The Fox 21

Chapter 21: The Gathering

Joseph followed Armand into his family's courtyard and up the steps. He noticed that Armand's house was a typical Rococo-style building. The walls were adorned with various ornate carvings, decorated with gold and various other colors of paint. Such a building must have once been filled with extravagant grandeur, but now, the golden and colorful paint had weathered and peeled, leaving the entire facade mottled and faded.

Armand noticed Joseph observing the wall and said, "This house has some history to it. It's long overdue for some restoration, but my father and I are both hopeless dandies, too preoccupied with other matters. So, the house... how should I put it?"

Armand furrowed his brow.

"I think it's not so bad," Joseph replied earnestly in a contemplative tone. "It has a unique beauty. It's like an unfurled scroll of time, filled with the weight of history. When you look at it, you see the capriciousness of fate, the unpredictability of life."

"Joseph, your words... I'll take that as a genuine compliment," Armand said. "You know, one of my greatest qualities is appreciating such things. Also..."

Armand paused, looking up and examining the mottled wall in detail. "Joseph, one thing you said is right. This is capriciousness, this is fate. Underneath the splendor, there's solitude and despair, and that's the essence of Rococo!"

"O Fortuna, velut Luna statu variabilis, semper crescis aut decrescis; vita detestabilis nunc obdurat et tunc curat ludo mentis aciem, egestatem, potestatem dissolvit ut glaciem," Joseph softly recited in Latin. ("This is a passage from the Latin work 'Carmina Burana' known as 'O Fortuna,' meaning: O Fortune, like the moon, ever-changing, you wax and wane; detestable life now oppresses and then soothes as game of sharp mind, poverty, and power melts away like ice.")

"Goodness! You immediately composed a poem in Latin!" Armand playfully scolded. "You're already outperforming me in the natural sciences, and now... you, my friend, are making it impossible for anyone to live!"

"This isn't mine," Joseph shook his head. "I don't know who wrote it, maybe some nameless poet from the eighth century or even earlier. Well, I've told you, my godfather is a bishop, and I found this in one of his church's scrolls."

"The terrifying Middle Ages must have buried many talented poets," Armand said. "Anyway, let's not stand here chatting on the steps. Let's go inside."

They entered the house, and Joseph looked around the living room. A crystal chandelier with over a dozen candles illuminated the hall, even as night had fallen. On either side of the hall were several chairs, with a dance floor in the center. The marble floor was dimmed with age, losing its former luster.

The sofas in the hall were empty, and Armand said to Joseph, "We haven't invited too many people this time, just a few close friends. They are all in the small living room."

Following Armand, they turned to the right and entered the small living room. As Armand had said, everyone was in the small living room.

Armand introduced Joseph to the people in the room, starting with his father, Charles de La Vauguyon.

"Thank you for your hospitality," Joseph said, bowing.

"Come on, Armand, why are you making it so formal?" Charles de La Vauguyon shook his head. "This is just a casual family gathering."

Then he turned and pointed to a high-backed chair, saying, "Mr. Bonaparte, please have a seat here."

"Thank you," Joseph replied. "I'm a friend of Armand, so you can just call me Joseph."

Armand continued to introduce Joseph to other family members.

"This is my mother, Madame de La Vauguyon."

"I'm pleased to meet you, madam," Joseph nodded in greeting.

"I'm happy to see you young people," Madame de La Vauguyon responded. "It reminds me of the good old days when I was young."

"Mom, you're young too," Armand said.

"This is my cousin, Samuel de Fermat. He's excellent at fencing and shooting, and he served with Marquis de Lafayette in North America. He's a great guy." Armand introduced another short man sitting there. Joseph noticed a long scar beneath his right ear, extending down to his lip. Perhaps to conceal the scar, he intentionally wore a big mustache similar to a character from later comics. It made it hard to determine his age.

"Hello," Samuel stood up and nodded.

"Pleased to meet you," Joseph replied.

Armand then introduced several other people, most of whom were relatives. Finally, Armand led Joseph to a girl in a pale yellow dress.

"This is our most precious pearl, my sister Fanny," Armand said.

"Pleased to meet you," Joseph said quickly.

"Nice to meet you too," the girl lowered her head slightly, curtsied with her hands holding her skirt, and then raised her head, opening her big green eyes to quickly glance at Joseph. She then lowered her eyelids and said, "I've heard a lot about you from my brother. I heard your paper received a major award from the Academy of Sciences. Not only that, my uncle said you've made significant contributions in mathematics. And you've been recommended for a teaching position at the Paris Military School. You're not even twenty yet, and you've received such a recommendation. That's quite remarkable!"

"Miss, it's not as difficult as you imagine," Joseph replied with a smile. "I've just been lucky."

"My brother said, luck is only for those who are prepared," Fanny smiled softly and whispered.

"Well, everyone, please take a seat. Let's not stand and chat," Charles de La Vauguyon said.

Joseph sat in a chair next to Armand. A servant brought a cup of tea and placed it on the small table beside Joseph.

They continued their conversation.

"What were you all discussing before I arrived?" Joseph asked.

"We were discussing the recent performance of 'The Marriage of Figaro,'" Armand replied.

"The Marriage of Figaro" was a work by Beaumarchais. However, for those in the future, they might be more familiar with the opera version adapted by Mozart. But the opera version of "The Marriage of Figaro" wasn't completed until 1786. The recent performance was not the opera most people today know; it was a play adaptation of "The Marriage of Figaro."

"Mr. Beaumarchais' satire in this play is sharp and highly ironic. It's quite audacious that he had the courage to do it," Armand said.

"Beaumarchais is one thing, but the playwrights of the comedy troupe have even more guts. They altered the plot and even made fun of Her Majesty, the Queen. That's real audacity!" Charles de La Vauguyon said.

"Isn't it?" Fanny smiled, her voice low. "They even made Count Almaviva say such things. That's bold! But aren't you worried about the Queen? She might not take it as a mockery. Maybe she'll think Count Almaviva's words are praise!"

Armand chuckled with a disdainful look. "Mary Antoinette, the Queen, is from the Habsburg family and has received a good education. She can definitely grasp simple metaphors. So the changes made by the comedy troupe do require courage. But truth be told, the risks they're taking aren't as great as they might imagine. Because even if they see these satires, the King and Queen probably don't care."

"Someone publicly accuses them, how could they not care?" Samuel interjected.

"Ah, well. Let me give you an analogy," Joseph began. "You fought in North America. I heard that some Native Americans and the British fought against you. It's said that those Native Americans used their sorcery to curse you. So, Mr. Fermat, do you care about their curses?"

"Of course not, because I know their superstitions are useless. You see, there's no sorcery that a bullet can't dispel," Samuel replied.

"If one bullet can't, then we'll use another," Joseph smiled.

"You're right, Mr. Bonaparte," Samuel agreed, laughing. "But in general, dealing with Native Americans, one bullet is usually enough."

"In the eyes of the King and Queen, such accusations are no different from the curses of the Native Americans," Joseph concluded.

Chapter 22: Inspiration

"Arrogance! Such a cursed arrogance," Joseph exclaimed. It was evident that Armand understood Joseph's words.

"Perhaps it's not just arrogance," Joseph pondered, "but rather a disconnectthe divide between the upper and lower classes. The French people are filled with anger towards the upper class, but the

upper class may not even be aware of it, or they simply don't feel it. The king and queen are surrounded by sycophantic courtiers, living in a world far removed from the lower classes, and any other voices cannot reach their ears. So, they continue as they wish. This is dangerous because it could lead to explosive consequences. If the accumulated anger is not channeled properly, once it erupts, it will inevitably have destructive consequences, just like a flood breaking a dam. Art should play two roles during this time: to warn the upper class, making them aware of the danger, as art is one of the few ways to get their attention. The other role is to pacify the lower class. For example, Monsieur Beaumarchais' 'The Marriage of Figaro' attempted to fulfill these tasks. His satire of Count Almaviva serves as a warning to the upper class, while letting Figaro find happiness in the play can be seen as a form of consolation to the lower class. However, it seems that his warning was insufficient, and its pacifying effect is still uncertain. So, the members of the comedy troupe have increased the satirical content further, but so far, after several months of performances, nothing significant has happened. It seems to have had little effect."

Everyone nodded in agreement. Only Fanny seemed not to understand and asked, "So, Monsieur Bonaparte, if something does happen with the comedy troupe, does it mean it has been effective?"

"No matter what happens, even if they were all arrested en masse and thrown into the Bastille or executed one by one, it would at least show that the upper class cares about these matters. However, after this long, with no sign of any action, it can only mean that those above simply don't care," Joseph replied.

"In that case, 'The Marriage of Figaro' may not have been sharp enough," Samuel remarked.

"Joseph, maybe we should write a more provocative script. Let me think about what we should write," Armand contemplated.

"Perhaps we should write the story of Charles I? The English king who was beheaded," Joseph suggested. He knew that if history didn't change significantly, the French king, Louis XVI, might meet a similar fate and be executed for treason.

"That would be too explicit," Samuel shook his head, "If we write that, you and Armand might end up in the Bastille, or worse. Not many theater troupes would dare to perform such a sharp piece. I think it's better to write about the American Revolution. That's a rebellion against tyranny."

"That sounds like a good idea," Armand agreed, "Samuel, you have personal experience, which can help us."

"But North America is so far away. And considering France's role in the American Revolution, if we write about it, the king might think we're just praising him," Joseph said.

"How is that possible? The king is not a fool," Samuel insisted.

"It's not impossible. The king is not, but some of those around him can mislead and confuse him. Even what the king sees as the script and the performance might not be accurate," Joseph explained. Such means to manipulate those in power were too simple in his view.

"God, how did you come up with this idea, Joseph? You have a chance to be a courtier," Armand teased him.

"You can't insult me like that. You should know someone like me could never be just a courtier. At the very least, I'd be a grand courtier," Joseph retorted, and everyone burst into laughter, even Fanny, who had been initially concerned due to Joseph's stern tone.

Armand, still chuckling, said, "Alright, enough laughter. Seriously, do you have any other suggestions for my new play?"

"What if we write about Spartacus?" Fanny suddenly spoke up. "Spartacus represents the lower class rebellion, and that can't be changed. Moreover, there are limited historical records about him, allowing for creative freedom."

Since Fanny had spoken, Armand immediately voiced his support. "I think that's a good idea. I've already thought of a series of exciting scenes. For instance, how Spartacus fought a tiger in the arena, or..."

"And we can show how Spartacus, despite earning his freedom through victory in the arena, refuses to be satisfied and dedicates himself to the struggle for the liberation of all slaves, believing that every person should be born free, and that it's every good person's duty to overthrow the system that oppresses and exploits others," Joseph added with a playful smile, just enjoying the lively discussion.

"Yes, and through Spartacus' voice, we can convey the words, 'All men are born equal, have the right to liberty, happiness, and the sacred, unalienable right to resist oppression,'" Samuel chimed in.

"Are you planning to have Spartacus recite the American Declaration of Independence from a few thousand years in the past? That seems a bit much," Fanny interjected.

"Then what's the alternative? Have him recite the Gospel?" Samuel retorted. "Although Spartacus lived thousands of years ago, our purpose in writing about him is to make him speak the words we need in the modern context."

"Flix is right," Joseph agreed. "Perhaps we can be even more daring. After the Battle of Appia, Crassus crucified over six thousand captured slaves. We could stage that scene, with slaves crucified like Christ on the cross. We could even prepare a choir to sing an anthem of resistance during this moment."

"Joseph, I remember your godfather is a bishop," Armand exclaimed in amazement.

"The bishop also believes that the Church has deviated from the spirit of Christ in many places today," Joseph replied calmly.

"I think Monsieur Bonaparte's idea is creative. If Voltaire were alive, he would surely love this concept. Well, Monsieur Bonaparte, are you skilled in music?" Fanny asked with a gleam in her eyes.

Joseph smiled and replied, "I'm nearly illiterate in music."

"I see," Fanny said with a hint of disappointment. "We're all a bunch of music illiterates here. So, who will compose this anthem of the resistance?"

"Fanny, that's not difficult. We just need to write the lyrics and then find a musician to compose the music. Of course, good lyrics and good music aren't easy to come by. Right now, I'm filled with the desire to create," Armand explained.

"Brother, your creative desire usually doesn't last even a week," Fanny teased with a smile.

"You're right, Fanny. If it weren't for this flaw of mine, I would have become the new Sophocles. But I'll do my best to control myself. Joseph, you'll help, won't you?" Armand said.

"If I have the time, I'll do my best," Joseph replied. "But at least for now, I'm afraid I won't be of much help. You know, I'm quite busy recently."

"Monsieur Bonaparte, what have you been busy with lately?" Samuel inquired.

"Joseph has an important experiment to conduct lately. It's related to measuring the speed of light. My uncle praised the ingenious design of this experiment. Additionally, he's preparing to become a mathematics teacher at the Paris Military Academy. Joseph, your younger brother is studying at the same academy, right? Does he know you're going to be his teacher? How did he react?" Armand asked.

"I haven't told him yet," Joseph replied. "I want to see his reaction when he suddenly discovers that his math teacher is me."

"I can imagine that it will be quite interesting," Fanny commented with a smile.

And so, the conversation turned to how to play tricks on Joseph's brother. Fanny offered some suggestions, many of which she claimed were tricks Joseph had used on her.

Everyone got into the spirit of things and began providing their ideas on how to tease Joseph's brother. If it hadn't been for the butler's reminder that dinner was ready, they might have continued brainstorming devious plans.

"All right, let's head to the dining room," Viscount Lavoisier stood up. "I managed to get a few bottles of excellent wine..."

Armand's household had different dining customs compared to Joseph's. There were no strict formalities, and even during the meal, everyone continued to chat and laugh. The conversation meandered from Lavoisier's red wine to various topics, such as Ceylon tea and Mediterranean tuna, and somehow ended up discussing Nile crocodiles and hippos. French people, it seemed, had a lot in common with Chinese when it came to their love for discussing food: Can we eat it? Is it tasty? How should it be prepared? In this aspect, they were quite alike.

Chapter 23: The Experiment

A few days later, on a sunny morning, Joseph once again donned his formal attire, while Napoleon wore his military uniform. They boarded a light two-wheeled carriage bound for the Bertonne Castle on the outskirts of Paris, where they were set to participate in an experiment to measure the speed of light.

The Bertonne Castle was an estate belonging to the House of Orlans, perched atop a small hill. It was originally a military fortress built in the 12th century but had lost its military significance over time. Its defensive modifications had made it ill-suited for habitation, and it now lay in a semi-abandoned state. However, for conducting experiments, the location was ideal. It was far from the city, with few nearby residents, and virtually no light pollution. From the high castle tower, they could clearly observe the reflected light from mirrors set about four or five miles away.

Given the remoteness of the location, and the absence of public transport, Joseph had rented a light two-wheeled carriage to reach the castle.

The journey in the light carriage took most of the morning, and it was around three in the afternoon when they arrived near Bertonne Castle. There was an estate of the House of Orlans below the castle, where the participants of the experiment gathered. The carriage came to a halt at the estate's gate, and a servant approached to inquire about their identities. Joseph identified himself, and shortly after, the ornate iron gates of the estate swung open. They entered the estate, and the carriage came to a stop in front of a grand, Baroque-style mansion. A wig-wearing steward guided them inside.

The steward led them through a grand hall and into a small garden at the rear of the mansion. In the garden, there was a modest glass greenhouse. While such structures might not be extraordinary in the future, during this era, it was a luxury beyond the reach of most. Several people were inside the greenhouse, sipping tea and admiring the blooming roses. Joseph noticed Ampre, Laplace, Biot, and Monge among them. However, the host, Duke Charles, was conspicuously absent.

"Ah, Joseph, come over here," Biot waved when he spotted Joseph. He approached and greeted each of them one by one. He expressed his gratitude to Monge and Laplace for their recommendation. Napoleon, whom Joseph introduced as his brother, was also acknowledged.

Joseph inquired about the absence of the Duke, and Biot explained that he had been summoned by the King. The Duke's butler, Mr. Will, was left to assist them with the preparations, and everything was in order, awaiting the night's experiment.

In the past few days, the Academy of Sciences had worked in collaboration with the House of Orlans to precisely measure the straight-line distance from the Bertonne Castle's watchtower to the mountaintops of two nearby, unnamed hills. To ensure a clear line of sight, they had even cleared the trees from those mountaintops - they were, after all, part of the Orleans' estate.

Now, everything was ready, and they only awaited nightfall. They engaged in scientific discussions as they had nothing else to do. Laplace and Monge delved into the gravitational potential function for any mass point outside a celestial body. Napoleon, though interested, listened more than he participated, in contrast to Joseph's active engagement.

Soon, the Orleans family's staff invited everyone for a meal. It was a working dinner, modest by Orleans' standards, but Joseph and Napoleon experienced several culinary novelties, including truffle slices sandwiched in goose liver paste and various other delicacies.

After dinner, they returned to their carriages and made their way to the nearby castle. The carriages navigated winding roads until they arrived below the castle.

Exiting the carriages, they found the sun setting in the western sky, casting a warm, red glow. Servants lit torches, and with the Academy members, they entered the ancient castle. These fortresses, built for defense, often had thick stone walls and few, typically small, interior windows. This resulted in poor ventilation and lighting, even in broad daylight, necessitating artificial lighting. Many nobles had abandoned these castles, and they were in a state of disrepair, often serving as settings for ghost stories. The Bertonne Castle had its own share of such legends.

Joseph, with Napoleon, followed a servant carrying a torch up a spiraling stone staircase. The servant warned them about the slippery moss-covered steps, but they reached the castle's topmost

watchtower without incident. It was a small platform, about twenty meters in length. One end had a brazier with a fire fueled by whale oil-soaked wood. The fire, when lit, emitted a remarkably bright flame, visible from a considerable distance even in the dark. At the other end of the platform, there was a set of revolving eight-sided mirrors.

A telescope was positioned on the platform, allowing them to view the mirrored setup on the distant hill. Joseph asked if the mirrors were properly adjusted, and they confirmed that the reflections were precisely aligned. Their experiment depended on a beam of light sent from the rotating mirrors on one hill and then reflected back.

As the darkness deepened, Laplace declared, "It's time to start."

One of the servants ignited the brazier, and a rocket was launched from the distant hill. The rocket served as a signal to inform them that they could clearly see the firelight from their position.

With their attention now focused on the other side of the revolving mirrors, they awaited the return of the reflected light. However, at first, there was nothing but darkness. The mirrors rotated faster, but still, there was no sign of the firelight.

"Faster, even faster," Joseph urged, watching the spinning mirrors.

The speed increased, and finally, the flickering firelight began to appear on the side they were watching. "Hold it steady! Hold the rotation speed! Excellent! Quickly, record the speed!" Monge shouted.

An assistant quickly recorded the rotation speed. Once the data was available, Joseph, Laplace, and Monge gathered around to perform calculations. Laplace was the first to arrive at an answer, followed by Monge. Joseph took a bit longer, and when he finished, he found himself subjected to good-natured ribbing.

Napoleon also couldn't resist a teasing smile, and Joseph knew what he was thinking: "My dear, slow brother, you've become the subject of some gentle mockery."

Joseph defended himself, "These calculations are far more complex than my previous life, where we could solve them with a single keystroke. My speed is already quite impressive, and if anyone else were to attempt this, they might not even complete half as much as I did."

The room burst into laughter, and Joseph continued, "My calculations might not be fast, but they're thorough, and I'm meticulous. I can't help it."

In the midst of the laughter, Joseph completed his calculations. The three of them cross-checked their results and found them to be nearly identical. Joseph quietly converted the figure into kilometers, and they realized that their measured speed of light was remarkably close to the modern-day value.

"How astonishingly fast!" Laplace murmured. "If light is indeed a wave, one wonders about the unique properties of this 'aether.' It's truly beyond imagination. However, if light is composed of particles, how would one explain phenomena like the double-slit interference and Poisson's bright spot?"

Napoleon, leaning forward with a glint of curiosity in his eyes, chimed in, "What if we consider a more radical idea? What if the medium through which light propagates isn't some conventional substance but the fabric of space itself?"

"Space itself? Light as a wave in the fabric of space?" Ampre responded. "Ah, Napoleon, you possess a philosophical imagination. But as a scientific hypothesis, it lacks substantial evidence. Science demands evidence, just like your brother's hypothesis it's supported by a mathematical model. However, this notion, intriguing as it is, has no practical method for study since we lack any tools to probe the fabric of space."

Joseph, quite startled by Napoleon's statement, knew that light wasn't a wave in the fabric of space. While space itself could exhibit wave-like properties, these waves weren't light but gravitational waves.

"He's quite imaginative. With proper nurturing, can we cultivate him into a physics emperor?" Joseph mused, while Napoleon's eyes sparkled with curiosity and a touch of mischief.

Chapter 24: The New Teacher

After the recent experiment, Joseph's days returned to being both fulfilling and boring. His daily routine now revolved around studying the mathematics of this era. This was twofold: to avoid accidentally introducing futuristic concepts into the curriculum due to insufficient knowledge of the era's math and to prepare for future teaching.

Amid this busy schedule, winter gradually passed. The past winter had been cold and dry, with not a single snowfall, which was not good news for France. It hinted at potential agricultural problems in the coming year. Across the English Channel, Britain faced a similar issue, but the loss of North America and India during the Seven Years' War left France unable to rely on colonial resources, making the risk of crop failure much more significant for them than for the British.

However, Joseph didn't pay much attention to this. Even if there were soaring food prices in the future, the teachers at the Paris Military Academy wouldn't go hungry. Their family still owned some land in Corsica, where droughts were rare. They could probably produce something there and, if they managed to transport it to Paris, even make a profit, despite the substantial taxes involved. Paying these taxes honestly would be profitable enough.

"Unless we find a way to smuggle food with warships in the future, making money won't be that easy. But for now, I can stockpile a bit early. I remember that old Gellon Dumartrat in Balzac's novels made a fortune by hoarding." Joseph thought.

However, this was just a thought because Joseph had very little money on hand. Some of it had to be sent back home, and what remained barely covered his expenses. Even if he wanted to speculate, he didn't have the money to play.

"And speculation is risky. Even if you have a rough understanding of history, the specific operations are still risky. My risk tolerance is a bit low. So, for now, I can't do much except wait for my salary." This was the sorrow of the poor. For the wealthy, a failed speculation was just a learning experience. But for the poor, the consequences of a failed speculation might lead to drastic measures, such as trying to escape to America or India. Or worse, they could be caught by creditors and forced into various old and illegal businesses to repay debts.

In economic activities, the risks for the poor were always greater than those for the rich because they had no capital, just their lives. Joseph, overall, was not someone who wanted to take unnecessary risks.

"Anyway, there are still a few years until the French Revolution. I can accumulate slowly," Joseph thought.

Once winter had passed, Joseph had only one more semester of high school. In fact, in this last semester, there were hardly any classes left. Those planning to continue their education were already in the university preparatory program at the School of Emperor Louis. Those not planning to continue their education had already started looking for jobs in Paris. Joseph, on the other hand, neither intended to attend university nor seek employment, so he continued to go to school every day, spending his time in the library reading.

But he wouldn't be staying much longer. He had already passed his graduation exams during the winter. So, shortly after, Joseph received his graduation certificate from the School of Emperor Louis, and he could now report to the Paris Military Academy.

"Mr. Bonaparte, even though I've heard from Mr. Montgolfier and Mr. Laplace that you are quite young, I never expected you to be this young. But with their joint recommendation, your abilities should be beyond doubt, especially Mr. Montgolfier, who believes your future achievements will surpass his. You may not be aware, but we are in great need of a teacher capable of instructing geometric art here," said Count Dupont, the school principal, when Joseph reported for duty.

"Thank you for your trust," Joseph nodded.

"Young man, strictly speaking, I am not trusting you. I just have a lot of trust in Mr. Montgolfier. Although he can be stubborn at times, he is undoubtedly a very reliable person. Initially, I wanted to transfer him from the Royal School of Military Engineering to our academy. But he's quite stubborn... and he's not very fond of some of the students here. Perhaps I should remind you; our school is quite different from the Royal School of Military Engineering. Many of our students come from noble backgrounds, and many of them attend merely due to family tradition. Mr. Bonaparte, do you understand what I mean?"

Joseph clearly understood the meaning behind Count Dupont's words. It was well known that the Paris Military Academy had the best faculty but the worst students. Many of these noble students attended just for the prestige, intending to enter the army as officers and rapidly rise through the ranks, either becoming generals or leaving the military for other positions. The military knowledge taught at the academy was of little importance to them. For these students, success was achieving their life goals, not mastering military science. It was clear to Joseph that this was one of the reasons Mr. Montgolfier had not transferred from the Royal School of Military Engineering to the Paris Military Academy.

"I understand," Joseph replied.

"Well, that's good," Count Dupont nodded, but then added, "Mr. Bonaparte, even for those noble students, we must not be too indulgent. We need to make an effort to ensure they learn something, or else it won't reflect well on the school's reputation."

Joseph also understood the implication behind Count Dupont's statement. It meant that, in any case, they had to make sure the noble students learned something. They couldn't graduate as complete ignoramuses. It would tarnish the school's reputation.

"I will focus on teaching the conceptual aspects," Joseph replied.

Focusing on conceptual teaching meant reducing quantitative analysis in mathematics to a minimum, so students only needed to grasp the concept. This approach would suffice for most of these students since they likely wouldn't go to the battlefield. Even if they did, the quantitative analysis would be handled by non-noble staff officers.

"Furthermore, the French Revolution is not far off, and most of these nobles won't escape the guillotine. The final imperial wars won't rely on them either. Right now, I just need to earn money steadily. If I can make use of these people destined to hang from lampposts, I can earn some extra money," Joseph thought.

"Very well," pleased with Joseph's understanding, Count Dupont continued, "We have prepared a dormitory and an office for you. You can also receive an advance payment for a month's salary, and you'll receive two sets of uniforms annually. You can arrange these with Marcel in our logistics department."

"Thank you for your assistance," Joseph responded.

After leaving the principal's office, Joseph visited Mr. Marcel, the logistics officer, spending an afternoon settling in. Then he spent an evening preparing the course materials, ready to start teaching his students in a few days.

...

Napoleon sat at the front, his short stature preventing him from being visible from the back. The new semester's timetable included a new subject: "Military Geometry." Napoleon knew that this course contained classified information. All students taking this course had to take an oath to maintain secrecy, and the school made it clear that leaking this knowledge would lead to charges of treason in a military court.

Many of his noble classmates didn't take this requirement seriously, but it piqued Napoleon's interest. He had always been very interested in geometry, excelling in it. Moreover, geometry was crucial for artillery, a branch he held in high regard. Thus, he had arrived early at the classroom. It wasn't until class was about to begin that his fellow students started to trickle in, gradually taking their seats. The classroom came alive with chatter, resembling a bustling market.

As the class bell rang, everyone hushed. This was a new subject, and they weren't sure what to expect from their new teacher.

The moment the bell ended, a young man in a brand-new military uniform strode onto the platform. He placed his lecture notes on the lectern and surveyed the students. Then he began, "I am your teacher for Military Geometry, Joseph..."

Chapter 25: Moments of Tranquility

"Hey, Napoleon, aren't you supposed to be good at math? How come you couldn't solve a single problem today?" On the way to the library, a classmate caught up with Napoleon from behind, playfully shouting at him.

Napoleon furrowed his brow but remained silent. His companion beside him, however, responded with irritation, "Bonnav, those problems were really tough. I dare say, even if Mr. Joseph explained them at the end, you still wouldn't have been able to do them. Because you can't even understand the questions!"

"Well, what's your point? I've never bragged about being good at math," Bonnav chuckled, "We have military geometry class in a couple of days; let's see if our math genius can solve a single problem then!"

As Bonnav laughed, he took a different path, as students like him, aspiring nobles, wouldn't usually spend their time in the library studying after classes.

"Napoleon, you don't have to pay them any mind. They are just incompetent and need..." Napoleon's companion gazed at Bonnav walking away in the distance and continued.

"Andersen, I don't really care about them. It's you, you got too worked up," Napoleon replied, "If a dog is barking at you, what do you do? You either ignore it or pick up a big stick and beat it soundly. Right? But what did you do just now? You were actually trying to outshout a dog, which is..."

"You make a valid point," Andersen scratched his head, "If I had a big stick in my hand, I would have given it a whack without a second thought. But the problem is, I don't have a big enough stick. You see, even though he's a vicious dog, he's a titled dog, and I... the stick in his hand is bigger than mine. If I charge at him, I'd probably lose to that vicious dog, and that would be humiliating. So, I chose to exchange harsh words."

"My brother once said," Napoleon mused and furrowed his brow slightly, "Don't argue with a fool because they will drag you down to their level and beat you with their experience in foolishness. Even though that guy is a jerk, he had a point."

Napoleon couldn't help grinding his teeth.

Indeed, Joseph was a real jerk. During class, he used the pretext of assessing everyone's current math level to present a series of questions. Then, he "randomly called on students" to answer them. The initial questions were quite straightforward, and even the dullest students didn't make mistakes. But at the end, Joseph introduced a tricky problem. It wasn't that hard, but it contained a subtle trap within its conditions and some misleading language. When Napoleon was called up, he overthought the problem under the pressure and failed to solve it within the given time. Joseph then politely sent him back to his seat and promptly demonstrated the correct solution in a straightforward manner, making even the dull students feel as if they could have solved it themselves ("I understand it as soon as I hear it, I can do it as soon as I see it, but I get it wrong as soon as I try it" is a common feeling for mediocre students when faced with many math problems).

Just before the end of the class, Joseph presented another problem, claiming it was a test of their grasp of the day's lesson. He used the excuse that Napoleon was the "only one who couldn't solve the previous problem" to call him to the front again. This time, the problem was genuinely challenging, and Napoleon failed to solve it by the time the class ended (and with just two or three minutes remaining, how could he possibly have solved it?).

"This guy is a real jerk! I have to study hard so that he can't be so smug anymore!" Napoleon whispered to himself.

As the two continued their conversation, they entered the library.

While it was still daylight, they borrowed two books from the library and headed to the reading room. To ensure the safety of the books, the library strictly prohibited candles. So, once darkness fell, the library became inaccessible (in an era before electric lighting, most libraries around the

world operated this way). However, the reading room at the Paris Military Academy provided free lighting students with ID cards could request a white wax candle mounted on an iron candlestick, making it usable at night.

Napoleon and Andersen took candles and proceeded to the reading room, intending to find a well-lit spot near a window to read. After all, a single candle's duration was quite limited.

At that moment, a person sitting at a table near a large French window suddenly raised their head and called out to them, "Napoleon, come over here!"

Napoleon looked in the direction and saw Joseph smiling at him.

"Joseph, hello," Andersen greeted politely with a bow

"Andersen, did you understand everything I taught today?" Joseph asked with a smile.

"At first, I thought I did, but when I saw the last problem, I felt completely lost. Even now, I have no clue about that one," Andersen replied.

"Mastering the basic knowledge and being able to apply it practically are two different things," Joseph nodded. He then turned to Napoleon and asked, "Napoleon, have you figured out how to solve that problem now?"

"I know how to solve it now," Napoleon replied, somewhat defiantly. "In fact, with a bit more time back then, I could have solved it."

"The speed at which you solve problems is also an indicator of your grasp of the subject," Joseph remarked.

"So, for the same problem, your speed is only two-thirds of Mr. Monge's?" Napoleon couldn't help but comment.

This response caught Joseph off guard. He frowned and said, "In terms of calculations, Mr. Monge is indeed far superior to me. However, in my opinion, my calculation speed is sufficient for my research. But, Napoleon, if you want to graduate early, your problem-solving skills are not up to par yet."

"Napoleon, do you want to graduate early?" Andersen asked in surprise.

"Yes, my family is going through financial difficulties, and they need me to start earning money as soon as possible," Napoleon explained. "I also want to enter the military sooner rather than spend my days with the Parisian nobility."

"I agree with your perspective, but I won't go easy on you in my subject. If you truly want to graduate early, you should meet the standards of a real graduate," Joseph emphasized.

Napoleon understood that Joseph's notion of a "real graduate" excluded not only those from noble families seeking a veneer of education but also many ordinary graduates. The "real graduate" probably referred to an "outstanding graduate." This high demand didn't breed resentment in Napoleon because, in his view, meeting these standards was only natural.

"Napoleon, if you want to graduate early, you must excel," Joseph continued. "I've heard about your plan, so I've prepared a set of practice problems for you."

As he spoke, Joseph reached into a bag nearby and pulled out a small notebook, handing it to Napoleon.

"Work on it diligently," Joseph said before lowering his head to continue reading.

The days that followed were relatively peaceful. Joseph either gave lectures or worked on his own research and studies. Occasionally, he corresponded with Monge, Laplace, and others about mathematical problems and published several papers. Furthermore, having resolved his own financial difficulties, Joseph brought his younger brother Lucien to Paris and enrolled him in the school.

As for Napoleon, he had already requested to take the early graduation exam, and he was now immersed in intense studying.

The days passed quietly, with the goddess of spring's hemline swaying, and not a single decent spring rain showering down. Following the dry spring, a dry summer descended upon the city of Paris.

The price of bread in Paris had increased again, rising by a quarter compared to the end of the previous year.

This price hike was within Joseph's means, but it posed a serious threat to the common people. In this era, Parisians didn't have the habit of frequently taking to the streets in protests. Some who couldn't find a way to survive in Paris left for the countryside, or even chose to seek opportunities in America. Others who couldn't make ends meet through honest means turned to more illicit ways of life, such as theft or even robbery.

However, these issues didn't affect Joseph; he rarely left the school, and the hands of these thieves couldn't reach him. In fact, both thieves and robbers could only truly harm those living at the lowest echelons of society. As for the upper class, let alone the high-ranking nobility, even the so-called "middle class" wasn't easy prey. This was one of the reasons why some modern-day leftists continue to downplay the various problems resulting from declining social order and maintain their high-minded stance.

Chapter 26, The Fort of Calais

In that summer, Napoleon smoothly passed his graduation exam and successfully graduated from the Military Academy. He was assigned to the Raphal Legion and received the rank of Second Lieutenant in the artillery. On the day he left Paris, Joseph went to the stagecoach station to bid him farewell. Napoleon was dressed in a new gray-blue military uniform, a sword hanging at his waist, looking exceptionally spirited, except for being a bit short.

"You look quite like an officer," Joseph remarked, patting Napoleon's shoulder. "Work hard and become a general sooner."

"What's so great about being a general in France?" Napoleon whispered.

"Don't say that in front of others," Joseph advised. "Do your best in the army, hone your skills, and it will benefit you no matter what you do in the future."

After bidding farewell to Napoleon, Joseph returned to school. He had just sat down at his desk when the school principal's secretary, Will, entered.

"Monsieur Bonaparte, the principal would like to see you," Will said.

Joseph quickly stood up and followed Will to the two-story building where the principal's office was located.

"Will, what does the principal want?" Joseph asked as they walked along a path beside the flowerbed.

"It seems to be related to some engineering matter. I don't have all the details, but you'll find out when you meet with the principal," Will replied.

As they entered the Count of Dupont's building, a wig-wearing servant opened the door for them and took Joseph's hat, saying, "Monsieur Bonaparte, the Count is waiting for you in his office upstairs. Please follow me."

Joseph followed the servant upstairs and into the office of the Count of Dupont.

"Ah, Monsieur Bonaparte, you're here," the Count said.

"Principal, what can I do for you?" Joseph inquired.

"Yes, it's about some engineering matters. Have you ever been to Calais? The town known for lace production?" the Count suddenly asked.

"No, I haven't," Joseph replied.

"Calais is a decent town in the provinces, and it's a nice place to take a mistress or two for a vacation. But my mention of Calais is not related to that; it's about a military assignment. Would you be willing to go?" the Count asked with a smile.

"I'm willing to serve the country," Joseph quickly replied. "May I know more about the task?"

"It's about the aging forts in Calais. They need to build a new fort to protect the harbor, and they require a mathematical consultant. Originally, Monsieur Montresor was supposed to take on this task, but he has other commitments, so he recommended you. Joseph, may I call you that?"

"Of course, that's fine," Joseph said.

"Well, Joseph," the Count continued, "the school's salary is limited, enough to keep you from starving, but it won't provide a comfortable life. However, such assignments, though demanding, come with good income. A few of these tasks, and you can save a substantial amount. Look at Montresor; his salary is actually slightly higher than yours, but he earns at least six or seven times more through such work."

Joseph knew that Montresor had recommended him for this task not only because of his busy schedule but also as a way to help him. Gratefully, he said, "Thank you, Principal."

"Why thank me? You should thank Monsieur Montresor," the Count smiled. "However, he's a bit old-fashioned. If you want to show gratitude, sending him a substantial gift might offend his sensibilities... You'd be better off writing him an appreciative, scholarly article. Joseph, this time, when you take on the role of a mathematical consultant, both Montresor and I hope you'll use this opportunity to advance academically. While the task in Calais isn't urgent, if you have no other pressing matters, please get your current work in order and report to Calais as soon as possible."

Joseph knew this was the cue to leave, so he thanked the Count once again and exited the office. With the semester coming to an end and his schedule relatively light, he made arrangements and, three days later, set off for Calais with a letter of introduction from the Count.

In modern times, a high-speed train connects Paris and Calais, taking less than an hour to travel between the two. However, in this era, the journey took two full days, and Joseph arrived in Calais as the sun was setting.

As it was already late, Joseph decided not to go directly to the naval camp at the harbor. It was unlikely that anyone would receive him at this hour. Instead, he found an ordinary inn near the harbor and settled in for the night. After a night's battle with bedbugs, he woke up early the next day, determined never to stay in such a cheap inn again.

Following the cobbled streets, Joseph made his way toward the harbor. The Calais harbor was divided into two sections: one was the bustling civilian dock, with several docked merchant ships and other vessels. Although it was still early, sailors were already busy cleaning the decks. On the other side was the French Navy's military dock. It was much smaller than the civilian dock, with only one pier. Parked on the pier was a single-deck escort ship and a patrol boat with only two masts. The French Navy's main fleet was traditionally deployed in the Mediterranean, as Calais was too close to England. Standing at a high point on the shore and looking westward, on a clear day, you could even see the cliffs of Dover on the opposite side. Calais was only about thirty kilometers from the English military port of Dover in a straight line, and both the French and the British likely feared that one day they might be blocked in their own ports by the enemy's navy.

Joseph headed towards the military dock. He arrived at the guardhouse where a sentry with a red nose shouted, "Halt! This is a military zone. No entry!"

"I'm Joseph Bonaparte, a mathematics teacher from the Paris Military Academy, here to report to Commander Verluf," Joseph replied, presenting his introduction letter.

The sentry shifted his musket to his left hand and took the letter with his right. After a quick glance at the cover, he looked at Joseph and said, "Monsieur, please wait here for a moment."

He then turned and walked inside the gate, leaving Joseph waiting outside. After a while, he saw the sentry return with a captain.

"Mr. Bonaparte, I am Captain Saisse of the French Navy. Commander Verluf is not currently at the harbor; he is in the fortress on the hill. I can arrange for someone to escort you there."

"That would be appreciated," Joseph replied.

"Do you know how to ride a horse?" Captain Saisse asked.

"I have some experience," Joseph answered.

"Good," Captain Saisse said. He then turned to the sentry and ordered, "Pierre, go get two horses for us."

Pierre left and returned with two horses. These were regular military horses used for commuting and pulling, not for charging into battle.

Captain Saisse handed the reins of a gray mare with white spots to Joseph and said, "Monsieur Bonaparte, follow me, and I will go at a slower pace."

Joseph thanked him and took the reins, mounting the horse without assistance. Captain Saisse stood by, ready to lend a hand if needed. Seeing Joseph mount the horse effortlessly, he nodded and mounted the other horse, then urged the horses forward.

The fortress was not far from the military dock, situated on a small hill just beside the harbor. They rode for only a few minutes before approaching the fortress.

As they arrived at the fortress, Captain Saisse dismounted, and Joseph followed suit.

"Welcome to the headquarters of the fortress. Commander Verluf is here," Captain Saisse said. He led Joseph along a stone path, past the front gun emplacements, through a maple grove, and to a small, two-story white building.

"This is the headquarters of the fortress. Commander Verluf is here," Captain Saisse said, leading Joseph to the building.

Chapter 27: The Fort of Calais (2)

The fortress commander, Colonel Antoine de Verluf, was a tall man in his forties. He was quite pleased with Joseph's visit.

"Ah, Mr. Bonaparte, I thought you'd take a few more days to get here," Commander Verluf said. "I didn't expect you so soon. Well, do you need some rest?"

"Thank you, but I don't need it," Joseph replied. "In fact, I arrived last night. It was quite late when I got here, so I rested at the inn. I don't need more rest now."

"Youth is something to envy," Commander Verluf chuckled. "When I was your age, I never felt tired no matter how busy I was. Since you don't need rest, we can begin the work on expanding the fort. Captain Sais, why don't you take Mr. Bonaparte to settle in and then accompany him to the library for research and an on-site inspection? Mr. Bonaparte, if you need anything, feel free to ask Captain Sais."

"Thank you for your hospitality," Joseph replied.

Leaving the small building, Captain Sais asked, "Mr. Bonaparte, where is your luggage?"

"It's still at the inn," Joseph answered.

"Which inn?" Sais asked. "I can send a couple of men to bring your luggage here. We've arranged for you to stay in the officers' dormitory on that side. The conditions here can't compare to Paris, but we'll do our best to accommodate you."

"It's a small inn called 'Claude's Inn,'" Joseph replied. "By the way, you can call me Joseph."

"Ah, 'Claude's Inn'?" Sais chuckled. "Joseph, you must have chosen it for its proximity to the port and its decent appearance, not to mention the affordable price, right? Well, you probably didn't sleep well last night. That inn is known for having a lot of bedbugs!"

Seemingly concerned that Joseph might think he was mocking him, Sais added, "Well, I fell for it in the past too. The owner, Claude, is quite a character, but he doesn't put his heart into running the inn. Let's get you settled in the officers' dormitory..."

The officers' dormitory in the Calais fortress had slightly better conditions than the teachers' quarters at the Paris Military Academy, mainly because the cost of land and other things was much cheaper in this region than in Paris.

Once Joseph was settled, it was already noon. Sais took Joseph to the officers' mess for lunch. Calais, being by the sea, offered a much wider variety of fish compared to Paris, and it was much more affordable.

"If you ask me, you have a better life here than in Paris. The money we receive in Paris is no different from what you get here, but the prices in Paris are much higher," Joseph said as he took a bite of fish.

"But Paris is Paris after all," Sais replied. "The prices in Paris are indeed higher, but most people here would still prefer to go to Paris. These provinces are better suited for retirement, not particularly ideal for young people. If young folks want to achieve something, they should go to Paris. If I could go to Paris, I'd endure the higher prices. If it's just about money, there's more money to be made overseas. It's just that for people like us with no connections, going to Paris isn't easy."

Indeed, Paris offered more opportunities, and for ambitious individuals, Paris was unmatched by any provincial city.

"Maybe, uh, Sais, you're a captain of artillery, right?" Joseph suddenly asked.

"Yes, I am. What's on your mind?" Sais inquired.

"I'd like to consult with you about some matters related to the fortifications," Joseph explained. "After all, I'm just a mathematician, and there are many aspects of artillery that I'm not very familiar with."

"Oh, I thought you had some connections in Paris and could help me get to Paris," Sais joked.

"Well, to my knowledge, the Paris Military Academy has always lacked an expert in naval matters. If you're capable..." Joseph added playfully.

"Oh, I get seasick!" Sais said. "Aren't there any other places in need of people?"

"I haven't heard of any for now," Joseph shook his head. "And you're in the navy, aren't you? How can you get seasick?"

Sais's face blushed slightly. "In the navy... well, not everyone in the navy has to be on ships. The garrison here at the fortress is also part of the navy. I serve in the coastal artillery, and I don't have to board ships. I'm quite skilled in artillery, and you won't find many better gunners in the entire navy than me. If it weren't for my seasickness... By the way, doesn't your school need an artillery instructor?"

"I haven't heard of that for now," Joseph said. "And, as you know, even if there were a need, the position would most likely be filled by an army officer."

Unlike across the sea in England, France had always been a land-based power. In the French military, the army held more influence and prestige than the navy.

"I see," Sais sounded somewhat disappointed, but he continued, "Joseph, you have a lot of connections in Paris and a lot of knowledge. If you find any opportunities, please remember me."

"I'll definitely remember," Joseph assured him.

Joseph's response wasn't just a polite gesture; he also needed to establish connections in the navy. In the coming years, the northern regions of France experienced poor harvests, while the south had no shortage of food. However, due to the country's feudal structure, there were numerous barriers to internal trade, causing the cost of transporting goods to rise. If he could use his navy connections to bring food from the south to the north and deliver it to the northern ports, he could make a substantial profit. Smuggling from across the sea in England could yield even greater profits.

"In fact, Calais is a good place," Joseph continued. "It's one of the most important ports in the north. There will be many economic opportunities here. Maybe, in the future, I'll need your assistance too. Anyway, we're friends, and if the opportunity arises, we should help each other, don't you think?"

"You're right. It's a deal," Sais said.

In the following days, Joseph discussed the plans for renovating the fort with the designer Michel and the artillery commander Sais. As the commander of the artillery on the fort, Sais was also involved.

"The primary requirement for the fort is to control the shipping lanes into and out of the harbor. Our current fort is insufficient to control the entire channel. So, we plan to build a new fort at this location, and with these two forts working together, we can control the entry and exit of ships..." Michel explained, pointing at the blueprint.

"Sounds like a good location," Joseph said as he looked at the blueprint. "Is there anything specific you need me to calculate?"

"It's mainly about the ballistics data for the cannons. We also need your input on the specific design of the entire fort," Michel replied.

"Unfortunately, with the existing cannons, and the lack of suitable high ground nearby, our cannons have a limited range. Although they can barely protect the shipping lanes, they are far from sufficient to protect the fleet when it deploys from the harbor. If the fleet is blocked in the harbor, there's no way for them to engage in combat," Joseph added.

Naval warfare required well-organized formations. This allowed for the efficient deployment of firepower and prevented friendly fire when maneuvering, as well as collisions between ships. The limited space in naval ports made it impossible for fleets to form their formations inside the harbor. If enemy ships blocked the harbor entrance before the fleet could finish forming its formation, they would launch an attack before the fleet could complete its formation. If the cannons on the harbor fortifications had sufficient range, they could provide protection for the fleet when forming its formation.

To achieve this, there were generally two methods. One was to install giant cannons on the fortifications. Fortifications had the advantage of being built on solid ground, eliminating concerns about them being sunk by heavy cannons. As a result, they could accommodate much larger cannons than those on ships, and larger cannons typically had longer ranges.

However, this approach had its drawbacks. First, the cost of producing giant cannons was high. Second, the rate of fire for these cannons was quite slow. For example, the Turkish-made Dardanelles guns of the 15th century could fire at most seven shots per day. Although technology had advanced since then, the rate of fire for giant cannons remained limited. This slow rate of fire was insufficient for the task of protecting the fleet's deployment.

The second method was to place cannons in the highest position possible. This significantly extended their range. Additionally, the stability of cannons on fortifications meant that their effective range was naturally greater. This allowed for a more open space for naval ships to deploy their formations.

However, Calais and its vicinity did not offer a natural high ground. To achieve this, they would have to build an artificial high ground by piling up earth. This required more manpower and resources, or, more plainly put, more money.

"The navy believes there won't be any need for warships to form battle lines inside Calais Harbor. So, the fortifications only need to ensure the blockage of the channel and prevent enemy attacks on the harbor," designer Michel explained. "After all, Calais is not Toulon. There will be at most one or two patrol ships here. Calais is primarily a commercial port, and commercial ships don't require battle formations. Look at Dover on the opposite side; it has natural high ground, making it easier to build fortifications, but even then, the British haven't stationed many warships there."

Because of the limited scale of the new fortifications, the project's difficulty was relatively low. For Joseph, who was getting involved in such matters for the first time, this wasn't necessarily a bad thing.

Chapter 28: The Rising Star of Science

The design of the Fort of Calais and its associated calculations were not particularly difficult, and Montreuil had entrusted this task to Joseph more as a means for him to earn some extra money. However, Montreuil soon realized that Joseph was gaining much more than just a few coins from this endeavor.

One day in July, while Montreuil was on a business trip to Nice, he received a thick letter from Joseph. The envelope was hefty and, had it not been sent through military channels, it would have cost Joseph a significant amount in postage. Montreuil opened the letter to find a stack of papers covered with various numbers and symbols.

Montreuil glanced briefly at the contents and understood that the letter discussed problems related to the limits of mathematical functions. However, he was about to head out and had no time to thoroughly examine the letter. So, he slipped it into the pocket of his coat and left.

After finishing his work, it was already past four in the afternoon. Some colleagues invited Montreuil to join them for dinner in the evening. He declined, citing personal matters that required his attention. The colleagues did not press him further and left on their own.

According to Christian beliefs, there are seven sins that can lead a person's soul to hell: pride, envy, wrath, sloth, greed, gluttony, and lust. If this were true, then in Europe, the French, particularly the nobility, had the highest probability of descending into hell due to their gluttony. Like the great eating nations of the East, the French, especially the French nobility, were renowned for their extravagant feasts that extended well into the night. Compared to Paris, Nice had relatively lower prices, and its seafood offerings were abundant. A group of friends indulged in an eating and drinking spree from the afternoon until deep into the night, with their stomachs and throats fully satisfied. As they returned to their accommodations, they noticed that Montreuil's room, which was usually well-disciplined, had a lit lamp.

"What is Montreuil doing?" one of them mumbled.

"Who cares? That stiff guy doesn't seem like a real Frenchman," another intoxicated fellow replied.

These inebriated companions weren't genuinely interested in what Montreuil was doing, so they merely muttered some comments and went to sleep.

Montreuil, oblivious to the speculations outside his door, sat at his desk with a stack of draft papers, meticulously filled with various mathematical calculations. He furrowed his brow and continued his work, even after one candle burned out and the sky outside began to lighten.

"Joseph's research is quite impressive. I haven't found any issues with it so far. Well, he must have been inspired while working on the construction of the fort. Ah, youth is truly a wonderful thing. In my younger days, my thoughts flowed much more swiftly," Montreuil sighed as he put down his quill.

"Joseph probably submitted this paper to the Academy of Sciences. I wonder how those folks at the Academy will evaluate it," Montreuil pondered.

Indeed, Joseph had submitted the paper to the Academy of Sciences. However, what Montreuil had not anticipated was that, within a week, Joseph would send another paper to the Academy, in which he derived a significant inequality. This inequality, originally known as Cauchy's inequality in history, might need a new name now.

But this was just the beginning. Six months later, Joseph published a physics paper titled "Research on Frictional Heat." In this paper, Joseph conducted an experiment where he placed two ice blocks of equal mass and temperature in a glass container submerged in water. The ice blocks were rubbed against each other, causing them to melt. In contrast, another set of ice blocks, also of equal mass and temperature but left untouched, naturally melted as well. Joseph recorded the temperature changes of the water in both cases. Surprisingly, the water in the frictional heat group did not cool as rapidly as expected. Instead, its temperature decrease was more gradual and gentle. Joseph pointed out that this phenomenon contradicted the predictions of the traditional caloric theory, a concept widely accepted in Europe.

Caloric theory posited that heat was a substance called "caloric" - an immaterial, non-spatial substance. When an object absorbed caloric, its temperature would rise, and caloric would flow from a warmer object to a cooler one or through the pores of solids and liquids.

Caloric theory successfully explained many physical phenomena, including the cooling of hot tea at room temperature: the tea's high temperature indicated a higher caloric concentration, causing caloric to flow to the cooler surrounding air. It could also account for the expansion of heated air, as air molecules absorbed caloric, increasing their volume. Despite some challenges, caloric theory remained the dominant scientific hypothesis until the mid-19th century.

However, caloric theory had its flaws. It required that caloric could neither be created nor destroyed but only transferred between objects. Therefore, if one object's temperature rose, another's had to fall by an equivalent amount, and this posed difficulties in explaining phenomena like frictional heat. In Joseph's experiment, there was no clear source of caloric to melt the ice into water.

Unlike Humphry Davy, the scientist who initially conducted the experiment, Joseph fully grasped its significance. He accompanied the experiment with rigorous mathematical analysis and showed that, in this context, caloric theory and the kinetic theory of heat were not equivalent.

"To be honest, this paper almost spells doom for caloric theory!" Laplace said to Carnot, his face contorted in anguish. "This Joseph, he's such a headache! There are so many fascinating things to explore in this world, but he seems to derive joy from demolishing others' theories. He... he's just..."

"Yeah, I remember your distress when he first introduced the wave theory of light," Carnot replied, his face equally troubled. "Actually, I've just completed a study based on caloric theory."

"Me too," Laplace replied. "I had an idea recently. Perhaps by considering changes in caloric, I can refine some aspects of Newton's formula for the speed of sound. However, right now, the research has only just started, and I might have to pause it for a while."

"That's not a big problem," Carnot said. "Your research is still in its early stages, and now you can consider it from the perspective of kinetic theory instead. According to Joseph's arguments, although caloric theory and kinetic theory are not entirely equivalent, in most cases, they can be considered interchangeable. So, the changes you need to make should be minimal. But my research is already complete..."

"Well then, Teacher, how do you view Joseph's paper?" Laplace asked.

"What can I say?" Carnot replied. "Just like last time, I haven't found any problems with his paper, at least not yet. Of course, his viewpoint surely has some issues, but how can caloric theory be wrong? At most, it might need some adjustments, some supplements. He also acknowledges that there may be alternative explanations besides his. Currently, caloric theory does have its shortcomings when it comes to explaining frictional heat, but that doesn't mean it's entirely finished. It merely indicates that for it to remain valid, we need to make further modifications. However, at the moment, I haven't found a way to do that... This Joseph, he always enjoys causing trouble for us."

Laplace noticed that despite the trouble Joseph's research had caused Carnot and the numerous conflicts with Carnot's own work, Carnot's attitude toward Joseph was unexpectedly lenient. While Carnot complained aloud, his tone conveyed more a sense of "this child is mischievous" than any genuine malice.

"This teacher is surprisingly magnanimous, isn't he? It's so unlike him!" Laplace couldn't help but think. "And he doesn't even fully agree with Joseph's views. If someone else had proposed such ideas, maybe even myself, the teacher might have been furious. Why, then, is he so tolerant this time?"

"That lad, he's truly intelligent, but he enjoys stirring up trouble. Imagine if he could channel his cleverness into something more productive, rather than exclusively unsettling our theories. Well, when he returns, I'll have a good talk with him," Carnot remarked, still smiling and oblivious to Laplace's thoughts.

Chapter 29: Leaving No Way for Nobels

After leaving the Academy, Lavoisier didn't head home but instead took a carriage out of Paris towards one of the Duke of Orleans' estates. A few days ago, he had borrowed a piece of land from the Duke for his new scientific experiments.

Perhaps it was due to the king's long struggle to have a son (Queen Marie Antoinette gave birth to her first child eleven years after marrying him), which had led many of the king's close noble relatives to believe that he might become heirless and that the crown might fall to them. The

Orleans family, as close relatives of the king, might have entertained similar thoughts. A few years ago, after the king underwent surgery and finally impregnated the queen, they had two sons. However, ambition, once kindled, is hard to extinguish naturally. Just like Macbeth, who harbored ambitions for the Scottish crown because of the witches' prophecies. Although the old king had clearly stated that his crown would go to his son, not Macbeth, Macbeth's ambition for the crown did not diminish; instead, it grew stronger and eventually drove him to regicide. Some great nobles, including the Orleans family, shared this ambition, which had not faded away with the birth of the princes. Moreover, with the king's weak character and the queen, despite her strong-willed nature, lacking much political education and being politically immature as a woman, these nobles felt that "they could take his place."

To achieve this, over the years, great nobles, including the Orleans family, worked both overtly and covertly to undermine the king, making sure he couldn't do anything right. They also deliberately created public opinion to discredit the royal family. Of course, they wouldn't directly target the kingit was too direct and would reveal their ambition too easily. So, they all unanimously focused their efforts on Queen Marie. Marie, while strong-willed, was also vain and had little concept of money, so it was easy to trap her. They flattered her, lured her into hosting various balls year after year, and swindled millions of francs from her in "gifts." Meanwhile, they spread rumors about her "extravagance," even giving her the nickname "Madame Deficit." The recent scandal of the peculiar necklace incident had further tarnished her reputation. (A female con artist managed to escape from a heavily guarded prison after orchestrating such a grand spectacle that ensnared even the queen. Whether there was a problem here, only heaven knew.)

Of course, the nobles were measured in their approach. Their propaganda seemingly aimed to exonerate the king, but in terms of its impact, it was actually better than directly attacking the king's greed and cruelty. Because while people might hate a greedy and cruel king, they also feared him. But a kind and weak "good-hearted" king, controlled by his own wife, was scorned.

Machiavelli believed that the weakest and most easily overthrown kings were not tyrants hated by all, but kings generally despised by their subjects. Through this kind of propaganda, the great nobles steered people's hatred toward the queen while leaving the most dreadful thingcontemptfor the king.

If Louis XVI were a strong ruler, or even just a tyrant, he could have swiftly quelled these discussions with forceful measures. At least, he could have turned people's contempt into fear and hatred. In relative terms, a king's crown worn by a feared tyrant would be more secure than one worn by a king who was scorned.

However, Louis XVI was a man of weak character, always looking back and hesitating, unable to make the ruthless decisions needed to cut off the heads of these great nobles. His concessions only made the great nobles, including the Orleans family, believe that the French crown naturally belonged to them.

Machiavelli also argued that kings should show benevolence to their subjects, making them grateful and hopeful. While undermining the king with various snares, the nobles eagerly portrayed themselves as "friends of the people," "enlightened gentlemen," and "pioneers of democracy." In the words of a great teacher to come, they waved the begging bag of the proletariat as a flag to win over the people. Of course, these tricks would eventually be exposed, but for now, they were enough to have the people follow them.

To appear as "friends of the people," "enlightened gentlemen," and "pioneers of democracy," the nobles all put on a show of loving science, loving their country, and loving the people. Supporting academic research and academic freedom became a badge of honor among these nobles. Thus, supporting Lavoisier's research, which had become a source of pride for France, was the kind of thing that "friends of the people," "enlightened gentlemen," and "pioneers of democracy" should do.

Duke Philippe had some free time and was waiting for Lavoisier. He was genuinely interested in Lavoisier's experiments and asked about their content when he had lent him this land.

"Master, you know, I'm just curious, no other intentions. Can you tell me what experiments you're doing here?" Duke Philippe asked when he lent him the land.

"Oh, Joseph wrote me a letter. In it, he mentioned a special way to handle glycerin using concentrated nitric acid and concentrated sulfuric acid, creating a highly powerful liquid explosive. Well, perhaps we shouldn't call it gunpowder anymore; we should call it explosive. There are still many problems with this liquid explosive, but Joseph is busy with mathematics now and not particularly well-versed in such matters. So, after some preliminary experiments, he told me about it. I gave it a try, and it turned out that this stuff is incredibly powerful, just as Joseph said, probably dozens or even over a hundred times more powerful than black powder."

"Is it really that potent?" Duke Philippe exclaimed.

"It sure is," Lavoisier replied. "You see, Joseph described it as powerful as Zeus's thunderbolts. He suggested that when I experiment with it, I should never exceed one gram at a time. So, I tried it, and it exploded for real. And its power far exceeded my expectations. Well, my lord, this stuff is quite dangerous. To conduct full-scale experiments, it's impossible within the city of Paris."

"Such a powerful substance should be studied by the military, shouldn't it?" Duke Philippe asked.

"Ah, Your Highness, you might not know, but this substance, while immensely powerful, is not suitable for military use, at least not currently," Lavoisier explained. "You see, this stuff is highly unstable. A slight vibration, exposure to light, or even a little heat, and it will explode. Imagine using it for military purposes; during transportation, a small bump in the road could cause an entire cartload of explosive to blow up, with the power equivalent to over a hundred carts of gunpowder exploding at once."

"My God!" Duke Philippe exclaimed. "If it's that dangerous, how can this substance be used?"

"It's unsuitable for military use," Lavoisier continued. "This stuff is difficult to transport and often needs to be prepared on-site. In military operations, it's impossible to prepare this explosive on the battlefield. However, for civilian use, like mining, we can prepare it directly at the mining site and use it immediately, which is relatively safer. My lord, this substance is incredibly valuable. It can be very useful in mining and civil engineering projects, potentially bringing about revolutionary changes. The cost of raw materials is not high, and if we can solve the preparation problems, this substance should bring in a substantial income. Are you interested, Your Grace?"

"If the preparation issues can be resolved? My Master, does this mean there are problems with making this substance?" Duke Philippe inquired.

"Yes, currently it can only be made in a laboratory, and the quantity produced is quite limited. If it's to be used on a large scale, the production method will need to change. Moreover, even during

production, there are considerable risks. Mass production under different conditions and environments will require careful study," Lavoisier explained.

"Then, Mr. Lavoisier, may I join this research?" Duke Philippe asked.

"Of course, I welcome your participation. In the future, you can even name this product. Furthermore, your name can be added as an author of future papers," Lavoisier said.

The Duke laughed, "Ah, that won't do. People will say I shamelessly pursued honors that don't belong to me. So, my name can't appear as an author on the papers. However, if you mention in the paper that I provided some insignificant help for this research, I'd be very pleased."

"That's not a problem," Lavoisier said with a smile. "Also, this research is somewhat hazardous. While you can certainly participate, please maintain a safe distance during dangerous operations."

Chapter 30: Is Napoleon Becoming a Philosopher?

Nitroglycerin, in the original course of history, was invented by the Italian chemist Sobrero in 1846. However, the raw materials for its production, such as glycerin, nitric acid, and sulfuric acid, had already existed. At this point in time, producing nitroglycerin was no longer a significant technological challenge. In fact, the manufacturing process of nitroglycerin wasn't too difficult; it mainly required maintaining a low temperature throughout the preparation.

But in the original history, it was precisely this detail that cost a tremendous, even bloody, price for people to grasp. Lu Xun once sighed, "The history of humanity advancing through bloodshed is like the formation of coal. It consumed a vast amount of wood at the beginning but ended up with only a small piece." Technological progress follows a similar pattern. Many techniques that were acquired at a great cost are, in essence, quite simple.

Joseph, of course, didn't want Lavoisier to perish in a nitroglycerin explosion. That's why he explicitly mentioned temperature control in the letter he wrote to Lavoisier. Joseph reasoned that more vigorous molecular motion would intensify the reaction, making it more dangerous. Therefore, by maintaining a low temperature throughout, despite slowing down the reaction, it significantly increased safety.

However, even with this crucial guidance, achieving perfection was challenging. Just two days later, Lavoisier experienced his first explosion on the Duke of Orleans' property. An assistant failed to follow the operational procedures strictly, injected the acid too rapidly, and caused a serious accident, resulting in one death and five injuries. This was largely due to the relatively small amount of nitroglycerin being produced; otherwise, the other five individuals might not have survived.

This explosion frightened Lavoisier considerably. He was present at the time, but he had momentarily left to quench his thirst. Of course, if he had been there, it's hard to say whether the assistant would have been equally careless. However, the Duke of Phillips seemed particularly composed and even more interested in this matter. Having witnessed the power of this substance, he immediately realized its great potential. As for casualties during the research process, well, they sacrificed themselves for the advancement of science, a death of greater significance. People are bound to die, but the meaning of their deaths varies. Sacrificing themselves for the advancement of science, like them, means dying for a cause greater than the Alps. As for whether people might die during production in the future, well, industrial accidents are challenging to entirely avoid; people

also get run over by carriages while walking. Moreover, even if those workers were to die, they would be dying for the construction of France, so what's the problem? In any case, they won't die at the Duke's residence, just as the Duke would never be run over by a carriage when he walks in the street.

While periodic explosions resounded at the Duke of Phillips' estate, Joseph completed his business in Calais and returned to Paris. His brother Napoleon, along with his younger brother Louis, had also arrived in Paris.

"I took leave from the army and made a trip to Corsica to bring Louis to you. Do you have any water here? I'm dying of thirst," Napoleon exclaimed upon seeing Joseph.

"The water is over there. Pour yourself a drink," Joseph said. Then he approached Louis and said, "Louis, you've grown taller again; you're even taller than Napoleon now. Haha. In our family, including the girls, you might become the shortest one."

Napoleon didn't like others making fun of his height, but he knew that the more he showed his anger, the more Joseph, that annoying guy, would be pleased. So, he simply ignored him and poured himself a glass of water, then drank it down.

"How is everything at home?" Joseph asked.

"Not good," Napoleon replied.

"There's nothing wrong, it's the same as before," Louis said.

"The same as before is the worst kind of 'not good,'" Napoleon retorted.

"What's wrong? Have you come out into the world, seen it, and now you're not satisfied with Corsica? Can't stand Corsica anymore?" Joseph asked, reclining in his chair and propping up his legs.

"Why would I dislike Corsica? It's just that Corsica lacks change. In France, in Paris, you can always feel the dynamism, new ideas, new science, new opportunities; everything changes and progresses daily. But in Corsica, today is the same as yesterday, and yesterday is the same as the day before. I talked to people, and their thoughts haven't changed in ten years, even a hundred years, or two hundred years. Even the patriotic idealists are the same; they only want independence and then lock themselves away, continuing to live as they did hundreds of years ago. This is not a good thing; Corsica shouldn't be like this."

"What do you think Corsica should be like then? Napoleon, it seems like you used to think the same way," Joseph said, a mocking smile on his face.

"That shows that I've progressed beyond the others," Napoleon replied. "As for how Corsica should be, I believe the future Corsica should be a country of freedom, equality, justice, and the rule of law, just as Voltaire, Rousseau, and Montesquieu depicted."

"Napoleon, you've indeed progressed!" Joseph chuckled. "So, what are your plans?"

"During my time in Corsica, I've been thinking about this. Firstly, I believe that Corsica's fundamental problem is not France's occupation but the people's lack of awakening. To truly change Corsica, we must educate our people and awaken them."

"What?" Joseph was taken aback, his eyes widened as he stared at his brother. "Does this guy have a problem? Does he not want to be a great general anymore because of our time-travel and the butterfly effect, and now he wants to be a Lu Xun who awakens the masses?"

Joseph hesitated for a moment and then asked, "Napoleon, what are your specific plans?"

"I plan to write a history of Corsica, just like 'The Gallic Wars,'" Napoleon said.

Upon hearing this, Joseph breathed a sigh of relief. It seemed that Napoleon was still Napoleon. 'The Gallic Wars' was a work by Julius Caesar, the Roman emperor. This meant that Napoleon's role model remained political and military leaders like Caesar, and writing the history of Corsica was merely a means to achieve his political goals.

"I'm not entirely optimistic about your plans," Joseph shook his head. "You know, the literacy rate in Corsica is even lower than in France and Italy. Few people can read."

Napoleon opened his mouth, ready to argue, but Joseph didn't give him the chance and continued, "Napoleon, don't rush to argue. I know what you want to say. You want to say that even though few people in Corsica can read, as long as these people realize the problem and understand the new, correct ideas from outside, they can not only change themselves but also influence others. Because these individuals are natural leaders in Corsica. Is that what you're thinking?"

Napoleon stared at Joseph for a while before answering, "Yes, that's what I think. What's wrong with that?" He answered somewhat reluctantly, likely due to his prediction based on his old habits when dealing with Joseph, expecting his brother to respond with sharp sarcasm immediately.

Indeed, his prediction turned out to be quite accurate. Joseph immediately retorted, "My naive brother, you're too young and naive! You actually believe you can persuade people with reason! It's quite amusing."

At this point, Joseph suddenly leaned forward, bringing his face close to Napoleon's and stared into his eyes. "My brother, you must remember that the primary driver of most people's actions is not their brains but their behinds! The key isn't what's right or moral, but what's advantageous for them, where their behinds are positioned! Do you understand?"

With that statement, he straightened up again. "Think with your head for a moment. In a 'free, equal, just, and legal state,' what impact does it have on the people you need to collaborate with to achieve your goals? Is it beneficial or harmful? Forget about morality and ideals; consider them all as Machiavellian individuals. Then think, will they support a 'free, equal, just, and legal state'? Not to mention, in France, who opposes this 'free, equal, just, and legal state'? Napoleon, do you remember what the primary question in every revolution is?"

Napoleon shook his head.

"Who is our enemy? Who is our friend? This is the foremost question in a revolution," Joseph explained, shamelessly presenting great thoughts as his own. "In the past, most failed revolutionary struggles had many reasons, but the fundamental one was their inability to unite true friends to attack true enemies. Revolutionaries are the guides of the masses, and no revolution has succeeded without the leadership of revolutionaries. If you want to be certain of not straying and succeeding, you must unite our true friends to attack our true enemies."

Napoleon remained silent for a while, and then he finally spoke, but this time, there was a sense of longing in his eyes.

"So, how do we determine who our friends are and who our enemies are?" Napoleon asked.