matowski said. "Just a bit bunged up there and there. I'm riding out with the rest of them."

"How about," Gus Szymanski suggested, "that before you ride out you make a little tour giving speeches to the different groups. First Fulda Barracks. Then the "Hearts and Minds" team. Then the militia. They'll fan out and cover the villages."

Joel gave a pretty dramatic speech. Ballet didn't require words, but it was really heavy on interpretive gestures.

Shortly after Joel finished the third repeat, he fainted. The Barracktown school teacher held him on his horse, took him to St. Severi's and put him in the sacristy for the little artist to look after. It was either that or the nuns, since the up-timers' "EMT" was going to accompany the other soldiers, and Biehr didn't think that nuns would be a good idea. Not that he had ever met one, but Calvinists had their doubts about nuns just on general principles.

Then he hurried back to the barracks. The regiment would be marching out and he needed to be there to direct the anthem. When the men rode or marched, they would just sing the melody, but for when they were in barracks, he had set it up as a chorale and divided them into tenors, baritones, and basses.

Sergeant Hartke had not gone along with Biehr's suggestion that he should reassign the men to the different companies on the basis of which part they sang, although it would make scheduling rehearsals easier. In fact, Sergeant Hartke's answer had been unreasonably brusque. Biehr thought with frustration that sometimes he just needed to work with them on one part. He saw no obvious reason that all the tenors should not be musketeers and all the baritones pikemen.

He was vaguely dissatisfied, but he had done his best with the translation. Major Utt, of course, had as usual been overly busy. The only guidance he had given was, "Leave out the line about 'we feebly struggle; they in glory shine.' It projects the wrong image."

* * *

Butler, Deveroux, and MacDonald interviewed Fred Pence and Johnny Furbee at Berlepsch's. They had planned to put the next three days to good use, riding from one castle to another and interviewing the captives the other parties had picked up. All of a sudden, though, every country road and cow path in Fulda was crawling with people. Soldiers, militiamen, farmers, kids, and a terrifying squadron of women. People who were, clearly, looking for other people.

By mutual consent, they picked up Gruyard from Schlitz's and headed back toward Bonn. They were, after all, practical men, in this for money rather than glory.

Fulda, August 1634

"No, I am not too proud to ask for help. I am also not too stupid to ask for help. I do not care whether some galloping Rambo thinks I am a wimp because I ask for help. Somebody go down to Wuerzburg with this letter and get us some help. Now."

Andrea had been on her feet for almost twenty-four hours for the second time in three days. Her hair, which usually got a half-hour of attention every morning before she let it appear in public, had gone limp. She had tried to pull it back into a pony tail. It was too short. Exasperated, she had parted it and put it into two pigtails, one behind each ear, tied with pink ribbons. There were three pencils and a pen stuck into various parts of it.

Wes' speech writer-cum-gofer looked at her. The hairdo's effect was remarkable. The closest classical analogy that came to his mind was Medusa.

"I will take it myself," he said. "I don't know anybody else who knows the road and is still in town. They're all out looking for the others."

Wuerzburg, August 1634

Steve Salatto frowned. "Has Andrea gone off her rocker?"

He meant it as a rhetorical question.

Louis Baril, which was the speech-writer's name if anyone had ever been able to remember it, took it as serious. "It is quite true," he said. "All of it. At least, to the best of our knowledge in Fulda."

"If I send a half dozen people up to Fulda, who's going to be available to help Anita in Bamberg?"

Louis realized that the second question was rhetorical. He shrugged.

"By the time I can get anyone up there, they will probably have already straightened things out. But I guess that the onus is on my shoulders."

He looked at the man. Not much more than a boy, really. "The day's half gone. Are you prepared to start back this evening, or do you need to wait for morning."

"This evening. The daylight is still long."

"Fine," Steve said. "Weckherlin, find him something to eat and drink and a place to sleep, while I pull together a team to send."

Fulda, September 1634

"Who do you have back?" Saunders Wendell asked. He was Wuerzburg's UMWA man. Steve had sent him up as head of the emergency assistance team. "Is that supposed to be whom do you have back?"

"Who cares? About who and whom, I mean. We have Harlan and Roy. They were a team. Von Ilten and his men found them walking back from von Buchenau's. It sounds like when the interviewer didn't show up, von Buchenau started to get cold feet. You tell them." Andrea waved at a down-timer.

He introduced himself. "I'm Ruprecht von Ilten. Buchenau was expecting an Irishman to do the interviewing. When no one had shown up two days after someone was supposed to, Buchenau fed them and let them loose. We gave them mounts and an escort back to Fulda. By the time we got up to the castle, Buchenau was gone."

Wendell shuffled through his notes. "Any idea where?"

"Not according to his wife."

"Any recommendations?"

"She's a second wife. The first one was childless. About seven months gone with her first child. Set her

father in to manage the place, I would say."

Andrea pulled herself up straight again. "Only if all of you guarantee to back the kid's succession if it's a girl against more distant claims in the male line."

Von Ilten blinked first.

Wendell looked back at Andrea. "Go on."

"Fred and Johnny. They were a team, too. Our friends here had to buckle a bit more swash to get them out of Berlepsch's hands. Dramatic armed confrontations and all that. Gus Szymanski has the casualty list. Johnny's quite a bit the worse for wear. According to Fred, he put up a good fight. Gus has splinted, salved, set bones, and the like. He should be okay, but he's not going to be on his feet for quite a while. Once it won't hurt him too much to ride in a wagon, I want to send him back to Grantville to recover. He married Antonia Kruger from Barracktown and their first baby was born and died earlier this year. I expect he'd like to take her to see his folks. His parents were left up-time, but he has a sister. Simon Jones is his uncle. Just get away from Fulda for a while."

"I don't see any problems with that," Wendell concurred.

"Joel you know about. He was with the abbot."

"Yeah. You haven't found the abbot?"

"No. But Joel says that the men who grabbed him were speaking English to one another. Three of them, speaking English with an Irish accent. How many Irishmen can there be on the loose in Fulda? I've been here for close to two years now and there's never been one here before. Not that I know of. And we haven't found Orville and Mark." Andrea caught a sob. "Or Wes and Clara. I'm sorry."

"Who's out hunting now?"

"Mostly the Fulda Barracks Regiment. They've apologized for you know what."

Wendell frowned. "No, I don't know what."

"Derek can explain it to you when they get back. It's just too complicated, and I'm too tired. He has Lawson and Denver with him. Dave Frost is with Captain Wiegand and the Fulda militia. They've combined and split up. Does that make sense? Some of each group are beating their way systematically through every nook and cranny of the von Schlitz properties. Jeffie Garand is with Ruprecht von Ilten's people, heading for Tann. They're all still looking. Everybody's been out. The granges. Even the League of Women Voters."

Wendell rolled his eyes heavenward. "We have one of those down our way, too. With a sheep named Ewegenia as a logo. She's a caricature of Veleda Riddle."

Andrea stared at him. "Please don't tell Sergeant Hartke's wife."

Last Visions

Bonn, Archdiocese of Cologne, September 1634

"Where is everybody?"

The servant at the boarding house where Walter Butler kept rooms looked at the roaring man as if he were a ghost.

"Fighting, if they are fighting men. Fled, if they had someplace to go. Waiting, if they are the rest of us."

"Do I have any messages? And get me something to eat."

Deveroux came in. "There's no place safe. Looters are out in the town, already. I left MacDonald watching the horses."

Butler turned to the servant. "Pack up all the food that isn't perishable for us." Back to Deveroux. "I'll read these while we're riding."

* * *

"Damn," Butler said. "Triple damn."

"What?"

"The archbishop of Mainz went back. The up-timer who is now supposed to be the cardinal-protector of the USE got the Swede to give him a*salva guardia* ."

"No way would Gustavus Adolphus give him a safe conduct."

"According to Hatzfeldt, he did." Butler handed the paper to Deveroux. "We may have to reconsider our options."

"We need to catch up with our regiments. Or whatever may be left of them by now. What good is a colonel without a regiment?"

"Hatzfeldt didn't write what he was going to do himself. That's sort of odd."

"Maybe he didn't know himself," MacDonald said. "Maybe he was waiting for something to happen when he had the time to leave you the note."

"Anything else interesting?"

"No. The rest was just bills."

The three of them had their first good laugh of the day.

Gruyard smiled, but did not laugh. He never laughed.

They caught up with the retreating army.

* * *

Geraldin had left Fulda before the other three Irishmen and Gruyard. Because of the donkey and the hay cart, he approached Bonn after them.

In some ways, a single man driving a hay cart could get more answers than riders who clearly fell into the category of "armed and dangerous." He didn't even try to go into the city. There wasn't any point. Swinging around it, he headed west, hoping that he was in front of von Uslar's Hessians rather than behind them.

He was, so he kept going. Once he caught up with the army, he turned over the prisoner to the custody of the archbishop's confessor and went on to catch up with Butler and the others. There was a war on and he needed to join his regiment.

Field Headquarters of the Archbishop of Cologne, September 1634

Johann Bernhard Schenk von Schweinsberg thought that this was the fifth interview since he had arrived. Possibly the sixth. He was losing track.

The first two had been fairly polite. The next one had been rather intense. Since then . . .

The interviewer had a copy of the pamphlet. The one with the witchcraft allegations. Clara and Salome.

He would have laughed, if his mouth had not been so painful. He was going to miss his teeth, if he lived through this. He had been rather fond of his remaining teeth. They were so useful for chewing things. Especially when he had been eating the hard bread of a common soldier with Wallenstein's army.

Or carrots. He laughed a little any way.

The clerk who was keeping the protocol of the interview scowled.

Who was here? Schweinsberg took stock of his eyes. The left one hurt less. He opened it.

"Where's Hatzfeldt," he managed to enunciate.

"Gone to Mainz," a voice answered.

"Shut up, Hoheneck" someone said. "You're here to witness, not to chat."

The interviewer posed the next question.

Schweinsberg opened his mouth carefully. He had to answer. Get as much of the answer out as possible as if it were a reply to the question. Then the end of it, before Gruyard cut his lips again.

"Someone," he said. "Someone is going to have to go to Fulda to . . ." He gasped.

"To take the nuns into custody for the abominable crime of witchcraft?" The questioner offered him an answer.

"To take up the care of the abbey."

His mind drifted back to the abbey church and the plainsong of the reformed monks he had brought from Saint Gall. Then to Saint Mary's in Grantville.

Heart of my own heart, whatever befall,
Still be my vision, O Ruler of all.
Great God of heaven, my victory won,
May I reach heaven's joys, O bright heaven's Sun!

He sagged down.

Gruyard looked at him consideringly.

A man in black robes, who had been standing inconspicuously in the rear of the room, started forward, the oils in his hand.

"Too late," Gruyard said.

"Is he faking?" the interviewer asked.

"No. He wasn't in very good shape when Geraldin brought him in, I'm afraid. I've done the best I can."

"Too bad," the interviewer said. "He never did confess. A trial would have been very useful. Pamphlets just don't have the same effect. Not in the long run." He turned to the priest. "There's nothing for you to do here. He died an unrepentant, unconfessed, sinner, incapable of receiving the last rites."

Someone knocked on the door. "You're going to have to finish up in there. The camp is moving."

The interviewer nodded, then realized that he could not be seen through the door. "We'll be right out."

Hoheneck lingered behind the others. There was nothing he could do for the abbot. He wasn't a priest, any more than Schweinsberg had been. He noticed that the priest was also still in the room.

"Mark the burial site, if you possibly can," he directed. "At the very least, make a record of it."

The priest nodded.

* * *

Johann Adolf von Hoheneck was glad for the bustle of the breaking camp. Saddling his horse, he moved out. He wasn't going with the army. Neuhoff was still in Cologne. He would try to protect the archives and treasury from plunderers. He had to go to Mainz, himself. Get a*salva guardia* . Then to Fulda. To take care of the abbey. He assessed himself without illusions. He might not be much of a monk, he might be an ambitious noble, an unwilling and ungrateful Benedictine, but insofar as God had chosen to make him a monk, he was a monk of Fulda and he would defend its interests. As prince and abbot.

Anthem
Buchenland, September 1634

"Through here," the young man said.

"This is quite a track." The hunting parties had recombined and divided once more. Captain Wiegand looked down rather than ahead, careful where he was placing his feet. A half dozen picked men were following him. The rest of the group was heading for Tann openly and frontally.

"Well, as my grandfather said, it's not as if we don't owe him."

"Owe?"

"The man from the Special Commission. The one you're looking for. Irli his name is, I think. He kept the meeting short and snappy when Grandpa reminded him about the hay. They got in the whole winter's supply at Neuenberg that day, before that thunderstorm and hail hit in the night. It would all have been ruined if he'd held them up."

He stopped a minute, then slid between two rocks. Wiegand suddenly understood why his picked men were all very thin men.

"Down this way. They took them out of the castle and into the cave two days ago."

"How did you ever find this?"

"I, ah, I've got a girlfriend who grew up here. On the von der Tann estate."

* * *

Orville Beattie and Mark Early were fine. A bit shopworn after two weeks as von der Tann's "guests," but fine.

Actually, they told Andrea after they got back to Fulda, the man had been pretty considerate.

She decided to hand this one off to Saunders Wendell. He could buck it up the chain to Steve Salatto to decide what to do about it. Especially since the rest of the men had seemed a bit uneasy about this call. She wished Gus would let Harlan out of the infirmary. He was Wes' deputy. She wasn't. But Gus was fussing about Harlan's blood pressure.

* * *

"Where do you suppose he went?" Clara asked.

"Who?"

"The man who was going to torture us."

"I don't know. But I really prefer not to make a closer acquaintance with him, so to speak," Wes said.

"If I have the choice."

"Do you think we're going to get out of here? There hasn't been anybody around. No one at all."

"We'll get out if we ever manage to pry the hinges off this door. Presuming that we manage it before we starve."

"We won't starve for a while yet," Clara said cheerfully. "Consider our good fortune. They locked us in a pantry. Even though we're out of water, we still have a half keg of beer. It even has a slop jar. And a window to throw the slops through, so we don't have to live with them."

Wes put down the garden spade that he was using as a crowbar, sat on the bed, and laughed.

* * *

Karl von Schlitz was protesting bitterly against his rearrest. His lawyer had tried to argue double jeopardy. Andrea's lawyer had rebutted.

Von Schlitz's lawyer protested even more strongly in regard to the arrest of the two sons. There was nothing but suspicion against them, he insisted. At the very least, the government should allow them to sign*Urfehden* . The administration had no reason not to release them on bond.

"The hell of it," Derek Utt said to Saunders Wendell, "is that we really don't have anything on them except suspicion. And I swear that we have looked through every building on their estates from cellar to attic, more than once. Being sure to make plenty of noise, so that if Wes and Clara were in some kind of priest's hole, they would hear us and yell. If they can, of course."

Wendell looked grim. "I can't stay much longer. We've got to get back to Steve. They're running a crisis over in Bamberg, too."

* * *

"Let's put out placards," Andrea said. "All over Fulda. Not asking about Wes and Clara. Asking if anybody knows anything about some other building that von Schlitz has. List the ones we've looked at. Offer a reward for information about any others. Von Schlitz has to have been hiding*somewhere* between when they took him off the wagon and when he surfaced again."

"All right," her lawyer said. "I'll take care of it. Give me the list and I'll take it to the printer."

"I have it here," Captain Wiegand said. "You can make a copy off this one."

The lawyer took it. Looked down it. Shook his head. "It's not complete."

"Yes it is."

"No." The lawyer turned to Andrea. "Have Louis bring in those duplicate*Urbare* that we had from the provost over that way."

She frowned. Who was Louis? Oh, the gofer. She sent him.

The duplicate ledger landed on the table with a thunk. The lawyer started leafing through it.

"Here, this page. They've omitted everything on it. It has to do with a small estate that the current owner's great-uncle purchased for the use of his mistress."

* * *

"Someone's coming," Clara said. She listened for a while. "A lot of someones, with horses."

"We'd better get back as far as possible, until we figure out who it is. Why don't you get onto that pantry shelf that we've emptied."

"While you peek out the window? No way!"

"Clara!"

"Either both in the back of the pantry or both peeking out the window. Andrea has told me all about equal rights for women. That's in the constitution, too."

"It doesn't mean," Wes said with some frustration, "that a man can't take care of his own wife."

"It means he can't keep her from having any of the fun. Anyway, I can hear the Fulda Barracks Regiment anthem. No one else sings it." She came up to the window. "Look, I can see the banner too. Orange and white. They've finally figured out where we are."

"Well," Wes said, "that's more than I've managed to do. I was wondering, all the while we were working on those hinges, how we would find our way back. It's nice to have the cavalry come to the rescue. Or the mounted infantry, I suppose, if you want to be technical about it."

You were their rock, their fortress and their might,
You, Lord, their captain in the well-fought fight.

Wes frowned. "Derek really shouldn't have let Veleda Riddle pick out an anthem for the regiment, even if she is Mary Kathryn's grandmother. Why did the only kamikaze Episcopalian in the United States of America have to live in Grantville? They're usually pretty sedate and uptight, but if Veleda has her way, Fred will have to use his reserved tennis figurines for Episcopalians on his map."

Clara leaned her head against his shoulder. "Once we tell them that we married each other, we will have to fill out a lot of paper work, you know."

He cleared his throat. "Maybe we should just tell them that we're going to get married when we have a chance and then do it properly."

"If you think that I am going to move back in with Andrea while her little lawyer spends six weeks or three months drawing up a proper betrothal agreement and marriage contract, you are crazy, Wesley. There isn't even a Lutheran church in Fulda to read the banns."

"But . . . Clara, I'm the administrator. I should be setting a good example, and all that. And I don't want anyone to think that I am treating you with less than complete respect."

"You think they will consider it to be more respectable that I have been in this pantry with you for so many days and we*don't* tell them that we have married each other?" She turned around.

After the way she kissed him, he agreed that he would be a crazy idea to even suggest such a thing as having her move back in with Andrea. But.

Oh may your soldiers, faithful, true, and bold,
Fight as the saints who boldly fought of old.
And win with them the victor's crown of gold.

The horses disappeared behind a hill on the curving road. The singing faded. Pretty soon, the lead horses were in view again.

"Maybe we could have a church ceremony later? I'd really feel a lot better if we had a marriage license from Grantville and Reverend Jones said the words. Even after the fact."

That much, she conceded, could happen. Whenever they went back to Grantville. It would make the lawyers and bureaucrats happier. The main reason they hated do-it-yourself marriage was that it did not leave a record and caused all sorts of subsequent arguments if it turned out that one partner was already married to someone else, or if one or the other party tried to back out. "Not that either of us ever would."

She was still facing him, her arms around his neck. She kissed him again. He agreed it seemed unlikely that either of them would ever try to undo their marriage.

They listened.

And when the fight is fierce, the warfare long,
Steals on the ear the distant triumph song,
And hearts are brave again and arms are strong.

The strains of Ralph Vaughan Williams'*Sine nomine* rang through the*Reichsritterschaft* of Schlitz.

The golden evening brightens in the west.
Soon, soon to faithful warriors comes their rest.

Wes picked up the garden spade. As soon as they got close enough, if the Fulda Barracks Regiment ever stopped howling out their anthem long enough that they could hear him, he would start banging on the bars to save them time in figuring out where he and Clara were in the building.

He shook his head. That blasted song really stayed with a person. He'd heard it before, he was sure, but couldn't remember what the name was. He'd have to ask what it was called.

* * *

"I've had enough."

Wes told the whole staff at once, at the regular morning meeting. "Now that Harlan has agreed to cover Andrea's cost overruns in the land titles department, which I fully agree turned out to be worth it in the long run, I've asked Ed Piazza to relieve me, and he's agreed. I'm going back to Grantville to take over the consular service. Our people still manage to get in enough trouble that the State of Thuringia-Franconia needs its own consular service. With Clara, since her job as liaison has sort of been ended by circumstances."

"You're looking pretty happy," Andrea said. "Aren't you going to miss dear old Fulda?"

"Not the town. And Mel Springer will do fine here in the interim, until we get an elected board of commissioners in the spring and can transfer authority. I have full confidence that all of you will back him up."

The strains of the Fulda Barracks Regiment singing its anthem came up from the square in front of the administration building. Wes got up and walked to the window, looking down, then over at St. Michael's church.

"But. I never thought I'd say it, when he first showed up. But honest to goodness, I'm going to sort of miss Schweinsberg."

He looked up, toward the*Vogelsberg* , out over the hills that surrounded the town. "The guy was more of a politician than a monk, I guess, but still, I'm sorry that the search parties never found him. There are a lot of places he could be, out there. If we had found his body, at least, we could have brought it back so the abbey could give him a decent burial with all the others. He was the abbot. He belongs there."

The Fulda Barracks Regiment down below redoubled its efforts.

Wes glanced back at the table. "Derek, what*is* that song called in English?"

Derek Utt looked at him. "For All the Saints."

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A Question of Faith

by Anette Pedersen

Grantville, June 1633

"Could I have a word with you, Father Johannes?"

Johannes Grunwald jumped up from the table with a gasp and spun around quickly, sending several maps and notes to the floor. "Sorry, I wasn't expecting anybody. It's rather late." He looked at the elegant young man in the doorway, and relaxed slightly. He had met Don Francisco Nasi only in passing, but, while the head of the Abrabanel financial network in Germany might not be the most reassuring person to make an unexpected appearance close to midnight, the young Jew wasn't likely to be a personal threat either. Johannes looked down on the maps and floor plans on the table. "Please sit down, Don Francisco, I don't suppose you have much need to know the layout of Fulda's main buildings?"

"Not much, no. But my apology for startling you, Father Johannes. I suppose you are preparing something for the NUS team in Fulda?" Francisco Nasi closed the door and sat down at the table in the high school classroom, considering the German priest. Father Johannes had been one of the foremost painters of propaganda broadsheets for the Holy Roman Empire until the atrocities at Magdeburg had made him revolt, flee and finally—a year and a half ago—seek refuge in Grantville. He had easily been worth his stipend as a teacher, not so much for his knowledge of languages and paints, as because after two decades of painting for both clerical and secular rulers all over Germany, his knowledge of people, towns, and buildings was without equal among the new citizens in Grantville. "I was wondering, Father Johannes, if you'd heard anything from the Inquisition?"

"No. Nothing." Johannes sat down at the table too, and fiddled with his pen. "Father Mazzare's contacts within the Church tell of several people asking for Father Johannes the painter, but those asking are seemingly just interested in having me come to paint for them. I am told you head a vast network of all kinds of contacts, Don Francisco. Have you heard anything?"

"Oh no, nothing about you from the Inquisition," Don Francisco smiled. "Do you worry about an abduction? Or perhaps a formal request for you?"

"I don't think those I personally insulted at Magdeburg have enough power for either. My main value to anybody seems to be the paintings I make. I would like that, if only people wanted their beauty rather than their propaganda value." Johannes shrugged. "Frankly, the most likely thing to happen is an attempt to make me go back to making propaganda for the Church—willingly or under threat from the Inquisition. If I refuse that, but keep a low profile, I may be excommunicated or I may just be ignored. Only if I'm seen to work against the Church—or its political interests—do I expect any serious force to be brought against me. In which case an assassination may be easier to arrange than an abduction, at least in the areas where the Americans keep order."

"I see." Don Francisco leaned back in the chair and steepled his hands. "As I said, I've heard nothing about you in connection with the Inquisition. But I was wondering if you might be willing to leave Grantville. Perhaps to accept a few commissions from some of the more open-minded and politically neutral of your old patrons?"

"And?" Father Johannes too leaned back and looked straight at the polished young man across the table.

Don Francisco shrugged. "Look out for opportunities. Keep your options open, I think the Americans

call it."

Johannes kept looking. "Please excuse my rudeness, Don Francisco, but why are you taking an interest in this? Are you asking me to report to you?"

"If you so wish. You haven't been excommunicated, so you're still a Catholic priest. And a man. With loyalties to whomever or whatever you are loyal to."

"And just what, Don Francisco, are you loyal to?"

"Primarily my family and my faith. Is that so different from you?"

"No. Different family and different faith, of course, but that's not my problem. Where do the Americans enter your loyalties?"

"The Americans? Not the NUS or CPE?"

Johannes nodded. "Ideas and ideals, not politics and compromises."

Don Francisco raised his eyebrows and looked up at the ceiling, "What the Americans have begun may well be the best chance for prosperity and security in Europe today, for my family as well as for my faith. We realize that they are just a small town and risk drowning in the greater political picture. So I—and my family—try to aid them. Help them help themselves and thus ourselves." He looked back again to Johannes. "You have, since your arrival here, been giving the American leaders quite a lot of help yourself, Father Johannes, with your lessons in Contemporary Social and Political Studies."

Johannes laughed a little, "Oh yes. Everything I Know About the Present Political Situation—its Players and Powers. Still, my family and I owe the Americans a debt for helping little Johann, the son of my nephew Herr Martin Grunwald."

"And that debt is the only reason for your help? You don't agree with the American goals?"

Johannes shrugged, "Both yes and no. Aside from teaching and painting I've spent just about every spare waking moment reading the American books of history and philosophy. I think I've got a good idea of what they are and what they are trying to do. On the whole I'm fairly certain I approve. What still bothers me is that all these important new ideas come from people who seemingly fear neither God nor the Devil. How about you, Don Francisco? Do you fear God and do you fear the Devil?"

"I'm a Jew, Father Johannes. Our faith is different. Personally I hope God will have mercy on my human frailty, and think that the Devil—if such exists—does his work on Earth and among the living." Don Francisco rose from his chair. "But please consider my words, Father Johannes. The American's alliance with the Swedish king has made them a power to consider. It would be well to know how this is viewed among the clerical nobility."

"I'll think about it." Johannes started gathering his papers, but Don Francisco remained by the table watching him.

"You have been supplying the American leaders with all kinds of information, Father Johannes. And by now the Americans are being taken very seriously by both the Catholic Church and the secular powers. Do think—carefully."

Grantville, August 1633

The Thuringen Gardens was filled almost to capacity in the warm and dusty afternoon, but Johannes steered his friend, Frank Erbst, to a quiet corner. Frank was a big, strong, red-haired bear of a man, with a warm smile and an ever-ready interest in the world around him. He and Johannes had grown up together on Grunwald-an-der-Saale, the estate Frank now managed for Johannes' older brother Marcus Grunwald, professor of theology at the University in Jena. Ever since his arrival in Grantville, Johannes had been sending seeds and information about American farming to Frank. Despite Marcus' dislike of everything connected with the Americans, Frank had—with great enthusiasm—put the new crops and ideas to use at the estate. And despite the drought, the tomatoes and long beans had been running rampant during the summer on the sunny hillsides along the Saale River. Now, just before the main harvest was about to start, Frank had come to Grantville—the best market for the new crops—to make arrangements with several traders.

With their second tankards half-drained, the two old friends were now catching up on family news.

"Have you heard from your nephew Martin recently, Johannes? He was scuttling around like a woodcock on his new crutches, when I went to Jena last spring. He also wanted me to write to him about growing the new crops. He seemed to be doing some kind of*avisa* ."

Johannes laughed, "It's not an*avisa* , Frank. I sent Martin some copies I'd made of the Americans' magazines, especially one in German called*Simplicissimus* . Martin has become the publisher of a monthly newspaper magazine—with his wife, Louisa, handling the legwork and the practical arrangements. Marcus helped with getting the permissions before he saw just what Martin and Louisa intend to publish."

"I've seen such before." Frank shrugged. "Why would Marcus object to council decisions posted on tavern walls."

"*Simplicissimus*is different, Frank. The Americans are every bit as good at this, as they are at farming. What Martin offers for public subscription, and delivers by post every month—soon every two weeks—is a mixture of information and entertainment. There's the latest political news, along with detailed explanations about the persons and places mentioned. There are colored plates with the latest fashions, printed with new American methods. There are pictures and descriptions of beautiful homes, and recipes for the most fashionable food. And most of all: there are illustrated jokes and gossip about court scandals and political mistakes. I've made quite a lot of those illustrations for the new magazine. I promise you, it's like nothing you've seen before. I'll give you some copies to take home."

"Sounds odd to me, but I can well imagine my wife and her sisters with their heads together over such a thing."

"Yes. And taverns, public libraries, noble households, city councils, discussion groups and students. They are all buying it for the political news, you see. Never dreaming of reading the gossip."

"Becoming a cynic, Johannes?"

The whimsy faded from Johannes eyes, and he called for two more beers before continuing in an entirely different voice. "The Americans genuinely want to stop things like war, plague, and poverty, and they see

democracy and education as some of the most important steps towards that goal. Judging from their history, they are right. Martin is promoting these ideas—spreading them among the gossip and jokes in his new magazine. I have helped him do that, but . . ."

"But now you regret that?"

"No. And I'll also go on making those pro-democracy cartoons." Johannes drank deeply from his beer. "It's just that . . . There is nothing among the American ideas to encourage people to bow to God's will or trust his priests."

Frank sat silently for a while, doodling in the wet circles on the table. Bowing to God's will was something you occasionally were forced to do, when no other choices existed. And trusting a priest? That damned well depended on the priest! Frank had no objection to trusting a trustworthy man who happened also to be a priest. But then that went for tinkers and horse traders as well. Still, even after all his fellow priests had done to him, Johannes saw things differently, and in the end Frank said slowly, "I remember a letter you wrote before taking your vows, Johannes. About how some of your fellow students held long discussions about exactly how many imps were around in the world, and the precise rank of the various kinds of angels in Heaven. These discussions irritated you, since the truth could not be known. Unless you've been having divine visions on the sly, you cannot know the future, and I'd say you should just follow your heart."

"Well, my heart tells me that however they got here, the Americans are not here for evil. Their lack of respect for the Lord still bothers me, but you are right—I cannot know the future. And it's about time that I decided what I personally should do—with or without the Americans—instead of hiding here." Johannes smiled wryly into his beer. "I used to be such a self-absorbed little artist, ignoring everything but my paintings, even when reality kicked my arse. Well, Magdeburg definitely did more than just kick, and after my stay here in Grantville, it's certain I'll never go back to what I was."

"Do you plan to leave? You wrote that you felt safe here, but you could go to Jena—or with me back to the estate?"

"I'm probably safer with the Americans than anywhere else. The Inquisition has no power here in Grantville, and Father Mazzare has assured me that I have committed no crime as the Americans see it. In Jena I know Marcus would try to protect me—his pride if nothing else would see to that—but he might not be able to. The Inquisition has no power there. Catholics accusing me of heresy or excommunicating me would not cause trouble with the Protestants. More probably, it would delight them. But blasphemy is an entirely different matter."

"Blasphemy! You?" Frank laughed.

"That depends on how you define blasphemy, Frank. I was much too upset about Magdeburg to weigh my words. But no, I don't think I'll stay here much longer. Perhaps for the winter. It's safe and pleasant, but I'm tired of hiding, and I don't really feel at home among the Americans." Johannes smiled again. "When I first arrived, I actually went around asking people: 'Do you fear God, and do you fear the Devil?' Father Mazzare answered that he did fear the Devil, not as a physical figure but as the evil in mankind. The Lord, he did not fear, as the love was too great to leave room for any fear."

"I like that."

"Me too. I finally stopped asking after a young American woman answered: 'Of course not, God is good, and once you know the Devil, you can just avoid him.'" Johannes shook his head. "Such

arrogance."

"And after such a wise counsel, you too decided to trust that God is good and put your faith in Him? You know, " said Frank, chuckling, "that's just the kind of thing Louisa's late sister, Anna, could have said." Then he went on, still smiling. "I've always wondered if you were not at least a little in love with Anna?"

"Don't be silly. Anna was a frivolous little feather head."

"And?"

"And she was also a married woman, and I am a Catholic priest."

Frank laughed at his friend. "I've long felt that you needed to do something like falling in love with a married woman. In fact, do anything that would make you forget your paintings and pay some more attention to the people around you. But seriously, what are you planning to do?"

"There's a man here in Grantville, a Jew named Francisco Nasi. He has suggested accepting a few commissions from some of my old patrons. Keeping my options open, the Americans call it." Johannes looked into his beer and smiled.

"Well, I can think of a few other things to call that." Frank's smile turned into a scowl. "Can't you think of anything better to do with your life?"

"Oh yes. I haven't been excommunicated, so I'm still a priest. I've been helping Father Mazzare at Saint Mary's here in Grantville, but I never was a parish priest and don't plan to make a living from that. Instead I'm becoming what the Americans call a middleman for a while."

"An*entremeteur* ? Well, you did tell me some Americans called priests 'God-pimps.'" Frank laughed until he nearly fell off the chair.

"Don't be vulgar. It's perfectly respectable. And I better go find some food; it's not small beer we've been drinking." Johannes walked off in a huff.

Even with platters of bread, cheese, pickles and sausage in front of him, Frank kept chuckling, and, as the food reached his stomach, Johannes started smiling too.

"All right Frank, you won that one. But it's actually a very interesting project. And if it works, even the middleman's share is likely to be more money than either of us have ever seen."

"Sounds very interesting." Frank was suddenly very serious. "With two years of drought, the water in the Saale River is too low for even the rafts to float, and most of the profit from the estate is used to pay for transporting the goods overland. If it hadn't been for the American crops, there would have been nothing left for your brother's household in Jena. He's paid by the university, so it's not that big a problem for him, but two of my brothers-in-law are forced to look for paying work this winter. With grain yields as low as two to one, they'll be forced to eat the seed grain, and buy new come spring."

"That bad? Tell them to come here to Grantville. Especially people used to working with wood or metal are badly needed. And they could learn about the new farming methods from Herr Willie Ray Hudson in the evenings. I'll introduce you to Herr Hudson, and you can write letters of recommendation. And if any adult female can be spared from the households, they can come too; many of the things the Americans do

don't need large muscles."

"My sister Felicia is almost as strong as I am, but it's a very good idea. Thank you. But what is this project of yours?"

"You know porcelain, that beautiful white ceramic imported from China? My mother was so proud of the two porcelain figurines she used to decorate her table at formal dinners along with the more common figures modeled in that sugar paste called*tragant* . But my first hostess here in Grantville, Frau Kindred, has two big cupboards full of porcelain, including an entire formal dinner set for twelve persons, and a less ornate set, which the family eats from every day. The children too."

"I don't believe that."

"It's true. What her grandchildren are not allowed to touch are those beautiful bowls, vases and figurines kept in a glass-fronted cabinet. The oldest, and very finest, are called Meissen."

"Meissen? In Saxony? On the river Elbe near Dresden?"

"Yes. There are people here in Grantville already working on producing porcelain from local clays. But Grantville is not a good place for a large scale production. It's just too far from the main routes of transportation. We would need to move the best clay here from Saxony, get the fuel for the big ovens, and then transport the finished products along the roads. That is just not practical." Johannes stopped to work his fingers and loosen the joints. "I want to work with painting the some of the items myself; Frau Kindred's figurines made my fingers itch to try something similar."

"Where do you plan to build the factory? Jena?"

"No. The Saale River is not really big enough for transportation above Halle. We need a place near a reliable river connection. We are financing the project by selling shares. And since every royal and noble household in Europe has been paying their weight in gold for the imports, we are having no problems getting all the money we want. The Grantville Council and the Swedish administration have already brought large shares, as have various people in Saxony. Most of the Saxon investors want the new factories in Dresden, while the Americans—and I—want Magdeburg."

"To help heal what happened there?"

"Yes. And if I go back to painting, the way Don Francisco suggests, I could sell shares where I went. I get percentage of each sale—in shares of course"

"You've certainly connected with the real world, Johannes."

"Yes. Did you ever hear the story about what the sailor said to the nun? And let us have another beer. Remembering Magdeburg still makes me angry."

* * *

Early the following morning, Johannes and Frank walked through the sunny streets from their lodgings to the Grange. Despite the early hour, someone was repairing one of the American machines for working in the fields in the parking lot and several horses were tied to the wooden posts erected along one side. In the hall inside the building they found old Willie Ray talking to a delicately built, dark-haired young man whose outfit proclaimed him a cavalry officer, and a big tow-haired man, who was dressed like a servant

but had the hands and sunburn of a farmer.

"Good morning, Father Johannes." Willie Ray nodded to Johannes and turned back to his young visitor. "You asked about the crops painted on the walls here, and here is the painter himself. Father Johannes please meet Prince Ulrik of Denmark. Officially, of course, he is a visiting Danish nobleman, but there's not much point in trying to pretend with you. You know too many people. Well, then. If the two of you will excuse me I'll go find our pamphlets about dairy farming."

The young man stepped forward and shook hands with Johannes, while Frank bowed and went to talk with the prince's big companion.

Prince Ulrik was the youngest of three sons King Christian IV of Denmark had sired on his queen. Johannes knew that the Swedish king Gustavus Adolphus—whom the young prince had once served as a officer—considered Ulrik to be by far the best of the Danish king's many children. He was certainly the brightest and most virtuous. Johannes had read a short pamphlet,*Castigation of the Vices* , that Prince Ulrik had written a few years ago. He met the lively, dark eyes of the intellectual young prince with delight.

"Your Royal Highness." Johannes followed the young prince's handshake with a deep bow. "I am honored to meet you. Would you care for some refreshment? I know the contents of the jugs on the table are available to visitors."

"Yes, please. Wine if possible." Prince Ulrik smiled, and gestured for Johannes to take a seat on the other chair beside the open window.

"So, you do drink alcohol?" Faced with the friendly smile, Johannes relaxed and dropped most of his formality. Some nobles, even when they were officially traveling incognito, took offense if even the least title or obeisance were omitted, but clearly Prince Ulrik did not. Not to mention that his own stay in Grantville had made him rather impatient with such. "I took the greatest pleasure in reading your treatise on the vices last year." He handed the prince a rather coarse mug of red wine.

"Thank you." Prince Ulrik smiled wryly. "At the time I really had nothing to do except writing and doing a few paintings. But it is the lack of moderation in man, rather than the innocent wine I'm opposed to. After all, even Our Lord Jesus created wine." He sipped the wine and raised his eyebrows in surprise. "An excellent quality. But your works are known to me too, Father Johannes. At least I do suppose that the JIGI, who draws those political satires in the*Simplicissimus Magazine* , is the same Father Johannes, whose paintings I admired at the Jesuit school in Wuerzburg?"

"It is, but I had no idea the similarity was that obvious."

"It's not. But I have seen your broadsheets too, and even copied your way of creating shades during my own meager attempts at the art." Prince Ulrik smile flashed in his narrow, sunburned face. "I have no intention of mentioning this to anyone, as your use of a pseudonym indicates a wish to be incognito. In fact, I have been pondering possible additional benefits of incognito myself."

"Oh?"

"His Swedish Majesty, King Gustavus Adolphus, has always shown me the greatest kindness," the prince said with a pensive frown. "Last year I had intended to take service in Saxony with relatives of my late mother, but His Majesty wrote to me in his own hand, warning me not to do so. Instead I was to come to him as soon as my duties to my royal father permitted this. The American books had warned,

not only when and where King Gustavus would die, but also that I would be assassinated while in Saxon service this very year. His Majesty wanted me to enter his service again, but my royal father forbade that. Instead I have been traveling on my father's behalf." Prince Ulrik shook his head. "Questioning farmers about breeding cows is not beneath my dignity—and Lars was sent with me to ensure I asked the right questions—but the increasing tension between King Gustavus and my royal father has given me a better appreciation of anonymity. Not to mention the problems between his Swedish majesty and my late mother's family in Brandenburg and Mecklenburg." Prince Ulrik smiled again. "Still, it's not yet bad enough to make me abandon my duties and renounce my family and title." He then turned serious. "I'd planned to stay in Grantville for a while, Father Johannes, to indulge myself in some studying before returning to Denmark. But Grantville is a republic, and I'm not certain a royal prince would be welcome here. You have lived here for years, Father Johannes, would you expect my royal connection to be a problem?"

"Your Highness, I have absolutely no idea." Johannes looked toward where Frank and Lars had been joined by Willie Ray, who was showing the two farmers something in the papers he was holding. "The Americans pay little attention to formal rank, and are very devoted to the idea of democracy. Calling them republicans is a bit like calling the pope a Catholic. On the other hand they have no problem—mostly—with accepting King Gustavus Adolphus as their Captain-General, and welcome him quite warmly. That your royal connections are Danish might in fact be more of a problem." Johannes frowned. "The American attitude towards enemies is different from what I would have expected, but I cannot quite pinpoint the nature of the difference. The propaganda against the Holy Roman Empire is almost absent here in Grantville, and the Catholic Church seems quite welcome, but if the recent tension became war?" Johannes shrugged. "I just don't know."

Grantville, September 1633

That the weather had suddenly changed to autumn. A cold gale roamed the streets but seemed to have no effect on the activities going on. Johannes kept close to the tall brick buildings to avoid getting jostled. The smooth black surface beneath his boots was slippery with wet leaves as he walked towards his lodgings in the Heinzerlings' house next to St. Mary's Catholic Church. He was looking forward to a few quiet hours making drawings of the English king's latest antics.

"Father Johannes, come inside,*bitte* ." As he passed the neighbor's house, the door opened and Gertrude Wiegert waved at him. A pretty young girl from the poorest part of Jena she had been destined for a life of prostitution like the older women in her family until Gretchen and Jeff Higgins had brought her to study in Grantville.

In the cozy living room a young man sat with a mug of warm beer in his hands, but rose when Johannes entered. "Father Johannes please meet Oswald Weisshaus. He's a friend of my family from Jena, and also a friend of Gretchen and Herr Jeff Higgins. He would like to speak with you. Would you like a mulled beer?"

Johannes accepted and sat down.

"Good evening, Father," said Oswald Weisshaus resuming his seat, "I think Gretchen and Herr Jeff Higgins mentioned you during one of their visits. You are Professor Marcus Grunwald's younger brother, and don't share his dislike of Americans and new ideas, yes?"

"That is right, Herr Weisshaus. I'm sure Gretchen also told you that I don't fully agree with her either."

"She did." The young man suddenly grinned, making Johannes wonder just what Gretchen had said about him. "Still," Oswald went on more seriously, "the man asking questions about the younger Grunwald brother was no friend of anyone."

"When was this, and who did he claim to be?" Johannes asked, suddenly alert.

"He didn't give a name, and it was a week ago tomorrow."

Gertrude interrupted, putting a warm mug on the table. "He was a real creep. He made himself so obnoxious that Oswald and the others threw him out of the new Freedom Arches."

"Yes," said Oswald. "But we've kept an eye on him, and he's staying in the Golden Star."

"That takes money. Any sign of soldiers with him?" If the Inquisition had send a single man to Protestant Jena, this might be the contact attempt Johannes had been waiting for. Though from what Gertrude had said, there wasn't much chance for an agreement with this man.

"None. Are you in trouble?"

"Probably," Johannes smiled, "but how much I just cannot figure out. Nor with whom. Thanks for the warning. Any other news from Jena?"

Jena, September 1633

The Grunwald house in Jena had been changed in the eight years since Johannes' previous visit. Not on the outside; that was still a big, sprawling construct built about a hundred years ago, shortly before the nearby Dominican monastery had been converted into the Jena University. The house had come into the family as a part of his grandmother's dower, and Johannes had lived there for several months of every year when he was a child. The small court behind the gates had been decorated with flowers in summer and small evergreen trees in winter when Marcus' wife, Catharina, had still been alive; now it was swept and clean but with no decorations. The main building was directly across the court, fronted by an imposing modern staircase built when Marcus had become professor of theology, but Johannes turned right to a door separated from the ground by only a single step. As the only son of the house, Martin had once had a spacious apartment on the second floor of the main house, but after the loss of one leg from the knee down at Magdeburg, he and his small family had moved to a place with fewer steps for him to climb.

"Uncle Johannes." Martin looked up and smiled. "Louisa told me you'd gone out very early this morning. Weren't you tired after arriving so late last night?"

"Yes, but I slept like a log and woke early." Johannes sat down and stretched out his legs. "It's been a long day, though."

"Did you accomplish what you set out to do?"

"More or less. I had a few surprises," Johannes scowled. "Elector John George of Saxony has donated

the Castle Albrechtsburg in Meissen to the porcelain project, on the condition that the porcelain produced is called Meissen also in this world. The vote among the holders of the porcelain shares are now in favor of Meissen over Magdeburg."

"Frankly, Uncle Johannes, it makes sense to me. Sure, gas ovens would make the production much easier, but you told me they cannot be built yet. In Meissen you'll have the materials nearby, and the wood from the Saxon forests can float down the river to almost outside the factory door. It worked in the American world."

"Actually the clay is not near Meissen. It's from a place near Aue on the river Mulde. If it could be transported on the rivers it actually would be easier getting it downriver to Magdeburg than upriver to Meissen. Unfortunately the Mulde is as unreliable for transportation as the Saale, and overland the easiest track to the river Elbe goes by Dresden and Meissen." Johannes looked up at the big map on the wall behind Martin with the postal routes drawn in red ink and the rivers in blue. "I would have preferred not to put the factory in an area controlled by John George of Saxony. What tipped the scale, however, had little to do with logic. The shareholders liked the notion that in the isolated Albrechtsburg the 'secret' could be kept. Which in my opinion is pure nonsense, as the 'secret' is freely for sale in the books from Grantville. Sure, a lot of practical problems must be solved before anyone else can start production, but those solutions we must first discover too. With the work already going on in Grantville, we may have a head start on, for example, the French, but how to make porcelain is no longer a secret." Johannes sighed. "I finally got a consensus on the project starting in Meissen—presumably next summer, but with a second factory to open later in Magdeburg. Albrechtsburg Meissen will specialize in casting dinner sets and the simpler shapes and also do some stoneware. Magdeburg Meissen will experiment with glazing and do the finely detailed figures once the gas ovens are ready."

"A most Solomonic solution."

"Machiavellian too; porcelain glazes have all kinds of military uses. John George of Saxony doesn't know that." Johannes smiled at his nephew. It really didn't seem possible that the gentle and scholastic Martin had been a mercenary officer, and now wanted to become a*novellante* —well sort of. "But how about the magazine? Last night you just said it was going well."

"It is." Martin tried to look serious, but couldn't hold back a big grin. "The number of subscribers to *Simplicissimus* has now reached ten thousand, and we have direct deliveries to all major German towns, except in Bavaria, where we are on the edge of being banned."

"That's wonderful! But how did it grow so big so soon? I advised you to make a big first printing and spread them around for free to show people what you were making. That seems to be the way the Americans do it when they want to sell something new."

"Yes, but I also used every single connection we have: family, scholars, bankers, merchants. Every one. Even the Committee of Correspondence, Mother's family and*Grandmère's* family in France. Asking for news, information, etc. And a quite surprising number send back money for a subscription; apparently everybody wants to keep track of what is going on around the Americans. It truly is wonderful. But what now for you? Are you going to Saxony?"

Johannes looked at Martin; aside from Frank Erbst, there really wasn't anyone he cared more about or trusted more. And besides, Martin might see something Johannes didn't. "About a week ago I met a man in Grantville, Herr Oswald Weisshaus, a student here in Jena. He told me of a man asking questions about me around Jena."

"The Inquisition?"

"Sort of, only not quite. The man is staying at The Golden Star, and I went to see him today. Turned out he was working for Franz von Hatzfeldt, the prince-bishop of Wuerzburg, whose diocese is now, since the autumn of 1632, administered by Grantville under the Swedes' agreement with Herr Stearns. Bishop Hatzfeldt is in Bonn, and he wants his land back."

"I thought Bishop Hatzfeldt had gone to the family estate east of Cologne." Martin made a note on a piece of paper. "But never mind that. Just how do you—and the Inquisition—enter into that?"

"I met the bishop in 1627, while I was doing some paintings at the*collegium*in Bamberg, and he was the leader of their diplomatic corps. The bishop of Bamberg, Johann Georg Fuchs von Dornheim had just gifted Hatzfeldt with the administration of Vizedans in Carinthia, and Hatzfeldt wanted some decorations for his new house there. Now Hatzfeldt has offered to 'arrange' a total pardon for my behavior at Magdeburg. You know: high-strung artist, cracking under the strain, etc."

"And in return for what?"

"Just me telling him about the Americans, so he can approach them properly, and convince them—and King Gustavus Adolphus—to give him back his bishopric."

"Double agent. Don't go there, Johannes."

"Who knows? The Americans*might* do for him what they have done for the abbot of Fulda. Give him back all of the work but none of the income, while they assign a 'liaison' to watch him closely." Father Johannes smiled grimly. "But I've changed a lot from that naive, little painter Hatzfeldt knew. The old Johannes would have taken that bait, while now I want to think about it. And talk with a man named Francisco Nasi in Grantville."

Martin took a round, dark bottle and two glasses from the cupboard behind him, filled the glasses with the thick, golden liquid, and pushed one towards Johannes. "Between the war and the Americans, I wonder either of us knows who he is or what he believes in any more. If there are many of us in the Germanies who know who we are or what we believe in any more."

Grantville, Early October 1633

The news about the Danish attack on Wismar had reached Jena just as Johannes was about to leave. As he rode through the misty drizzle into Grantville the following evening, the usual hustle and bustle of the town was subdued. People stood talking quietly in small groups instead of hurrying in all directions, and even the Thuringen Gardens was almost silent in the hazy twilight.

Johannes returned the borrowed horse to the stable behind the Heinzerlings' house and went to knock on the door to the main house. He was renting two rooms in one of the converted outbuildings, but although he was wet, sore and tired after the long ride, it seemed better to hear the news as soon as possible.

After telling Johannes about the battle, and the death of the young men, in his usual profane version of the German language, Father Heinzerling mentioned that Don Francisco had sent a message asking for

Johannes to come visit at his earliest convenience, so—after sending a longing thought to his waiting bed—Johannes went off again.

* * *

"You asked to see me, Don Francisco?" Johannes had found the young Jew still in his office.

"Ah! Yes. Please sit down, Father Johannes. I understand you are acquainted with Prince Ulrik of Denmark?"

"Yes. Has there been trouble? I've heard about the battle."

"Denmark is now officially at war with the CPE—or the United States of Europe as I understand that it will soon be named. The town was most upset about the death of Hans Richter and the young American officers. Prince Ulrik's identity is not publicly known, of course, but he did not conceal that he was Danish. A visiting Danish nobleman. Some of the town's more unruly elements, although they did not dare to threaten an armed man who could be expected to have a fair amount of skill at close-in fighting, attacked his servants while they were working in the stables, unarmed. They beat one of them rather badly before the police arrived."

"And the prince?"

Don Francisco's smile didn't quite reach his eyes. "The prince is safe, although he found the attack on Lars unexpectedly upsetting. He wishes to talk with you before making a decision. Prince Ulrik is a cavalry officer by profession. His primary loyalty must be expected to be to his royal father, King Christian of Denmark. Even so, King Gustavus Adolphus has sent a message asking for his young relative to give parole and travel to him with an escort of Swedish soldiers. But as I said, the prince wished to talk with you first."

* * *

Prince Ulrik was standing with his back to the room, gazing out the window at the lights from the town flickering in the darkness, when Johannes entered. After a brief glance over his shoulder, the young man returned to his view.

Johannes considered a formal greeting, but decided to just stand and wait.

"Do you remember who wrote that democracy was just another word for the rule of the mob?" Prince Ulrik's voice was devoid of emotion, as if he were inquiring about a minor philosophical point of no particular importance.

"No, but I think he was British."

"That . . . That sounds likely." Prince Ulrik took a deep breath. "Any ideas why they attacked my servants?"

"It could be because they consider a servant as important as a prince. Still, the attackers did not know that you were a prince and, thanks to the prudence of the Grantville police, still do not know it. They only knew that you are the subject of what they call an 'enemy nation.' So I consider it more likely that they simply were so cowardly that they preferred to attack the unarmed. The men attacking your servants would hardly be considered upstanding citizens. Surely you've seen soldiers run amok and turn into a

mob after a battle?"

"Yes." Prince Ulrik sighed and leaned his head against the window. "I suppose it was foolish of me to expect the Americans to be more civilized than that."

"People are people, and when they are hurt, they bite. I suppose being civilized is really just a question of having the self control to bite only those who hurt you, rather than whoever is near."

"I have read several pamphlets from a group called the Committee of Correspondence. Do you think they are behind this?"

"No. The committee might include the most radical and revolutionary of both Germans and Americans, but they are not stupid and they are not ruled by their emotions. This attack on you had to be based entirely on emotions."

"The American books do not tell why I was assassinated in the American world—or by whom."

"No." Johannes smiled. "But since you were in Saxon service, I'd say you should seek the reason in that court. Or rather that you should stay away from it."

"The corruption there makes me sick! All my mother's family . . . And the drunkenness in my father's . . ." Prince Ulrik fell silent for a moment. "I never said that, Father Johannes."

"*Sub Rosa*, Prince Ulrik. And that you are Protestant does not change that for me." Johannes smiled again as Prince Ulrik turned. "None of us get to choose our relatives, and the command to honor our parents does not mean we must approve of everything they do; only that we should take their best qualities and copy them in ourselves." Johannes filled the fine glass on the table with wine and pushed it towards the prince, who drank and sat down.

"The quality was actually better at the Grange." Prince Ulrik sighed and leaned his head back against the wall, the sparkle returning to his eyes. "My father takes his duties as king very seriously, and has done his best to see that my brothers and I do the same. But my father isn't Denmark, and while I could never go to war against him, I also no longer feel any obligation to fight in his service."

"If you could follow your heart, what would you do?"

"Go to Schwerin. My father saw to it that I was made the Lutheran prince-bishop of Schwerin, and while I only held the office briefly, that is where I feel I belong. It's been conquered by Gustavus Adolphus, and while His Majesty naturally takes care of all his subjects, I am deeply concerned about the people of Schwerin. They have suffered much, and really need the stability of a permanent leadership."

"And if you went to the king of Sweden and gave parole, as he has requested, would he entrust you with the administration of Schwerin?"

"Probably. Chancellor Oxenstierna has hinted at such a possibility." Prince Ulrik sat for a while sipping his wine and looking towards the dark window. "The problem really comes down to the fact that the person I admire the most and want to resemble is at war with all the rest of my family. And so it seems I must either choose one or the other. Betray my family or betray myself."

"Or turn your back—at least partly—upon both. A separate peace, I believe the Americans call it." At

Johannes' words, Prince Ulrik turned abruptly towards him.

"What are you talking about? Changing my name and setting myself up as an incognito mercenary captain?"

"Not unless you feel that is the right thing for you to do." Johannes smiled. "Schwerin, I suspect, would be adequately neutral. I've been doing a lot of thinking lately about things like obligations and honor, faith and betrayal. I cannot claim to have found the absolute truth, but it seems to me that logic, reason, and the things you ought to do can only take you so far. Sooner or later you get to the point where all that can guide you is your heart and your faith." Johannes looked down on his hands, rubbing them to ease the stiffness caused by holding the reins all day. "I've felt caught between my church wanting me to do what I felt was wrong and the Americans wanting me to embrace ideas that I could only partly support. So, I'm partly turning my back upon both and refusing to work for either. I'll aid the Americans only as far as I feel comfortable with, while the church may hold my heart but not the use of my skills. I'll take my life into my own hands, work my painting as I choose, and try to right what I see as wrong."

"Are you advising me to do something similar?"

"Only mentioning the possibility of choosing a third option, when the two obvious ones leave you paralyzed and incapable of action. If Schwerin feels like the place you belong, for now at least, this might be God's way of telling you where he wants you to go. If your loyalty toward your father keeps you from giving King Gustavus Adolphus the oaths that would let you return there as prince-bishop?" Johannes shrugged. "It might still be the right place for you to be as a traveling Danish nobleman. And if your admiration for King Gustavus makes you reluctant to take action against him on your father's behalf? Then place your faith in God, and trust your heart to guide you."

Prince Ulrik's lips quirked. "Perhaps, as was done so expediently in Rudolstadt last spring, I should adopt the words of a writer of times between now and then. 'Trust not in princes. They are but mortal. Earth born they are and soon decay.' I'll think about this." He rose and went to stand by the window again. "My thanks for your time and counsel, Father Johannes."

* * *

Two weeks later Johannes once again looked up from a table filled with maps to see Don Francisco standing in the door to the school room.

"You left a message for me, Father Johannes?"

"Only to see you at your convenience, Don Francisco. There is no hurry."

"I wasn't doing anything that couldn't wait. I take it you are curious about Prince Ulrik?"

"If you have news, I am of course interested." Johannes smiled. "But I also expect the prince to find his own destiny without any help from me."

"I see. Well, the prince has reached Magdeburg without mishaps, and is presently negotiating with Chancellor Oxenstierna concerning Schwerin. Rumor has it that the prince and Prime Minister Stearns yelled at each other for a while. The prime minister felt that Prince Ulrik might be of more use as a diplomatic bridge—a negotiator—than as a bishop. But an agreement is expected." Don Francisco sat down at the table and looked inquiringly at Johannes. "But what did you want to see me about?"

"I've been considering your suggestion, Don Francisco. I'll be leaving for Cologne at the end of April, to accept a commission from the Hatzfeldt family."

"I see. Any particular reason for you to accept this particular commission?" Don Francisco looked down on the map of Kronach.

"Several reasons; some personal, some artistic, and some I'm sure would interest you."

Francisco looked at Johannes. "Any connection with your visits to the Grantville Hotel these past few weeks?"

"Yes. I've been "playing cloak and dagger" as the Americans call it with a Herr Otto Tweimal from Wuerzburg. A greasy little creep working for Bishop Franz von Hatzfeldt." Johannes smiled wryly. "He made me an offer I could not refuse."

"I've heard of him."

"Archbishop Ferdinand of Cologne's cousin, Maria Maximilane von Wartenburg, is to take up residence in the Hatzfeldt's newly acquired house in Cologne, along with most of the distaff part of the Hatzfeldt family. The property is several old houses—all of which are worn and drab—so officially I'm hired to paint murals for the ladies and advise on the restoration and decorations. Nice job and well paid. Unofficially, Hatzfeldt wants me to tell him about the Americans in return for a pardon—signed by Archbishop Ferdinand—for my behavior at Magdeburg. Herr Tweimal didn't actually mention negotiating with the Americans or King Gustavus, but also didn't hide that the bishop wants his bishopric back."

"Hmm! And Archbishop Ferdinand?"

"It was indicated that the archbishop was not to know that anything more than painting was going on."

"Bishop Hatzfeldt is an old patron of yours, Father Johannes. Do you believe he is planning a double deal behind the archbishop's back?"

Johannes shrugged. "Could be. When I met Franz von Hatzfeldt, he was a full member of the episcopal chapter administration of Bamberg as well as Wuerzburg. He had proved himself an excellent diplomat in negotiations with Tilly, and had slowly gained more and more influence until he was elected bishop of Wuerzburg just a few months before the Protestant conquest of that diocese. I'd say he is a most pragmatic man, ambitious, but very tolerant of other faiths. He definitely does care about his subjects—may actually be worrying about them—and takes his responsibilities very seriously. He'll be coming to Cologne from time to time, to see his family and to follow my progress with the house."

"And where are you planning to stay, Father Johannes?"

"I'm invited to live in the Hatzfeldt family's house there, but must of course leave it from time to time. I plan to buy materials from the merchant Beauville, but must also make arrangements with other traders and craftsmen."

"Herr Beauville is well known to me." Don Francisco smiled. "Before the collapse in the woad trade, my family dealt with him from time to time. This would be a good time to reestablish the connection. I expect this to make for a steady correspondence between Beauville and myself, and I would be most interested in any letters you'd care to send that way. But you mentioned a personal aspect to this offer?"

"Yes, but it's just that—personal."

Don Francisco didn't seem offended by the rudeness, just smiled a little and said softly, "I might be able to help, Father Johannes."

Johannes sat for a while playing with his pen, "Does the name Paul Moreau mean anything to you?"

"No, I'm afraid not."

"A fellow painter. His mother was a friend of my mother. He got into trouble with the church. Shortly before Magdeburg, I found out that not only had he been tortured by the Inquisition, but it was also absolutely certain that the charges were—or at least the evidence against him was—false. I didn't do anything at the time but this may offer me a chance to do something to help him. At least find out what happened."

"Father Johannes, you have been hiding from the Inquisition for almost two years, and now you plan to challenge them?"

"Hiding from the Inquisition or hiding from myself?"

Don Francisco shook his head. "Perhaps I should now ask you: do you fear God and do you fear the Devil?"

"I no longer have an answer, Don Francisco."

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I Got My Buck

by Barry C. Swift

Herman sat at the fire, obviously enjoying its heat. When Wili sat beside him, he looked over at his friend. "What's tomorrow going to be like, I wonder. I hear these Swedes have some help from that Grantville place."

Wili twisted the stick he was holding. "I once met a man who claimed he'd been in Grantville. Don't remember his name; called him 'New Guy' the way we did everyone 'til they survived a couple of fights. Horst brought him over; said they'd been together with Tilly at Breitenfeld; that he was 'solid.' Do you remember Horst? With him that was as much praise as you could hope for, so we made room at our fire. He seemed to know what he was doing; claimed a space for his blanket and went to work on his pike.

Don't remember him saying much 'til someone said that the Swedes we'd be facing the next day came from somewhere called Grantville. It was the first I ever heard of the cursed place."

Herman took a sip of beer, then dunked a piece of bread in his stew. "So, what did this 'New Guy' have to say about the place? I've heard all sorts of rumors."

Wili shrugged. "He didn't say anything, at first, not 'til it was certain that the rest of us knew nothing about 'em. Then he said, 'I've been there. They may be fighting for the Swede, but they're not Swedish; they're some kind of English or Scots, but the town is in Thuringia.'"

Lucas, who was doing his usual imitation of a log on the other side of the firewood, interrupted. "I don't believe those stories about them being wizards. And who cares if they're Scot dogs or Saxon pigs? Is this a mercenary unit? How good are they? Where have they fought?"

Wili shrugged again, even though it was impossible for Lucas to see it. "We figured that it was a good thing when he told us that, to his memory, they didn't hire mercenaries. After all, no town militia was going to stand up to a veteran unit like ours. But he disagreed. He claimed to have been the last survivor of a screw up when the squad he was in got separated from the rest of his company."

Wili sat up straighter and his voice took on a higher pitch. "'There I was, alone with nothing but my wits and my knife. Fortunately, I'm good enough with the knife that I don't need more wits than I have. I set off, trying to get back to a friendly district and doing pretty well after a few days. I thought I was being careful until I got swept up by a scouting party from this Grantville. I'd wandered into their territory without knowing anything about them. I was angry with myself for getting careless, but was told later that they were more alert than most towns. I don't have much English, and that's what they mostly speak there, so I didn't understand much of what I saw.'"

Herman looked over at him. "Wili, was this just before Horst's last battle? Did this guy talk like a priest, you know, someone who did a lot of reading?"

"Yeah, Herman. Why?"

"Because I remember him now. Horst tried to give him to us but Ludwig wouldn't have him. Horst said that this guy had stood beside him in the hedgehog at Breitenfeld after a Swedish cannon broke Horst's pike and killed the three men next to him. Ludwig didn't want anyone under him who sounded like an officer, though."

Wili gave his habitual shrug. "That's more than Horst ever said to me. But then, he didn't have to. If he said a man was solid, that was enough for me."

From behind the woodpile, Lucas could be clearly heard grumbling. "So what? Who cares about this ponce? How good are these guys we're going to kill tomorrow?"

Herman threw a bone from his stew over the woodpile. It missed Lucas, but the dog that jumped over the barrier, chasing it, didn't.

Wili snorted. "Shut up, Lucas. I'm getting to it." Once again his voice took on a higher pitch as he recited a story that had dominated his thoughts for much of this campaign. "'The place is strange in ways I can't describe. I got lucky when the scouts brought me in. I must have given the right answers because their questioning didn't even start to get nasty. They had some strange notions though: they laundered my clothes for me and separated me from my lice and fleas. Then, since I had some coin, they sent me to this

miser's house. At least, I think he must have been a miser because he was certainly rich enough not to need to rent rooms. On the other hand, the meal he served was better than I would expect from a miser, so what do I know?'"

Wili knew he was a good mimic and once again sent a quick prayer of thanks for the teachers he had hated as a child. He had realized years ago that remembering things by rote was a potentially lifesaving skill. Potentially, nothing he thought.*It did save my hide when I was chosen for the 'dangerous' job of taking a message from that suicidal idiot to headquarters. Well, maybe not suicidal, it was his men who died, not him.*

He roused himself from his musing and resumed his story, "Anyway, the new guy claimed he didn't have much English and that the Grantviller had less German but there was this other boarder who was able to help a bit and they wanted to talk about the place. Which was fortunate for us, eh, Lucas?"

"Not that I can tell," came back from the other side of the woodpile. "Although, it's boring enough to be a good bedtime story."

Wili took the posture and tone that his teachers had beat into him as appropriate for recitation. '"There was an interesting display on the wall: two fancy hats, a couple of swords, and several pistols, all hung on nails. I said that I'd only seen arrays of weapons like that in noble's houses. He got out a very small musket that he called a 'twenty-two' and said that it was the only weapon he owned; those were 'trophies.' When I didn't understand, he told me a story about how he had been given this 'twenty-two' when he was a child. It seems that the city guards ran an athletic program for the children of the town where he grew up, including teaching them to shoot. What's more, he claimed that his older sister had learned to shoot when she was ten years old, just as he had, and that this had been her musket. I thought he was joking; this 'twenty-two' he was holding must have been some kind of toy musket that they used for training these girls. I tell you, the bore was no bigger than a writing quill and it had neither matchlock nor that fancy French flintlock. But he insisted that it was a real weapon.'"

Wili stopped and threw the stick he'd been fiddling with in the direction of Lucas' bedroll. "This the part you care about, so quit pretending to snore, you ignorant sot. That bit about the 'twenty-two' is one of the best descriptions I've heard about these quick-firing muskets that the Swedes are supposed to have. That Grantviller didn't consider the swords or pistols 'real weapons,' but the little musket with a bore your ramrod wouldn't fit down, was."

The stick came back over the woodpile. "So what? It isn't the weapon, but the man who wields it," Lucas said. "And that was a weapon for a girl, anyway."

"You are as stupid as you are doomed, Lucas. But I will continue this story in the hope that Herman, here, will benefit." Again, Wili resumed his recitation. '"The Grantville nobles had an interesting scheme. Each year they sold their commoners the right to try to shoot a deer. City men and peasants both could pay a fee and be allowed to tromp through the woods until a week was up or they shot a deer. It was a point of pride for them to 'get their buck.' My host would go out with friends who would loan him a full sized musket for the hunt. He went every year but never succeeded. I thought of this city man thrashing through the brush and could think of many reasons why he'd never see a deer; it wouldn't matter how good a shot he was.'

'"The reason I got caught was that they had more patrols out than usual because there had been a raid recently. They claimed a couple thousand Croats had come through while their militia were off destroying a couple of Spanish tercios outside a neighboring town. That last was true. I met some of the men captured from the Spanish before I left the town. But it's not the whole truth. You remember the thrashing

those Swabians got near Suhl? They were routed by a third part of the Grantville militia while the rest were dealing with the Spaniards.'"

Once again, Herman interrupted. "Too bad, since Lucas is asleep, he missed out on how easy it will be for him to kill these men tomorrow."

Wili forged on with his story. Having started a recitation, it always felt wrong not to finish it. "'Anyway, that left the town's women and burghers to handle the Croats. I didn't believe that there had been any two thousand Croats. After all, the town was still standing, but I wasn't going to call my host a liar. Good thing too, because the next day my translator friend showed me a cemetery with a couple hundred Croat graves.'

"'So I'm glad I kept silent while that burgher sat there, stroking his tiny toy musket, looking at those hats and weapons, saying, "Ja, those Croats came and I finally got my buck."'

Resuming his usual growl, Wili asked, "Okay, Lucas, does that satisfy you? The Granviller's women are good enough to handle Croats. Do you think their men might give you a morning to remember?

"Anyway, the next morning, the New Guy's pike was there, but that craven whoreson and his gear were gone. I was going to talk to Horst about it, but didn't get a chance before the battle. And he didn't survive the day, so that was that. Since none of us who survived got within seventy-five yards of the Grantville Swedes, I guess an extra pike really wouldn't have mattered. From what you say, Herman, about how he handled himself at Breitenfeld, maybe the New Guy wasn't so craven. Maybe he was just smarter than he looked."

Wili noticed that neither of the other men said anything. Maybe they thought so, too.

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