The Alchemist

by Charles L. Harness

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Andrew Bleeker, research director of Hope Chemicals, had more than once referred to his laboratory as "the soap opera," "the sideshow," or "the country club." He took instant umbrage, however, if anyone else ventured any jesting synonyms for his group of some five hundred people in the cluster of red brick buildings at Camelot, Virginia. Ordinarily, therefore, he would have been mildly incensed when Conrad Patrick, the Hope patent director, stuck his head in the door and told him that a three-ring circus was about to start down in Silicon Compounds, with Pierre Celsus in the center ring. But the circumstances were not ordinary. For the past two days, at the request of the United States government-- which, the Chairman of the Board had bluntly reminded him, was Hope's biggest single customer-- Bleeker had been turning the lab inside out for the benefit of Alexei Sasanov, Minister of Technology for the People's Republic, and for the past several hours had listened patiently to a comparison of decadent American chemical research and burgeoning socialistic research. The interruption offered a chance of respite, and his heart leaped. Nevertheless, appearances had to be maintained.

"What's Celsus up to?" he growled.

"He's going to try to start the silamine unit," said Patrick.

Bleeker's voice rose sharply. "Silicon Compounds has been trying to start that crazy thing for two months. I told them yesterday to junk the project. It's *dead.*"

Patrick laughed. "Old projects never die. They just smell that way."

Bleeker snorted. "How does Celsus intend to do it?"

"He wants to try to synthesize *one* molecule of silamine in the reactor. He says the reaction should be autocatalytic, and once seeded, the fluidizer will start making more silamine. There'll be a little picric acid in the receiver, which ought to throw down a yellow silamine picrate within seconds, if it works."

"But that's idiotic! How can he *seed* the reactor with one molecule of silamine when not one single molecule of silamine exists anywhere on earth?"

Bleeker's distinguished visitor spoke up. "I quite agree with Mr. Bleeker." On the face of a less complicated man, the faint smile that played briefly about Sasanov's mouth might have been interpreted as a sneer. "It is a technical impossibility. Our central laboratories in Czezhlo have spent hundreds of thousands of rubles attempting to synthesize silamine. We want it as an intermediate for heat-resistant silicon polymers for missile coatings. We offered great incentives for success."

"And penalized failures?" murmured Bleeker.

Sasanov shrugged delicately. "The point is, where the most efficient, the most dedicated laboratory in the world has failed, it is hardly likely that a commercial American laboratory can succeed."

Patrick felt his red mustache bristling. He ignored the warning in Bleeker's eyes. "Would you care to make a small wager?"

Sasanov turned to Bleeker. "It is permitted?"

It was Bleeker's turn to shrug. "You have diplomatic immunity, Mr. Sasanov."

"So. A small wager then. If you make any silamine, the People's Republic will give Hope Chemicals a contract for a plant design, with handsome running royalty for every pound of silamine we make."

"At twenty-five cents a pound," said Bleeker quickly.

Sasanov thought a moment. "Exorbitant, of course. But agreed."

"This will have to be approved by Hope management," said Bleeker carefully. "We've heard complaints, you know, about the... ah... slow royalty payments to other American firms who have designed plants for your country in the past."

Sasanov spread his hands expressively. "Vicious lies. Surely you trust the People's Republic?"

Bleeker coughed.

"This contract isn't much of a stake," objected Patrick. "That's between your government and the Hope corporation, not between you and me."

"Readily remedied," smiled Sasanov. "What is the classic consideration in your English common law? A peppercorn, isn't it? Well then, I offer the contract and a jug of vodka, to be sent direct to you here at the lab, if I lose."

"Against the rules," said Bleeker. "Spiritous liquors can't be brought into the lab."

"Make it sweet cider," said Patrick.

"Certainly, sweet cider," said Sasanov. "The best in the world. Cider from your Winchester apples is a poor thing in comparison."

Bleeker set his jaw. "All right, your stake is a contract and a jug of cider. What's *our* stake?"

"*Our* stake, Mr. Bleeker? I think Mr. Patrick suggested the wager. The matter is, therefore, between him and me. And Mr. Patrick can readily provide his stake."

"Such as what," demanded Patrick.

"Your desk."

"My... desk?" repeated Patrick stupidly.

"You don't have to do this, Con," said Bleeker quietly.

"Well, I don't know..." As Patrick considered the matter, his throat began to contract. His desk was a "rolltop," over a hundred years old, and one of the few remaining in the country that had never been used by Abraham Lincoln. It had caught his eye when browsing through the junk shops of Washington, and its entire panorama of possibilities opened up to him instantly. He bought it on the spot. He himself had carefully removed the ancient peeling finish by dint of solvent, scraper, and sandpaper, and had then slowly refinished it over a period of months. Finally he had moved it to his office at the lab. The pigeonholes were semi-filled with rolled documents, bound with genuine red tape that his London patent associates had found for him. He had patinated the papers with a light layer of dust recovered from his vacuum cleaner. His intercom and dictating machine were installed in the side drawers, and a tiny refrigerator in the lower left-hand cabinet. A kerosene reading lamp-- converted to fluorescent in the Hope maintenance shop-- sat on the upper deck of the desk, and a brass cuspidor gleamed in the lower right-hand cabinet. As a final touch, he had captured and imprisoned one small, bewildered spider, who, after a shrug of its arachnid shoulders, had gallantly garlanded a few of the more remote pigeonholes with sterile, dust-gathering strands.

For a time, Patrick's rolltop had been the talk of the lab; soon after its arrival dozens of people found it suddenly necessary to confer with Patrick on all kinds of patent problems. And now, even after the fine edge of novelty was gone, Hope people visiting from out of town still came in to see it. More importantly, as Patrick now realized with a chill, Comrade Sasanov, after his introduction to the patent director on the first day of his visit, had since dropped in to Patrick's office several times, for no apparent reason, and had stared thoughtfully at the desk.

There was no comparison between his desk and a jug of cider.

Still, a man had to have faith. And he had faith in Pierre Celsus.

"It's a bet," said Patrick.

* * *

The three men pushed their way through the spectators surrounding Pierre Celsus and the silamine setup.

Celsus, a slight nervous figure, largely hidden in an unlaundered lab coat, was evidently finishing up his

preparations. He checked the fluidizer, which was a two-inch-diameter glass tube about one-third full of silica gel, then the Variac control on the resistance heater wound around the tube, then the ammonia inlet at the bottom of the fluidizer, then the glassware leading to the condenser-- a two-neck glass flask venting to the hood. Finally he turned on the ammonia pre-heater and slowly opened the flow meter. The silica gel in the column shuddered slightly as a "bubble" of ammonia vapor forced its way up through the bed. Celsus opened the ammonia valve wider and turned up the pre-heater further, his eyes flickering from the column to the thermocouple readers and the flow meter and back again. Not once did he look at that collector, where the ammonia flowing into the flask was already sucking the water back, with intermittent gurgles, into the gas beaker. Finally he seemed satisfied. He stopped adjusting things and stood back a moment.

Patrick heard strange sounds. Celsus was muttering in a queer rhythm.

The room grew instantly still.

Patrick realized that the man was *chanting... to the equipment.* The patent director tugged at his red mustache uneasily. Goose pimples began to flow in waves over the nape of his neck.

Celsus now donned a pair of white asbestos gloves and stroked the fluidizer column as he sang.

Bleeker and Sasanov exchanged glances. Sasanov looked faintly bewildered. Bleeker felt the same way, but was determined not to let it show.

Patrick looked about him. There were at least fifteen people there-- group leaders and senior chemists, mostly. A couple of people from his own department were there: Alec Cord and one of the women attorneys, Marguerite French. They were both completely oblivious to him. Marguerite was moving her eyes continuously back and forth between Celsus and something metallic she held in her hand. Patrick recognized it with a start. It was a stopwatch.

It then occurred to Patrick that there was something strangely familiar in Celsus' urgent intonations, and in the manner in which he stroked and caressed the equipment. But he couldn't quite identify it.

Suddenly Celsus stepped back, right arm raised, and cried: "Silamine! Exist!"

And instantly Patrick had it. Celsus was like a "hot" gambler who had just thrown the dice.

Silent seconds passed, broken only by the shuffle of shore as Bleeker and Sasanov edged in closer to the bench.

Patrick stole a glance at Marguerite French, who was leaning forward as though hypnotized by the bubbling liquor in the collection flask. Suddenly a yellow cloud appeared in the flask, and Marguerite's arm jerked. Patrick knew she had pushed the timer on her watch. She looked down at the watch, and her face began to turn white. Patrick, concerned, started over to her, But just then, Bond, Silicon Compounds Group Leader, called out: "That's enough! Let's take a sample for infrared!"

"Go ahead, Prufrock," said Celsus.

A. Prufrock Prentice, Celsus' technician, who until now had been hovering in the background, now stepped forward, removed the vent assembly in the collector with a swift expert gesture, and drew out a few cc. of the slurry with a pipette. He dropped the sample into a bottle and then disappeared out the door.

Patrick forgot momentarily about Marguerite French. He turned to the bemused Sasanov with a grin. "Efficient, aren't they? We'll know in a minute what it is."

Sasanov shook his head. "How can it be efficient when they were ordered not to do it?"

"You've got a point, Comrade," grumped Bleeker. "You don't see them stumbling all over themselves on a *scheduled* run."

"Of course not, Andy," smiled Patrick. "But this was a *bootleg* run. You ought to institute a required schedule of bootlegs."

"Bootlegs?" queried Sasanov. "What are these bootlegs, please?"

"Just a decadent American laboratory custom, Comrade. When you have orders to stop trying, but you know it will work if you try one more time, then you just go ahead and do it. Sneaky, isn't it?"

Sasanov sniffed.

Patrick was in high spirits. He looked about for Marguerite. She had disappeared. That surprised him. After all that business with the watch, didn't she really want to know whether Celsus had made it? Or--

the thought hit him hard-- was she so sure he *had* made it, that there was no point in staying for the i.r. report?

The phone rang. Bond grabbed it. The conversation was brief. Bond replaced the phone and turned around, his eyes searching the room. "Where's Pierre?" he demanded.

But Celsus, too, had gone.

"Was it silamine?" called Patrick. He turned to face Sasanov.

"It was silamine," said Bond.

Sasanov's face was a mask. He bowed low to Patrick. "I will send the contract and the cider, as soon as I arrive at the chancellery in Czezhlo. And now, if you will excuse me, I have a plane to catch."

* * *

The lab was the slave of fad and fashion, and news of a new discovery flashed through the bays faster than the speed of light and with an audience saturation that dwarfed Bleeker's Management Bulletins. A new catalyst discovered in Inorganics in the morning was likely to be warming up in the test tubes in Polymer that afternoon. A new herbicide found effective in the Biology Bay in the afternoon would probably be followed up by a new synthesis in Organics the next morning. Currently, however, thanks to Pierre Celsus, the rage had now become that lovely child of the petroleum refinery, the fluidized reaction, in which hot gases having composition A streamed up through a turbulent mass of tiny catalyst particles, while simultaneously suspending that mass, to emerge at the top of the bed with composition B.

During the entire previous year, there had not been a single fluidized experiment at Hope. But within the hour following Celsus' silamine run, Group Leaders were holding conferences behind closed doors with their chief assistants as to how to reconstruct the chemistry of tried and true reactions so as to make them amenable to fluidization. Overnight the senior chemists were talking knowledgeably of "slide valves," "strippers," "regenerators," "standpipes," and "suspensoid"; and within a very few days they would go on to "bed viscosity," "Nusselt number," and "voidage at incipient slugging." The Library was promptly stripped of all books remotely touching on fluidization, and even the "F" volume in the sacrosanct Kirk-Othmer Encyclopedia disappeared from the reference shelves for several days. Miss Addie, the librarian, posted stern notices on all bulletin boards. Overnight, the volume was returned, sheepishly, by Andrew Bleeker.

Bleeker didn't fight the new trend. He knew it would do no good, and besides, the new thinking both intrigued and amused him. It intrigued him because it was a new and potentially useful approach, not only for a silamine design, but also for a number of other research problems of long standing. It amused him because he knew from long experience that a number of project shifts would now be inevitable. Programs on supersonic reaction initiation, free radical mechanisms, photocatalysis, and selective adsorption would be quietly, even surreptitiously, phased out. In some ways, his people reminded him of a cohesive group of teen-agers, with the same compulsion to conform in dress, thought, and behavior. The minority that he would force to continue on their old projects would probably be apologetic to the lucky ones launching into the new fluidized techniques. Bootleg runs meanwhile would become the order of the day, with glassware fluidizers of all shapes and sizes springing up all over the lab like wildflowers in May. He made a mental note to contact the Budget Committee immediately for a decent bench unit. He had a good excuse. Sasanov had already opened negotiations from Czezhlo. They'd be needing some good bench equipment in a matter of days.

In fact, to handle the expected volume of requests for bench runs, he might need as many as three columns-- stainless steel, of course, twelve feet high, and heavy. They'd need a basement foundation. There was just the place for them, downstairs in Building V. He'd call it the Fluidizer Bay.

* * *

Two days later the Safety Committee investigated a minor explosion in Silicon Compounds. There was no damage, beyond a wrecked hot plate, and nobody was hurt. As the Committee noted in their written

report to Andrew Bleeker, the explosion was the expected result of an experiment by Pierre Celsus, done in the hood behind shatterproof glass, all in approved and careful fashion. One gram of fulminate had been heated on the hot plate to 145°C., then detonated-- by touching it with a feathertip.

Explosions, controlled or otherwise, made Bleeker uneasy. He called Bond on the phone. "What fulminate was it?" he demanded.

"I don't know," said Bond candidly.

"Find out," said Bleeker.

The group leader called back in a few minutes. "It was gold fulminate." He sounded uncertain. "It's not a true fulminate, not a salt of fulminic acid. It's made by reacting auric oxide, water, and ammonia. When dry, it's highly unstable... detonates by light friction."

"Why was Celsus working with it? How does it relate to anything in the silamine program?"

Bond coughed. "I asked Celsus about that-- "

"And?"

"It has something to do with a new silamine catalyst." Bond sounded defensive.

Bleeker started. "Good heavens! Gold fulminate... a *catalyst?*"

"I don't think so. But I'm not really sure. As Celsus explained it, the real catalyst won't be gold, but rather one of the rare earth oxides. Terbium, I think. I know this sounds rather strange, Andy. It's probably my fault for not understanding Celsus." Bond's voice trailed away unhappily. "Sometimes, it's difficult to communicate with him."

Bleeker paused. Finally he said, "Let me know if you find out anything further."

After he replaced the phone, Bleeker began swinging his chair in slow oscillations, eyes narrowed and brows knotted. "nobody," he thought grimly, "ever tells me anything." He swung around toward the window. "And why? Because nobody in this lab ever tells anybody anything. And it's getting worse every day. No organization. Maybe Sasanov was right." He swung back around and stared through his open office door. As he peered, he caught a serio-comic vision of the lights going out, one by one, all over the lab. He suppressed a shiver.

* * *

From test tube to commercial plant at Hope Chemicals classically proceeded through four well-defined steps. Step one was "in glass"-- generally with a glass one-liter reaction vessel with a train of glass accessories, all stock equipment, with parts out of the cupboard. Celsus' first silamine run had been "in glass." Step two was the "bench unit." Nearly all parts were metal, and many were specially designed or ordered out of the special chemical apparatus catalogs. The bench unit was supposed to "prove out" and "optimize" the glass setup. The pilot plant was next. From its operation the engineers were able to draw up thermodynamic data and could analyze feed, recycle, purification, and effluent streams, all of which were absolutely essential in designing a commercial plant, which was the fourth and final step. Each of these steps was vital and none could safely be omitted. They were links in a chain. If one failed, the whole sequence of events came to an abrupt halt, never to be revived. Although each phase was essential, everyone at the lab, from Bleeker on down, knew very well that one certain phase was more essential than the others. For sad history had shown that if a project were going to die, it nearly always picked the bench unit for its coffin.

In his Monthly Project Report on his work "in glass," the less experienced chemist might report loftily that, although yields in glass were perhaps a little low, they could be expected to improve with the adequate temperature control available in a bench unit; or that by-product contamination would not be a problem in a bench unit, where a purge would operate continuously. And then the bench unit would be built, and he would have to eat his predictions on a stainless steel platter. So chemists at Hope were generally quite chary of predicting the performance of a projected bench unit. At best, they would answer Andrew Bleeker's inquiries with, "It seems to have a good chance." "Certainly worth a try." "Something similar worked at Du Pont."

Bleeker complained about it to Patrick. "Weasel words! Nothing but weasel words! You'd think they

were a bunch of patent lawyers."

Patrick grinned slyly. "Not all of them. Look up Celsus' Project Report on Silamine."

Bleeker did. His eyes nearly fell out of his head.

He read: "Yields were poor in glass because the process was necessarily limited by the heat input. The reaction is extremely endothermic, requiring a thermal outlay heretofore attainable only in nuclear reactions. In the existing setup the necessary heat cannot be supplied through the reactor walls because of the low heat transfer coefficient available for a fluidized system. The same difficulty applies with respect to internal heaters. Nor can the requisite heat be supplied by pre-heating the ammonia, since NH_3 cracks back to N_2 and H_2 at 600-700° C. The only way to provide the necessary heat is to create it *in situ* on the silica gel particles. This may readily be done by adding terbium oxide with a little xerion to the silica. This system will, in fact, create a substantial thermal excess, requiring a cooling jackets on the reactor. At the end of the run-- disappearance of terbium-- spent catalyst, while still wet must be immediately discharged into alkahest. Yield of silamine, based on SiO_2, should be substantially quantitative."

Bleeker shook his head vigorously, like a dog shedding water. He studied the report again, as if hoping the words would rearrange into sentences he could understand. But there wasn't any change.

The Research Director reflected a moment. Should he ask Celsus to report and explain? Celsus, being a senior chemist, had no group leader, and instead reported directly to him, Bleeker. Yet, somehow, he felt that any such conference could only lead to further confusion. But now a crafty thought occurred to him.

The Patent Department. It was the job of the patent attorneys to understand these new inventions. They were supposed to file on important cases within a few days after the thing had been reduced to practice. The application had to explain the invention in intelligible terms, or else the Patent Office in Washington would rule the disclosure fatally defective. There was certainly no dishonor in asking the attorney in charge of this invention to step into his office and explain Celsus' report. It would be like the judge in a trial asking the court reporter to repeat some testimony the judge had missed. And no need to bother Con Patrick.

He buzzed his secretary: "Miss Sally, look at the Patent Department organization chart and get hold of the attorney responsible for Pierre Celsus' work. But don't bother Mr. Patrick."

As events developed, this was a mistake. While the Patent Department organization chart clearly showed that Alec Cord handled the inventive affairs of Pierre Celsus, Cord happily informed Miss Sally that all that had changed. Somebody else was now responsible. Additional phone calls established the apparent fact that, for the moment, at least, nobody was writing cases for Celsus.

This puzzled Bleeker. He knew that Patrick loved order, organization, and the predicable flow of life, and that when Patrick had taken the Patent Department of Hope Chemicals, he had drawn an organization chart to define precisely the areas of contact of each of his attorneys with each group in the Research Division.

This was all very true; in fact, during the early days Patrick had kept the chart current, showing every assignment change. But Patrick had been in office less than a year when the Nitrogen Group had their breakthrough in acrylonitrile, and it had been necessary for him to reshuffle all Patent Department assignments drastically until he could get the Nitrogen docket back to normal. While the dust was settling, Research formed the new Polymer Group, and the Budget Committee-- after much muttering and review of Patent Department efficiency-- finally let Patrick hire two new attorneys for the new Group. Meanwhile, Foams and Fibers were screaming, so one of the new polymer attorneys was assigned to them. And then Nitrogen insisted that Cord be assigned to them permanently, because he was the only man in the lab who could beat Dr. Fast at the chessboard-- it being well known that Fast would talk about his inventions only in a losing position. The second new polymer man got clewed in to Mining and Metallurgy on an emergency job when it was discovered that he had worked summers on a barytes washer in Missouri. When he finished the emergency case, M & M refused to release him.

And that was when Patrick stopped revising the chart. From then on he kept everything in his head,

like a general in the midst of shifting battle lines. He developed an exquisite facility in matching attorney to project, project to attorney, attorney to inventor. His manning assignments never failed. Except for Pierre Celsus. Nobody could understand Celsus. His few cases had been written personally by Patrick.

Bleeker discovered all this in slow fragments. Then he put in a call for Patrick.

* * *

After ten minutes in Bleeker's office, Patrick finally convinced him he knew no more about silamine than the research director. Following which, point by point, sentence by sentence, they went through the Project Report together.

"And listen to this," groaned Bleeker. "He's proposing some kind of dispersant for the residual silica."

"Why would he need a dispersant?" asked Patrick. "Why not just flush it direct to solids disposal?"

"I haven't the faintest idea. But that's not my point. Listen to what's in it:

Vitriolated tartar

Butter of antimony

Libavius' fuming liquor

Sal mirabile

Magnesia nigra...

And the whole thing, he calls"-- Bleeker looked at the report-- "the *alkahest.*" He looked up helplessly at Patrick. "*What* is the man *talking* about?"

"Alkahest?" Patrick looked troubled.

"Maybe I'm not pronouncing it right."

"No, you had it right. Except-- I thought..."

"You thought what?"

"The term hasn't been used in earnest in over five hundred years. It's an alchemical term. It means 'universal solvent.' It dissolves anything you put it in."

"Alchemical? Solvent?" Bleeker looked blank.

"It might really dissolve the silica," ventured Patrick. "although I can't see any reason why it would be necessary, technically."

"Alchemy..." muttered Bleeker. "What century does he think this is?" His chair began to swing slowly. "That man needs help. He ought to see Siegfried Walters."

"I understand he's been in therapy with Walters for some months," said Patrick. He added quietly: "Does this mean you won't approve the bench run?"

"No. It doesn't mean that. I'm going to approve it. In fact, the Board of Directors insists that we develop a process we can sell to the People's Republic. That twenty-five-cent royalty has them hypnotized. Anyhow, the new Fluidizer Bay will be finished in a few days. The runs can start then. Put one of your best men on it. If it works, get a case file as soon as you get that madman translated into basic English."

"Of course, Andy."

"And now," said Bleeker, "what do I do with Celsus?"

"Nothing," said Patrick. "Leave him alone. Maybe you and I don't have what it takes to understand him."

"Nor does anyone else," declared Bleeker. "And that's the whole problem. Any chemist in corporate research has got to be one hundred per cent clear to the rank and file that have to translate him into a tonnage plant. His thinking has to be something our run-of-the-mill people can take and break down into its elements, its unit processes."

"I think he's some kind of a genius," said Patrick stubbornly.

"Maybe he is, but in this business, his kind of genius is not an asset, it's a disaster. What happens when he explains something? Do you understand it? You do not. I don't understand it. Nobody understands it. A few days ago he made the silamine process work for the first time. Four separate teams had already given up. And how does he explain it?"

"He just needed one seed molecule to initiate it," said Patrick. He added, quickly, "And don't ask me where he got it."

"But I *will* ask you. Where *did* he get it-- a thing that had never before existed?"

Patrick shrugged his shoulders helplessly.

"Maybe you're right," said Bleeker thoughtfully. "Perhaps we're not mentally equipped to understand him. Perhaps we should examine our own capacity for comprehension of novel technology. It's like Willard Gibbs and the phase rule. He published in 1876, but nobody in America was capable of understanding him until Ostwald explained him in German. For a long time, if you couldn't read German, you couldn't understand the phase rule. Is something like that happening here? Maybe *we* can't be communicated with. Maybe *we* need to be examined. There are firms that do that, you know-- management evaluation firms... research evaluation firms."

Patrick nodded absently. "Suppose he has something the rest of us don't have-- but we just won't let him use it. We don't know *how* to listen to him. We see him as a freak. Are *we* freaks to him?"

"But *alkahest,* Con, *really.* I suppose next we'll get a Project Proposal for making gold." He shook his head. "All I remember about alchemy was my undergraduate course in History of Chemistry, at State U. Frederick of Würtzburg reserved a place of distinction, a position of great elevation, for each and every alchemist who visited the realm."

"What was that?" asked Patrick.

Bleeker said grimly: "The highest gallows in all Europe."

* * *

When Patrick had gone, Bleeker sat swiveling slowly at his desk for a long time. Was Sasanov right? Maybe the lab *was* a little disorganized. *Something* was wrong, out-of-joint. Was it Celsus? The administration?

Bleeker prided himself on knowing everything that went on in his laboratory. (He almost did know.) He knew who was coming up with the ideas that might be commercial five or ten years from now. He knew the misfit who would have to be reshuffled. But no matter how bad the incompatibility, in the past his operations were big enough to find something which, if it did not completely match the talents of the transferee, at least kept him at something useful to the company and to himself.

But now, for the first time in thirty years, he felt truly baffled. Sasanov, he suspected, would never encounter this problem, or, if he did, it would be solved with prompt and drastic measures.

Bleeker chose a different way, gentler, but equally definitive.

He buzzed his secretary. "Miss Sally, get me Arnold Gruen, Gruen Associates," he said grimly.

* * *

Later, he explained it all to Patrick.

"Gruen Associates is unique in several respects. They're the oldest in the business, for one thing. For another, right now they're the only management-survey group equipped to look at research labs, although I dare say it's just a question of time before they lose *that* monopoly, what with so many billion dollars being spent on research in this country every year."

"Gruen is unique, you were saying?" nudged Patrick gently.

"I was explaining that," said Bleeker testily. "Well, Gruen brought in another outfit to study them, show them how they could tighten up their analysis techniques, rely on smaller samples, reduce study time and the overall cost of their surveys. Sort of like a psychiatrist getting himself psychoanalyzed, so he'll be a better doctor. Well, Gruen had this done to *them,* and they seem to be the only *surveyed* surveyors in the business. That's how they developed their 'Unit Profile,' where they pick one man who has nearly all the faults of the research laboratory they're trying to correct."

"But wouldn't it be *still* better," said Patrick blandly, "if we could be surveyed by a group who had been straightened out by Gruen? Then we'd be surveyed by a *surveyed* surveyed group. Hope uses only

the very best, you know."

"The point came up." Bleeker was equally bland. "But good sense prevailed."

Both men were silent a moment. Each seemed to be waiting for the other to speak. Patrick knew then that the same thought must be on Bleeker's mind. So Patrick, being the junior, said it. "What happens when they find Pierre Celsus?"

* * *

The first session with Gruen Associates took place in the Executive Dining Room, an intimate, expensively appointed room down the hall from the large lab cafeteria.

Patrick had long ago noted that Bleeker liked to conduct important discussions at the luncheon table. The theory was that Yankee pot roast following cocktails loosened a man's tongue and evoked basic truths, or at least turned up any latent disagreements, all of which might require excessive time and money to discover in other ways. Furthermore it was the simplest and quickest way to get to call a man by his first name, and everybody agreed this helped communication and delayed the development of paralyzing differences of viewpoint. But whatever the reasons, Patrick always liked a good meal with experts in their own fields.

While coffee was being poured, they finally got down to business.

"I want to make one thing clear," said Bleeker. "This is not a criticism of anyone, except possibly myself. Arnold Gruen and his people are here to determine whether I can improve the operation of the lab. Arnold's staff, Joe and Ben, here will come in, starting tomorrow, and they'll be talking to a number of us. They'll talk to all our group leaders and to a number of our chemists and technicians at all levels. They'll make appointments ahead of time. Work them in, somehow. Within a few weeks, Arnold will put together a report and then I'll decide whether we ought to change some of our procedures. Arnold, perhaps you can explain the mechanics of your survey, exactly what you intend to accomplish, and how you will do it."

"Of course, Andy. It's really quite simple. We at Gruen have one basic objective-- increasing the dividend to the shareholders. We continue to exist because we have been able to help our clients meet this objective. Now, there's a fundamental corollary to our main objective, and that is, that industrial research, such as you have here at Hope, exists for the sole purpose of making money for the company, and to make this money as quickly as possible. To accomplish this, every man in the lab must recognize that he is part of a *team.* No man in a modern laboratory can work alone. He must recognize roadblocks instantly, and call in help immediately. He must be able to analyze and explain, or his project will bog down. He must *communicate.* That's the key word: *communicate.* And it must be *instant.*" He turned to Patrick. "Con, your department has a vital function in all this. The life of a United States patent is seventeen years. Our studies show that, up until recent years, only the last five to seven years of a typical patent are of any use in protecting a basic new invention. Why? Because it so often takes ten to twelve years to proceed from the first experimental work to the first commercial plant. One of our aims is to cut this idle patent time. We do this by cutting the development phase to three years." Gruen took a sip of coffee and smiled. "Do I hear incredulous murmurs? I repeat: three years. It can be done. And it's all in *communication.* Everybody knows what everybody else is doing. Problems will be recognized instantly. But here I am, still talking in generalities." He turned to Kober. "Ben, will you explain what you and Joe Marel are going to do, starting tomorrow?"

"Certainly, Arnold. My function-- and Joe's-- is to interview some of your key people. We've already drawn up a list. This was based on a study of several hundred project reports written by approximately fifty different bench chemists, senior chemists, and group leaders. Con, we'll include one man in the Patent Department, probably you. We will interview each of these people. As a result of these interviews we will develop a further sampling of six or eight chemists who offer most in the way of a challenge to the Gruen technique. We will then hope to be able to boil this list down to one man. This man, if our survey is valid, will constitute a walking summary of all that we hope to recommend be corrected here."

Arnold Gruen looked over at Patrick. "You lawyers have your 'reasonable man'. We are looking for

the 'unreasonable man': a compendium of errors-- our Unit Profile."

"Profile?" asked Patrick. "You mean something like the Bernreuter or Thurstone personality profiles for executives?"

"Something like that," said Gruen. "Except that the Bernreuter profile provides a *positive* model for the up-and-coming executives of our large mail order houses-- a real inspiration, too, if I may say so!-- whereas the Gruen profile is *negative.* When we establish it, we offer it to the client as something to be shunned by all right-thinking employees. Another difference is, the Gruen profile is personified; it is drawn from one actual man, a case history. In fact, our main effort in the study is to find that man." He nodded toward Bleeker. "And when we find him, our bill for services will follow shortly."

* * *

Patrick was eternally amazed by his women attorneys. Marguerite French was a case in point. Hired fresh out of State U. with straight A's in chemistry, he had first put her on novelty searches in the Patent Office in Washington. She had picked up the patter almost overnight. ("I'll be in the stacks tomorrow, Mr. Patrick, flipping the bundles for that new polymer." But when she dictated her search report, she had the good sense to call it "information retrieval.") She soon knew the Patent Office Search Manual by heart, and better still, most of the chemical patent examiners on a first-name basis. They told her what subs to check in the Search Room and pointed out unofficial "shoes" in their own offices that cut her search time to a minimum. Examiners had been known to hover over her shoulder, helping her through their soft copies, to find a "dead reference."

A couple of years after hiring her, Patrick learned by accident that she had passed the Patent Agent's exam-- the dreaded patent Bar-- on her first try (Patrick had failed it the first time) and was halfway through law school at night. That was when Patrick started her on writing patent applications. In good time she had finished law school and had become a full-fledged attorney, in most respects as good as any of his men, and in one particular respect she excelled any man in the department. This was her ability to work with certain of the more refractory male chemists. Whatever their inability to write an intelligible project report, she somehow was able to analyze, define, and summarize the most involved reactions that any of them ever brought forth. When working with her, they suddenly became expressive, articulate, even voluble. ("Maybe they're all in love with her," mused Patrick. But that was too simple. "She's a kid sister to them," he thought once. No, that wasn't it, either. "She appreciates them." Yes, he felt he was getting warm.)

Well, no matter what it was, he had made up his mind as to who was to be assigned to Pierre Celsus. If Celsus could be persuaded to talk to anyone, he would talk to Marguerite French.

* * *

Patrick drew the structural formula on his office blackboard. "Silamine. As you probably know, Celsus' new synthesis is somewhat analogous to the commercial process for making urea from ammonia and carbon dioxide, except that we use SiO_2, instead of CO_2. In other words, we react ammonia and silica, and we get silamine and by-product water."

"It's strange that it should react at all," said Marguerite. "Silica is one of the most unreactive oxides known."

Patrick smiled. "That's the general impression, all right, and that's why we think we may have something patentable. Actually, we don't use plain old silica sand-- the low surface area makes it too inactive. We use an extremely porous, high-surface-area silica, five thousand square meters per gram. That means a thimbleful-- if you could spread it out-- would cover two or three football fields. And this means that it is thousands of times as reactive as sand, because a given weight of high-surface-area silica can make contact with thousands more ammonia molecules than plain sand."

"I gather there's more to it than that. Certainly ammonia and high-surface-area silica have been brought together before without making silamine."

"Yes, Marguerite, as you very well know, there's more to it than that. Firstly, the silica contains a new catalyst, terbium oxide, one of the rare earths. Celsus proposed this after his first successful run, back in Silicon Compounds." He looked at her. "You were there."

She replied noncommittally. "Yes, I was there."

Patrick sighed. She was not going to volunteer anything about the stopwatch. In a little while, he'd have to ask her.

He continued. "Next, Celsus adds a thing he calls 'xerion'."

"'Xerion'?"

"Don't ask me what it is. Some kind of co-catalyst, I think. It's your job to find out. Celsus contends his new system provides extremely high temperatures right in the fluidizers, so much heat, in fact, that the columns have to be cooled. He cools by heat-exchanging with incoming liquid ammonia, which goes next to the base of the columns, where it serves as both reaction gas and suspending medium for the silica gel."

"What happens to the by-product water?"

"Some gets stripped out with silamine product, but some stays on the silica. Celsus seems to think it's very important that some stay on the silica. He wants the silica to be 'wet' throughout the reaction. I don't know why. Again, this is something you should ask him about. Also, he runs the residual silica into a tank of something he calls 'alkahest'-- some kind of solvent or dispersant. Find out why the stuff can't simply be dried and carted off to waste. Is it dangerous, or what?"

Marguerite looked up from her notebook. "There's still one very basic thing I don't understand. This terbium-xerion thing... how does the combination make heat?"

Patrick shrugged his shoulders helplessly. "You'll have to ask Celsus."

"Do you think he will tell me any of this?"

"I don't know, Marguerite."

"What about his Project Reports?"

"He's made several. They're all different. But don't try to reconcile them; it's impossible. So it boils down to this: Celsus knows, or thinks he knows, how to make the thing work. But he hasn't been able so far to explain it to his own people. This is where you come in. Defining technical data is your job, as a patent attorney. You're better at it than his brother chemists. Also, you'll bring a new outlook."

Marguerite French closed her notebook. "Is that about it?"

"One more thing." Patrick eyed her speculatively. "The other morning, at that first silamine run, you had a stopwatch. What was all that about?"

The girl hesitated. "I don't think you will believe me."

"Tell me anyway."

"I timed the reaction. With the stopwatch. All I had to do was calculate the space velocity of the ammonia. From this you get the time it took to move the first silamine product from the reactor to the collector, where it immediately gave the picrate test. This was 38.6 seconds. When Pierre called on the silamine to exist, I started the watch. When the picrate showed, I stopped it." She opened her purse. "I've been carrying it around-- it's still stopped. I don't know what to do with it. Suppose you keep it a while." She handed the watch to Patrick. He took it dubiously. It read 38.5 seconds. Experimental error? Not, he suspected, Pierre Celsus'.

"I think it was telekinesis," said Marguerite.

Patrick studied the girl with widened eyes. Her face was pale, but she was staring back defiantly. The man tugged at his mustache, his brows creasing. He remembered Celsus' behavior at that now notoriously successful run, crooning, whispering, exhorting, caressing the flask. Like a "hot" gambler talking to the dice. And then the throw. Some gamblers were supposed to have this power, this control of inanimate matter. TK. Psi.

He said hoarsely, "Is it possible?"

"I think it is. With some chemists. Pierre isn't the first. He won't be the last. If he's different, it's only because he can do it better, and because he knows what he can do."

Patrick's mind raced ahead. The implications... were staggering. He suppressed a shiver. "But that isn't

chemistry. It isn't science. It may even be against the law."

"It was the *first* chemistry," said the girl curtly. "It is alchemy."

"Now wait just a minute," protested Patrick, struggling back to former ground. "If Celsus were a real genuine alchemist, he'd be making gold, wouldn't he? Is he making gold? Of course he's not. But again, suppose he could make gold, how would you explain it to the United States Mint and the FBI?"

"You miss the point entirely," said the girl. "He's not trying to convince anybody he's an alchemist. It's the other way around. He's trying to *hide* it. He wants to be just a plain ordinary twentieth-century chemist. If he could make gold, he'd keep it a secret. So it's pointless to argue that since he hasn't made any gold, he's not an alchemist. The alchemist uses his powers to supply the requirements of his patron. In the fifteenth century, the big requirement was gold. In a modern laboratory, it could be anything from plastics to lasers to silamine. And finally, what's so wonderful about gold? Today dozens of fine chemicals sell at more per ounce than gold."

The man groaned. "But the patent application... what will the Patent Office do when we file an application an alchemical process? And how will the main claim read? Can we say, 'In the process of reacting silica and ammonia to form silamine, the improvement comprising telekinetically first forming one molecule of silamine, thereby to autocatalyze the reaction'? How is that going to sound to the Examiners in Class 23?"

"It is sufficient if those skilled in the art can reproduce the invention," said Marguerite. "Maybe that means other alchemists."

Patrick fought for control over the gurgle rising in his throat. "Others? God forbid!"

The girl waited in quiet sympathy.

At last Patrick said lamely, "Well... see what you can do-- "

When Marguerite had gone, Patrick sat staring at the pigeonholes of his desk and tugging glumly at his mustache. There wasn't anything he could do. He couldn't go in to Andrew Bleeker and say, "Andy, your man Celsus has TK. He's a psi. And that's why he got silamine, and that's why his processes are not reproducible." Patrick shook his head sadly, remembering what Bleeker had said to the applicant from California who claimed he had seen a flying saucer.

The intercom shattered his musings. Joe Marel of Gruen wanted to interview him.

* * *

Joe Marel stared at the rolltop desk for several seconds.

Patrick said finally, "You wanted to review some Patent Department procedures, you said."

"Oh, of course. Forgive me for staring. I've never seen anything quite like it-- the desk, I mean."

"Biggest phony in the lab," said Patrick genially.

"I wouldn't know. Well, suppose we start with your infringement opinion on the new silamine process."

"Certainly."

"You say here, 'This patent does not present a serious risk of infringement.' Do you mean it is not infringed?"

"Not exactly. No one can predict with certainty what the courts will do with a given patent. It's always a guess. We simply try to assess the degree of risk."

Marel looked at him curiously. "You mean, then, it's *probably* not infringed?"

"In a sense, yes. But bear in mind, it's not a thing that admits of calculating percentages."

"But I gather that when your management reads that, they will understand that the patent situation is in the clear?"

"Well, not inevitably, and not necessarily. But it very well *could* have that affect."

Marel was silent a moment. He ran his finger around his collar, then continued. "Well, then, you go on to say, about another patent, 'At the appellate level, the defense of patent invalidity would probably be affirmed.' Does that mean the patent is invalid?"

"No, here again we simply try to crystal ball what the courts will do with a given patent question. No

lawyer can advise his client whether a patent is valid or invalid. Only the courts can do that. If the courts have not spoken, then at best the lawyer can only state how he thinks the courts would rule, if and when they should get the question. And you realize, of course, that the courts in different federal circuits could come up with different answers. The patent could be held invalid in Maine, but valid and infringed in California. And then there are other reasons we might not want to come right out and say a patent is invalid. For example, some day we might buy the patent, and then we might want to continue the litigation, except that we'd now be on the other side."

Marel blinked his eyes rapidly. At last he said: "Then why not just pick up the phone and tell whoever in management wants to know? Why have a written opinion at all?"

"Oh, there has to be a written opinion-- something for dozens of people in Hope management to look at, as well as people outside. Banks and insurance companies that provide the financing for the proposed new plant-- *their* lawyers want to see the patent opinion. Now, lawyers have their own special language when they talk to each other. They never say 'yes' or 'no.' If our lender's lawyer gets an opinion that says 'yes' or 'no,' he might regard it as incompetent, and then we might not get the financing. The same thing is true for our own sub-licensing. When we sell the process for use in England or West Germany or Japan, or wherever it may be, we have found that *their* lawyers place more confidence in one of my twenty-page opinions than in a categorical clearance from the President of Hope Chemicals."

"I see. I mean, I *think* I see. You mean you can't just say 'yes' or 'no'...?"

"Exactly," said Patrick. "Too deceptive, by far. Wouldn't be cricket." He became expansive. "'Yes' and 'no' are the two most dangerous words in the English language. Each inherently means something that is by definition impossible. Each, as ordinarily used, is accompanied by a protective cloud of implied qualifying conditional clauses. Problems arise when the speaker and his listener fail to achieve a coincidence in qualifications implied and qualifications inferred."

Marel shifted nervously.

Patrick continued, "Now that you are studying patent opinions, perhaps a little basic theory is in order. To start with, what is the object of a good patent opinion?"

"Tell me," said Marel.

"The object is," said Patrick, "that the opinion turn out to be correct, no matter what happens after it is written. Is the company sued for infringement? The opinion says this is a possibility. Do we lose the suit? We said that our chances were better than even. They were, but we provided for the possibility of loss, because 'better than even' *could* mean only fifty-one percent-- in other words, we should expect to lose nearly half of such cases. But then we take a final appeal, and win. In the opinion we find our conclusions apply to decisions at the appellate level. And of course, there's a strong suggestion in the opinion that we settle on a reasonable basis if we get into real trouble."

Marel stared at the patent director in fascination.

Patrick continued smoothly, "In other words, as history unfolds, day by day, and month by month, you should be able to reread the opinion and find that nothing in it is inconsistent with subsequent events. In this sense, it should resemble a prophecy out of Nostradamus, which becomes completely clear only *after* the occurrence of the prophesied event."

"I guess that's why most people find a patent opinion hard to read," said Marel.

"Granted," said Patrick. "However, let us not confuse readability with clarity. Actually, there's generally an inverse relationship: the more readable, the less precise; a real literary masterpiece is so honeycombed with ambiguities as to be incomprehensible. Take Coleridge's Kubla Khan. Would you consider that a masterpiece?"

"Certainly."

"But can you tell me where the dome was going to be built?"

"The dome? Oh yes, the pleasure dome. How does the thing go?"

Patrick quoted from memory:

"'In Xanadu did Kubla Khan
A stately pleasure-dome decree:
Where Alph, the sacred river, ran

Through caverns measureless to man
Down to a sunless sea.'

"Now, then," said Patrick, "where was the dome to be built?"

"In Xanadu," said Marel.

"Then where was Kubla Khan when he decreed the dome?"

"Oh. In Xanadu? I see the problem. Well, then the dome must have been on the Alph River."

"It's a long river. Where on the river? In the caverns?"

"I shouldn't think so."

"Nor on the shores of that sunless sea?"

"Probably not."

"You see my point, Joe. In the arts, when a thing is incomprehensible, it helps it to be a masterpiece. But not in the law. If a lawyer had written 'Kubla Khan,' these ambiguities would never have cropped up. He would have made the thing crystal-clear."

"No doubt," smiled Marel. "Con, what does Andy Bleeker do when he gets your patent opinions? Say, like this silamine opinion?"

Patrick looked at Marel carefully. He said: "You raise a very interesting point. He's a very busy man, you know... excuse me, I think this is Bleeker on the intercom. No, don't leave." He flipped the switch. "Yes, Andy?"

Bleeker's voice came in strongly. "Con, this silamine opinion... I don't know when I'll get time to go over it thoroughly. Just tell me whether we're clear or not."

"We're clear, Andy."

"That's what I thought. Thanks, Con."

The intercom went off. Patrick looked at Marel. "It was a masterpiece," he said coolly.

* * *

An hour after Marel left Patrick, the patent director got another call from Bleeker.

"Con, I thought you'd be interested. Marel and Kober are sitting here with me. They think they've found their man for the Profile."

"So soon? I didn't realize they'd already interviewed Celsus."

"They haven't. But they see no need to continue the study."

"Why that's fine... I guess." Patrick was puzzled. "Who is he?"

He heard Bleeker exhale slowly.

"It's confidential. However, Con, I'm suggesting to Kober and Marel that they skip the patent department in their survey."

"I'm sorry to hear it, Andy. We'd hoped to get a lot of help from them."

"It could run into a lot of time and money," said Bleeker., "also, I'm not sure they have the necessary background to study... a patent man."

"That's a shame," said Patrick. "I liked Marel."

"He likes you, too, Con. In fact, you... ah... fascinate him." Bleeker's voice seemed to lose strength.

* * *

"Will you explain to me, Pierre, why you use so many words that are not in the dictionary?"

Celsus looked at Marguerite in surprise. "Not in the dictionary? Such as what?"

"Such as 'xerion'."

"Hm-m-m. Let's see." Chin in hand, Celsus studied the volumes in his little book case. "Let's try this one." He pulled down a worn, leather-clad tome and opened it carefully. The pages seemed yellow and brittle, and many had evidently been patched with transparent tape. "Doesn't seem to be here." He flipped back several pages. "Let's try it by the modern name, 'elixir'. Ah, just as I thought. 'Elixir' is from 'al iksir,' Arabic, and 'iksir' is from 'xerion,' Greek. That's the Alexandrine Greeks, of course, and I'm

sure *they* got it from the Egyptians." He looked up brightly. "So 'xerion' is the same as 'elixir'. I'd forgotten they'd changed over, after Avicenna."

"May I see the book?"

"Sure." He handed it over.

Alchemyia collecta, read Marguerite, looking at the frontispiece. "By Andreas Livau." Her eyes widened. "It was printed in 1595... and it's all in Latin."

"Why, yes. One of the old standards. Still very useful, though."

"It must be worth a lot of money." She handed it back slowly. "Now we're down to 'elixir,' at any rate. What's 'elixir,' Pierre?"

"Why, I thought every chemist knew *that,* Marguerite. 'Elixir' is the exactly correct union of the four elements: the body-- as represented by copper and lead; the spirit-- as represented by mercury; the male element; and the female element. Some of the philosophers added gold, but I think that rather begs the question, doesn't it?" He looked at her expectantly.

"Pierre, you're making me feel very stupid. What does it *do?*"

"Why, it causes the reaction, of course."

"You mean it's the catalyst?"

"Well, not exactly. It would be more accurate to say it causes the silicon and terbium to react to provide the necessary reaction heat. The atomic number of silicon is fourteen, terbium is sixty-five. Add them together, and what do you get?"

"Seventy-nine?"

"Quite right. Terbium, at sixty-five, is only fair. It's not even a prime. Seventy-nine is perfect. It's a prime, a favorite of Pythagoras, and even though it's a rather low isotope, it's a sure thing for quantitative yields of silamine. Does that clear it up?"

The girl sighed.

"I like talking to you, Marguerite," said the man. "I'm glad Con Patrick has finally got a patent attorney who can understand real chemistry."

Marguerite looked at him quizzically. "Pierre, I'm glad you like me, because I like you, too." She measured her words carefully. "Would you come over to my apartment for supper some evening?"

The man looked at her in amazement.

The girl continued hurriedly. "I'm a wonderful cook. We could talk and play records. But you don't have to, of course..."

"Oh, no-- it's a wonderful idea. I've never been to... I mean, I never had an invitation before... What I mean, is, I'd love to. When?"

"How about tomorrow evening?"

"But that's the first shift run on silamine."

"Did they ask you to be there?"

"No, but I think I ought to be."

"Pierre, there's a rumor going around. Ben Kober is trying to persuade Mr. Bleeker to let him make that first run, all by himself."

The man frowned. "You mean... they don't want me to be there at all?"

"They don't mean it that way, Pierre. They don't mean to slight you. Ben simply wants to check out the process. He wants Analytical to stay open all night, for sample analysis."

Celsus caught his breath. "Samples of what?"

"Why, silamine product, I suppose. Is anything wrong?"

"No, not if that's all they're doing." He exhaled slowly.

"There's no danger in any of it, is there?" insisted the girl.

"Not if they follow the flow sheet."

"I'm sure that's exactly what they intend to do. See you tomorrow night?"

"Sure thing."

* * *

The next day Patrick got another call from Bleeker, this time to report to Bleeker's office, to review a problem with Ben Kober of Gruen.

As was his way with anything unpleasant, Bleeker got to the point at once. "Con, the Gruen people"-- he nodded toward Kober-- "have made a tentative selection for their Unit Profile. This time I agree with them."

Patrick pulled out his meerschaum, filled it expertly from his pocket pouch, and fired up. He puffed and waited. He did not intend to make it easier for the older man.

Bleeker took this all in. He smiled faintly. "It's Celsus."

"But tentative?" said Patrick.

Kober answered. "We're pretty sure. But we want to do one more thing. We want to take one of his projects and make it work all by ourselves, simply by following his written instructions. He will not be present."

"Have you picked a project?" asked Patrick quietly.

Kober looked at Bleeker.

"There's really only one," said the research director. "Silamine."

"In the new Fluidizer Bay?" asked Patrick.

"Yes."

"How am I involved?"

"Your man in the patent department and Ben Kober will both be trying to develop the identical information. Each will be trying to extract from Celsus the explanation of the silamine reaction. But there's a basic difference. Your man-- "

"Marguerite French," murmured Patrick.

"Ah, yes, Miss French. Good man. Well, she'll be talking to Celsus on the theory he can and will explain the process. Kober will be talking to Celsus on the theory Celsus can't or won't explain anything. Each will be a check on the other. Both cannot be right."

Patrick groaned inwardly. He could not say it, and yet it had to be said, here, now, before this thing got out of hand. "Just suppose it's something not in the books-- something Celsus can do but can't explain to anyone else how to do."

"Like what?" said Kober.

"Like telekinesis!" blurted Patrick. "Psi..." He blushed easily, and he realized with hellish discomfort that he was blushing now.

Kober stared at him in unabashed amazement.

Bleeker swiveled mercifully around and looked through the office window.

Kober gave a short embarrassed laugh. "I don't think you need me anymore. If you'll excuse me..." He left quickly.

Bleeker turned back to the patent director. He began swiveling in slow unease. "Con, I appreciate your telling me your views, especially in front of Kober." The monotonous oscillations continued. "However, please understand me. I cannot accept psi as an explanation. That's as bad as alchemy; we've been through all that. To put the matter even stronger: even if what you say is true, I couldn't accept it as any part of our normal research effort. Maybe psi is all right for esoteric seminars at the universities, where they don't really bother anybody. But it is not all right in a modern chemical laboratory. How could we put twenty million dollars in a silamine plant, when start-up depended on the availability of Pierre Celsus? And suppose we went through with this plant design and license with the People's Republic? Could we give plant guarantees? What if we truly did have to have some hocus-pocus from Celsus to get the plant on stream? Are we sure we could deliver Celsus on twenty-four hours' notice? And if we couldn't, would we be protected in our Force Majeure clause? Is Celsus an Act of God that relieves Hope of liability?" Bleeker leaned forward and looked at Patrick earnestly. "Con, this is madness. Don't even *think* about it anymore. It *can't* be psi."

"It *has* to be," insisted Patrick. "It was impossible, until he made it work."

The research director stared hard at Patrick. He said finally, "All right, let's assume that he *can* make

just about anything work. Let's assume that he can even make an impossible reaction go, because he wills that it shall go. (Not that I believe it, not for a moment!) Let's say he can upset every known law of chemistry. Yet, if he alone can make it work, what good is it to the company? He can never explain it to the Engineering Department. You could never build a commercial plant based on his data. That's why Kober wants to conduct the new silamine process in the Fluidizer Bay personally."

Patrick sighed and got up. "Maybe you're right."

"Where are you going?"

"To see our psychiatrist."

"We all need it. Wish I had the time."

Patrick smiled.

* * *

Siegfried Walters was "free-associating." Inventors. Very few. Why does a man invent? *How* does he invent? There's an element of play in it. The best of them don't' really seem to care whether it works or not. Indifferent. Barely one real inventor in a hundred. Steinmetz. White's Organization Man explained all this. I could do a paper with figures. Statistics. One man starts it all. Study him. Pick one man. The oddest. Pierre Celsus. Bleeker has this study going. This Gruen outfit. Profile. How long would it take them to find Celsus? And what will they do with a fistful of mercury?

His reverie was broken by the intercom. Conrad Patrick was waiting in the anteroom.

* * *

Walters chose his words carefully. "Con, you realize that I may not be able to tell you what you want to know. I cannot discuss confidential matters."

"Relax, Siegfried. I'm not going to let you get called up before the Ethics Committee. I just need a few nonconfidential facts about Pierre. I've assigned one of my women attorneys to him, and now I'm wondering if I did the right thing."

"How can I help you?"

"Is he dangerous?"

"No. At least not in the sense that he would pick up a wrench and start swinging. He has no wish to hurt-- conscious or subconscious. Quite the contrary. He has been most helpful-- to me, at least. In fact, our doctor-patient relationship has become somewhat..." The psychiatrist hesitated.

"Somewhat *what?*" demanded Patrick.

But Walters was silent.

Frustrated, Patrick tried another tack. "Well, is he sane?"

"Sane? For him, that question is either irrelevant or wrong. Were William Blake and Beethoven and Buddha sane? Is a Chopin nocturne sane? Consider the falcon, the tiger, the temple at Karnak, and a moonbeam on a field of snow. Are these things sane?" His head jerked as though to squelch Patrick's snort of impatience. "The point is, Con, all these things, these people, these creatures, are the best of their kind. Perfect. Unique. Standards of comparison that work for other things are meaningless for them. And you ask whether Pierre Celsus is sane."

"That still is the question," said Patrick grimly.

"Well, then, he's not sane. But not insane, either. Maybe the best word-- and not really a good one-- is *un*sane."

Patrick shook his head in helpless frustration.

"Take this study by Gruen," continued Walters. "They are trying to pick this one man, to summarize all that is wrong with this lab. But suppose that he also summarizes all that is right at Hope? Suppose that he adds up all the magic and mystery of chemistry-- the control of mind over matter... sixty centuries of reacting things and coming out with other things?" He paused, searching for the phrases that would explain Pierre Celsus to the patent director. "Do you remember H. G. Wells' short story 'In the Country

of the Blind'?"

"'In the country of the blind, the one-eyed man is king'?"

"That's just the point. He wasn't. Being sighted, he was regarded as a freak. When he talked about 'seeing,' they thought he was crazy. They felt sorry for him. To cure him so that he could be a fit member of the community, they blinded him. If we're not careful, we might do the same to Pierre Celsus."

There was a pause. Patrick cleared his throat and studied the psychiatrist a moment. "Siegfried, I know this sounds crazy, but have you ever detected anything... unusual... I mean, really extraordinary..." He realized he must sound very strange. "Like-- "

"Psi?" asked Walters quietly.

Patrick started.

Walters seemed almost relieved. "You do know, don't you? I wonder how." He took a deep breath. "I'm going to stretch medical ethics just a trifle, Con. Since one of your patent people will be working closely with Pierre, I think you are entitled to know something further about him-- something you don't even know to ask about." He got up and walked over to the tape recorder. "Pierre and I make tapes. We do this every session, once a week. The theory is, the patient can replay the tape at leisure to reinforce his therapy. Except replay isn't the right word. Not the right word at all. Because some of the material on these tapes, the recent ones, was never spoken during the analysis."

Patrick was silent, expectant. Walters became almost pleading. "Do you understand what I have just told you?"

"I *guess* so," said the attorney hesitantly. "But there must be some logical explanation. Did somebody dub in something on the tape afterward?"

"That's what I thought, too, the first time it happened. The second time, I knew it was the right tape, even though I knew that what was on it was impossible."

"What *was* on it?"

"The *real* stream of consciousness. *The real thing,* mind you."

"What's so unusual about that? Isn't that the standard procedure?"

Walters leaned forward anxiously, as though it were essential to his own sanity that Patrick understand him. "Let me explain. We talk about the 'stream of consciousness'. It's a great tool in analysis. When a patient starts to think out loud, his thoughts soon wander to topics closely connected with the experiences buried in his subconscious, the things causing his neurosis. The patient puts up road signs, as it were, to guide the analyst. Now, you will have to appreciate that in this oral free association, the patient's tongue is hopelessly outdistanced by his mind, which is racing ahead a mile a minute, hearing sounds, seeing and feeling things, and his tongue has to pick and choose out of this kaleidoscope of sensation a few meager, widely spaced scraps to pass along to the analyst. So a great deal is lost when the stream of consciousness passes through the speech bottleneck. I complained about this to Pierre in one of our early sessions. He... ah... solved the problem."

"Siegfried," said Patrick, "are you trying to tell me that Celsus is telekinetically imposing his thoughts on tape?"

The two men stared dumbly at each other. Patrick waited for the psychiatrist to say yes, to nod. But there was no gesture. In silence Walters picked up a spool of tape and put it on the recorder. Instantly the room was full of sound. There were cries, tense voices. Patrick looked at Walters.

"You'd have to be a doctor to recognize what's going on there," said the other. "A baby is being born."

"Incredible," breathed Patrick.

"You think *that's* incredible?" said Walters, almost pensively. "Then listen to *this.*" He put on a second tape, ran it soundlessly for five seconds, then turned up the volume.

Patrick leaned forward.

Something rhythmic was coming from the speaker. "...Thub-lub.... thub-lub... thub-lub..."

Walters snapped off the recorder. "Recognize *that?*"

Patrick shook his head in wonder.

"It's a heartbeat," said Walters quietly.

"Heartbeat? Whose heartbeat?"

"My mother's."

"Your... *mother's?*" Patrick's jaw dropped. "You mean, *your* mother's?"

"Of course. Whom did you think I've been talking about? It's *my* stream of consciousness. It's *my* prenatal recall. Remarkable, isn't it? Even Freud couldn't recall farther back than age three. Pierre has been helping me. He puts this beam-- sort of a psi laser-- on my cerebral cortex, and then reflects and focuses it on the tape."

Patrick gulped. "I see. Then when you said doctor-patient confidence, you meant that the *doctor* was-- "

"Con," said Walters, looking at his watch, "you'll have to excuse me. I have an appointment."

As Patrick left, he met Pierre Celsus coming in.

* * *

"Well, Sieg, how are we today?" cried Celsus cheerily.

"You're late," said Walters petulantly.

I was tied up on silamine." He smiled contritely. "Sorry."

"Well, let's get started," said Walters.

Celsus nodded gravely and sat down in the big leather chair in back of the couch. Walters walked over to the couch, where he lay down and crossed his fingers behind his head.

"I hope you've reconsidered what you threatened to do at our last session," said Celsus.

"No, Pierre. My mind's made up. I'm going back to Vienna for a long refresher course. I'll be gone several months. You've given me a terrible inferiority complex. In fact, I think I may be on the verge of total breakdown. They didn't teach psi at the University. They didn't prepare me for people like you. They let me down." His voice trembled. "I'm no good to myself, my patients, or to anybody."

"They didn't know," soothed Celsus. "It couldn't be helped. Psi wasn't accepted when you went to med school. I guess it still isn't. But you can't blame yourself. There's nobody to blame."

Walters' face twisted around. "You're not putting this on tape. You *know* I have to reinforce my therapy by replaying these tapes."

"Of course, Sieg. Right away."

There was a click from Walters' desk, followed by the almost inaudible whirring of the tape recorder turntable. Celsus had not moved from his chair.

"That's better," said Walters, mollified. He closed his eyes. "I've looked you up, you know... your kind. It's quite a story.

"Ten centuries ago the best metal workers were respected dealers in the black arts. That's where the *black*smith got his name. An oath taken on his anvil was sacred, and binding in the courts. In China, only the priests were permitted to work copper and bronze, because everyone understood that extra-human help was necessary. But this is all gone. Nowadays, when anything impossible happens in a chemical laboratory, science always assumes there's a perfectly good reason, and generally they're able to find some sort of way to reproduce the impossibility. The overlook the fact that before it was first done, it was often truly impossible. They overlook the nature of the man who caused it to happen that first impossible time. Often the man himself doesn't understand how he did it. He would resist knowing. Even those who have psi often refuse to believe it. Take Carothers and nylon, Bell and the telephone, De Forest and the triode, Röntgen and X rays, Goodyear and rubber. They did these things, and later, much later, their successors figured out why the thing worked. They want you to explain why silamine works. But you can't. At least, not in terms that would make sense to Andrew Bleeker and Arnold Gruen.

"This Gruen thing. They're going to find you, you know."

"Yes, I know." The response came from the speaker on the tape recorder.

"You don't seem to be worried. Do you know what's going to happen?"

"Some of it," said the recorder, "but I don't know where or when."

"What will it be like?"

There was a silence. And then, as if to answer him, there came sounds from the speaker that the psychiatrist could barely make out. He sat up slowly, heavily, as though wakening from a dream. He was alone in the room. The impression grew on him that he had been alone for some time. He stared at the tape recorder, and now he understood the sounds. It was music. It was beautiful. He slowly recognized it. Bach's "Sheep May Safely Graze." And then other sounds began to emerge through the music in eerie counterpoint. He recognized the intrusive, incessant ringing of a telephone. Then an automobile horn. Then a woman's scream. And then there was a click, and the recorder stopped. Siegfried Walters pressed his hands to his face and groaned. "Oh, Freud, how could you have missed it!"

* * *

It was nearly midnight.

They sat on the sofa in Marguerite's tiny parlor, leaning back, and listening to Bach. It came to its lovely dreaming end and continued to float in the silence.

Finally Pierre Celsus said quietly, "What do you want of me, Marguerite?"

"I want to be your friend."

"Always before, when somebody wanted to be my friend, he really wanted something else."

"I know, Pierre. I once hoped you would explain-- *really* explain-- your silamine process to me." Her voice became morose. "But I gave up. I don't care anymore."

"But we've been through all that, Marguerite," he said patiently. "The reaction needs heat in an amount available only in a nuclear process. So we provide that. The terbium reacts with the silicon. The atomic number of silicon is fourteen. Terbium is sixty-five. to make them react, we simply feed in a little xerion. It doesn't react all at once; it's continuous-- over several hours. This gives the necessary BTUs over the required reaction period. In fact we get a little too much heat. That's why we have to cool the fluidizer column. We cool it with liquid ammonia, which we heat exchange from the hot column. This vaporizes the ammonia, so we just use the resulting vapor ammonia as the combination fluidizing and reaction vapor. The vapor ammonia reacts with the suspended silica particles, and out comes silamine. But you know all that. Why do you want to hear it again?"

The girl was puzzled. You mean, the terbium oxide *really* reacts with the silica?"

"Of course. The xerion, or elixir, causes it. Some centuries ago, it was a very well known catalyst for this kind of reaction."

"I don't think it's in Gmelin."

"No, I suppose not. But of course Gmelin is concerned only with chemical reactions. There's nothing nuclear in the Handbuch."

"Nuclear...?"

"Of course. How else could you get the necessary heat?" He looked at his watch. "Kober ought to be finishing the first silamine run right now. You're sure he isn't changing anything?"

"Not really. I think he plans to collect the catalyst, after the run, to analyze it."

The man started. "What do you mean, collect it? He's supposed to discharge it into the alkahest."

"Why, Pierre, I'm sure I don't know. Can't he simply ladle out a sample from the alkahest?

The man's voice was suddenly harsh. "The alkahest will dissolve anything he dips into it. And *then* what will he try?"

As she watched, the blood drained slowly from his face. Yet, when he spoke, his voice was controlled, almost resigned. "I have to go now, Marguerite."

Troubled, she did not try to stop him.

But after she heard his car drive away from the front of the apartment building, she began to worry in earnest. She had a premonition that something terrible was going to happen. But what? In fact, what *was* happening? What was going on, down at the lab, right now? Why did the process work at all? What was terbium plus silicon? Suppose you added their atomic numbers? What was sixty-five plus fourteen? Seventy-nine. And what element was number seventy-nine? It could be... but it couldn't be... She jumped up, ran over to her bookcase. Ephraim would have it. She flipped through the pages. There it was,

"Gold, atomic number 79." Pierre Celsus was making gold. *That* was his nuclear reaction, his source of tremendous heat. The wisdom of the ages applied to making silamine in the twentieth century. And if gold were really there, it was there as auric oxide. And auric oxide, ammonia, and water would react to form-- gold fulminate.

She whirled, seized the phone, and dialed rapidly.

* * *

Marguerite's voice was low, urgent. "Ben? Ben Kober?"

"Yes? Who is it?"

"Ben, this is Marguerite French. I want you to listen carefully."

"I can't talk now, Marguerite. The silamine yield was twice what we expected. The collector overflowed, and I had to shut down. I'm still mopping up." Kober sounded irritable, impatient. "Marguerite, I'll have to call you back."

"No, Ben! This is extremely important. Just tell me this: Are you running the spent catalyst into the alkahest-- all of it?"

"No, I'm not. That alkahest stuff is-- crazy. I tried to ladle some spent catalyst out of it with an iron dipper, and the whole dipper dissolved. Anything that goes into that alkahest is *gone.* The only way to collect a sample of catalyst is to dry it with hot air, *in situ,* in the fluidizer columns. Which is what I'm doing now. And as soon as it's dry, I'm going to take samples for analysis."

"That's what I thought. Ben, you must get everyone out of the Fluidizer Bay, instantly."

"There's no one else here."

"Then get out, yourself. Don't even wait to cut the switches."

"And why should I get out?"

"The catalyst is going to blow."

She heard Kober's curt chuckle. "You don't say. This is just plain silica, Marguerite. Sand."

"It is *not.* If I tried to explain, it wouldn't make any senses to you."

"Try me."

"Some... gold... has got into the fluidizers. This has reacted with the ammonia. The whole unit has been working with gold fulminate coating the silica. The fulminate was harmless, because it was wet with by-product water, and Pierre intended that it all be dumped into the alkahest, where it would-- disappear. But now you're drying it in the fluidizers. As soon as it's dry, it will explode."

"Gold... fulminate-- ?" said Kober slowly.

Marguerite continued with a sense of desperate futility. "Yes. You get it when you react auric oxide with ammonia and water. When it's hot, it detonates by friction. Your drying conditions are perfect."

"Marguerite, have you been drinking?"

"No, Ben. Just a couple before dinner. That was hours ago."

"You had dinner alone?"

"With Pierre."

"Now, Marguerite, let's consider this thing calmly. I don't know what nonsense Celsus has been feeding you. But believe me, there's not a trace of gold in the silamine system. We analyzed everything that went in, and I've been here from the beginning. Celsus is just trying to queer the whole run, because he wasn't asked to supervise it."

"No, Ben, it isn't that way at all. I know there was no gold in the catalyst in the beginning. *But there is now.*"

"Impossible. The seals on the fluidizer and the feeder are still intact. There's absolutely no way for anything, gold, silver, or your fine pea soup to get into the reactor."

Marguerite felt her slight body begin to shake. She took a big breath, then exhaled slowly. When she spoke again, her voice was quiet, with the calm of fatalism. "Pierre did it. By a technique that neither you nor I could possibly understand. There is reason to think that he is an... alchemist. You know... philosopher's stone... xerion... alkahest... universal solvent... the whole bit. He can create gold on the

silica-- *out* of the silica. That's what provides the heat."

Kober said curtly, "I must say, Marguerite, this is the last thing I'd expect to hear from one of your standing in this company. What are you trying to do to our survey?" He continued with mounting bitterness. "The patent department stands to gain as much from our study as any group in the lab. I know Gruen has enemies. We expect that. But not at your level. You can be sure Bleeker will be told."

There was a click.

"Ben!" screamed the girl. Instantly, she dialed back. She listened to the ring for a moment, and then there was another click. "Ben? Ben?" There was no answer, and she finally realized that Kober must have taken the phone off the cradle. And that meant her own phone was dead. She could not call Patrick.

Within seconds Marguerite had pulled on her coat and was running downstairs to her car. Patrick. Kobe would listen to Patrick. And fortunately Patrick's house was on the way to the lab.

* * *

In five minutes she was simultaneously jabbing at Patrick's doorbell and pounding on the door. The lights came on after what seemed forever, and Patrick stumbled downstairs, pulling ineffectually at the sleeves of his robe, red hair and mustache awry. "I'm coming, I'm coming," he called hoarsely. "Marguerite, what in the world!"

She had a momentary impulse to dump the whole thing in Patrick's lap and then collapse. But suppose *he* didn't believe her either? What then? She couldn't take the chance. There was only one way to do it.

She said quickly: "Emergency at the lab. Where's your phone?"

Patrick was already moving into the study. "This way."

"Call the night watchman. Tell him to call an ambulance. And tell him to stay away from the Fluidizer Bay. Then you follow me down."

"I'll be right behind you, Marguerite. Don't take any unnecessary-- "

But the front door had already slammed behind the girl.

* * *

Marguerite's ride down Route 29 to the lab had a vague, dreamlike quality. At eighty miles an hour, the car seemed floating lazily. Ridiculous irrelevancies flitted through her mind. It can't be happening. Not now. Not today. Not in the twentieth century. Perhaps it would be all right in some dark thirteenth-century cellar, but not at the Research Laboratory of Hope Chemical Corporation, organized and existing under the laws of the State of Delaware, United States of America, and having a principal place of business at Camelot, Virginia.

Somewhere behind her she heard a siren howling, and her eye caught a blinking red light in her rear-view mirror. Ambulance? No, patrol car. She laughed soundlessly and turned up the drive into the lab grounds. As she did so, she saw ahead of her another car already far up in the drive, already drawing to a halt at the first of the buildings. In a moment of dark prescience, Marguerite knew it had to be the little red compact of Pierre Celsus. And it was plainly Celsus who ran into the building.

Marguerite honked her horn savagely. Then she screamed, "Pierre! Pierre!" It was useless. She pulled in behind the other car, brakes screeching, and ran in through the lobby, then dashed down the corridor toward the Fluidizer Bay. As she burst through the swinging doors of the Bay, she thought she was in time. Celsus and Kobe were struggling on the floor by the silamine control panel. Each of the three fluidizer columns was gleaming peacefully under the bright fluorescent lights.

She saw Celsus break away, reaching for the switches.

Then the first column exploded.

The blast, projecting outward, for a microsecond bathed Celsus in an iridescent spray, outlining his shadow on the gray-painted concrete block wall behind him.

In that moment a great wind lifted the girl, almost gently. She closed her eyes by reflex, and wondered

whether her back would be broken when she was hurled through the doors behind her. But she did not touch the doors, because they were burst from their hinges even before she was thrown through the doorway. Then there was a second blast, and something massive whistled over her head while she was still in the air. The third blast was complete before she stopped skidding down the hall. All three fluidizers had blown in sequence. She picked herself up and ran back to the doorway, where Kober passed her, staggering, coughing, face bleeding.

Inside, Celsus lay face down in the wreckage of the silamine unit. In the bay, a merciful pall of dust swirled slowly, and nothing was recognizable.

She gathered her crumbling wits and stumbled down the stairs to the body, lying small and rumpled on the concrete floor. She knelt down, thrust her hands gently under the armpits, and began to drag the body slowly toward the stairs. She was met halfway by Patrick, who seemed to have materialized from nowhere. Together they got Celsus into the hall. He was unconscious, but breathing regularly, and no bones seemed to be broken. By now they had been joined by Kober, the night watchman, a state trooper, and two ambulance attendants.

Celsus, amid groans, tried to sit up. Patrick peremptorily pushed him back down. Then, as Patrick straightened up, he looked back into the Bay. He pointed, wordless. Marguerite stared with him.

The dust was settling, and as it settled it was changing color. It went through the spectrum. It was pink. Then it was blue. Then purple, brown, black. The emergency lights were turning green, and Marguerite knew that this had to be so, because gold was translucent in thin sections and transmitted green light. The aluminum blinds just beyond the fluidizers were momentarily purple, with the instant formation of gold-aluminum alloy, and even as she watched, the color was changing to a more golden luster. Even the iron stair guard was changing, the blue of the ferro-gold creeping rapidly up toward them. And then the shift of colors slowly ceased, and an aureate patina lay everywhere. Marguerite knew then that every piece of exposed metal in the bay, from the wrecked fluidizers to the sink fittings, was Midas-stricken.

And then Patrick pointed again, this time across the great room, toward the opposite wall. On that wall was the shadow of a man, blast-written, one arm raised to them in eternal greeting, a gray silhouette stenciled within a scintillating sheet of golden particles embedded in concrete, a chiaroscuro of darkness and shining promise, a thing to measure them forever.

"What is it?" whispered Celsus.

With awe, Patrick replied, "Your profile."

* * *

The Staff Room used regularly by Bleeker for the monthly meetings of his department heads, was kept on a continuing standby basis by Miss Sally for instant emergency use. To ensure this condition of perpetual preparedness, she had made it clear to her boss and his lieutenants that the pencils, tablets, and ash trays in front of each chair were there solely for purposes of state and were never to be touched. Patrick, who felt naked and insecure without his meerschaum, met the ashtray problem by hiding several in an old briefcase in a drawer of the big conference table. The conferees, of course, took notes, if any, on paper they brought with them. Bleeker sometimes assigned to one man, generally Henry Pfennig, the comptroller, the task of "writing up" the meeting for circulation to all participants, after checking the draft with Bleeker, who occasionally added a few comments, which, although never said in conference, should, on his due reflection, have been said. And sometimes he struck passages-- his own and those of others-- which he felt were inconsistent with conclusions reached after the conference.

Except for Bleeker, the seating at Bleeker's conferences was a matter of subconscious choice. Bleeker always sat at the head of the long table, like the captain at the helm. From there on, the seating varied, depending on the type of meeting expected. If it were rumored that Bleeker was going to read a letter of praise from the Board of Directors for accomplishments of the past year, all the chairs close to the head of the table were likely to be occupied. And contrariwise, if the meeting were rumored to deal with matters of budget cutting, then the staff shrank to the far end of the table in an anxious cluster.

This morning, of course, as everyone knew, the conference sat as a court of inquiry, and from this fact

the proper seating emerged. Patrick, as counsel for the defense, took the end of the table opposite from Bleeker, the judge-prosecutor. The defendants, Celsus and Prentice, took seats together, alone on one side of the table, and opposite them, Gruen, Kober, Bond, Pfennig, and Marvin-- of Personnel-- formed the jury.

Pierre Celsus stole uneasy glances at the unsmiling faces opposite him. He sighed and dropped his eyes. He knew he had sinned chemically. Because of him, three people might have been killed. His process had demolished equipment worth many thousands of dollars. The project had been set back by several weeks. Now, in fact, silamine might never reach the pilot plant stage.

Initiative, he had been told, was valued at Hope, but, he suspected, not when it resulted in disaster. That was when they stopped talking about brilliant breakthroughs, and started talking about sheer crass sophomoric stupidity. There was no use in trying to explain anything. Those few who accepted his talent required no explanations; to those who did not accept psi, no explanation was possible.

He knew he was through at Hope. He wouldn't mind being fired, except for Marguerite. He was going to miss Marguerite. He slumped miserably down into his chair. Prentice looked at him for a moment and then did the same.

Bleeker looked slowly around the table. "I think you all know why we are here. Last night's explosion merely brought matters to a head. Apparently this situation has existed for some time, and with certain exceptions"-- he nodded gravely to Patrick-- "we have been too blind to see what has been going on. I have asked all of you here to help me decide a course of action. And Pierre, I'll start with you. Do you really have this power, psi, or whatever it's called?"

"Yes, Mr. Bleeker, I guess I do."

"And Prentice, he has it, too?"

"He has it, too, but I'm still teaching him how to control it."

"Perhaps both of you could use a little more instruction," said Bleeker dryly.

"Kober shouldn't have tried to dry the catalyst," said Celsus shortly.

"I don't hold him blameless," said Bleeker. "But the question is, what do we do about it? I take it, Pierre, this is by no means the first time you have used psi in our research?"

"That's right, sir. Only, this is the first time we got caught."

Bond asked curiously, "What were the other times?"

"Different times. Certain processes required high exotherms, and we provided the heat the same way that we did for silamine, by nuclear reactions in which we made gold *in situ.* And then we got rid of the gold in various ways."

"How do you mean, various ways?" asked Bleeker.

"Well, last year we ran the effluent into a tank of ferrous sulfate-sodium hypophosphite. The iron came out as metallic iron, of course, and then immediately alloyed with the gold, to give crystals of green iron-gold alloy. It sat around in the solids-disposal vat, near the parking lot, for several weeks before it was hauled away. Mr. Pfennig used to toss his cigarette butts into it, coming to work every morning. Another time we hid the gold as nice purple crystals of aluminum-gold alloy. Nobody noticed, because everybody thinks that gold is gold-colored."

"Why did you switch over to alkahest, in the silamine process?" asked Bleeker. "Why didn't you figure out another way to 'hide' the spent catalyst?"

"We were afraid there would be too much catalyst to hide. We needed something that would absorb hundred, even thousands of pounds of spent catalyst. It had to be the alkahest."

Pfennig turned his cold eyes on Celsus. "Gold is worth thirty-five dollars an ounce. How many ounces, all told, did you throw away?"

Celsus studied the ceiling. "Well, from the beginning, I guess there was a total of about three or four hundred."

Pfennig's eyes widened. "Four hundred ounces? That's fourteen hundred dollars!"

"No, Pfennig. I meant four hundred pounds. Twelve ounces to the pound, troy weight."

"But that's"-- his voice rose in a horrified shriek-- "one hundred sixty-eight thousand dollars!"

"Spare us the arithmetic, Henry," said Patrick. He turned to Celsus. "About the silamine unit. You

started it with psi. You heated it with nuclear psi. Could you shut it down with psi?"

Celsus and Prentice exchanged glances. Celsus rubbed his chin. "In the sense you mean, I think the answer is 'yes'."

"Without blowing up the plant, I mean," said Patrick hastily.

"Of course."

Patrick relaxed back into his chair, fired up his meerschaum, and smiled across at Bleeker as though to say, "Your witness."

"I don't see your point, Con," said Bleeker impatiently. "Who cares whether he can *stop* it? I think we'd better go on to the technology of the operational process. Pierre, about this alkahest: Is this a true universal solvent?"

Celsus shrugged his shoulders. "I think so."

"Then why," demanded Kober triumphantly, "doesn't it dissolve the vessel that contains it?"

Celsus looked at Prentice. The latter grinned, then replied, "That's easy. The solvent isn't in direct contact with the container. Also, I don't believe the solvent action is really chemical."

"You don't *believe!*" sneered Kober. "You admit you don't know?"

"That's right. We think it's more-- mental-electrical. To activate it, we have to set up these encephalographic oscillations. In fact, we think that anything that goes into the alkahest truly disappears-- dematerializes. Now, if we had a companion psi field, we might make it rematerialize..."

"I believe that's enough for now," said Bleeker quietly. "Pierre, would you and Prufrock be good enough to wait in the anteroom? I'd like to discuss this further with the rest of the group."

* * *

After the two had gone, Bleeker looked around the table. "And now, I want some constructive suggestions."

"The answer's obvious, Andy," said Pfennig. "These men are dangerous. They've destroyed equipment, nearly killed a couple of people, fouled up orderly administrative processes, and driven our psychiatrist crazy. We'll have to let them go."

Bleeker looked thoughtful. He glanced over at Bond. "Jim?"

The Silicon Group Leader spoke with slow dignity. "I've been with this company ever since I got out of graduate school. When I arrived here, the lab was one wooden shack in the middle of a corn field. Our pilot plant was an old bathtub. I watched the first brick building go up. I've spent my professional life watching Hope Chemicals grow into the giant it is today, and I like to think I've done my share to help it grow. We did this by science, by ordered imagination. And we can keep doing it. We don't need magic or chicanery. Are you going to let these men louse up a generation of Hope chemistry? In fact, will you let them destroy several centuries of genuine science? Are we to return to the Dark Ages? And suppose we branch out into alchemical processes-- do you think it will end there? What lies beyond alchemy?" Bond's mouth wrenched bitterly. "Can't you see what will happen? This means the breakdown of modern chemistry. It's like Einstein and the collapse of classical physics, except this will be worse-- much, much worse."

Bleeker winced. "You brought out a number of interesting points." He turned to Gruen. "Arnold, how does our consultant say?"

"Even if it's true, what Celsus claims, this talent, which I very much doubt, I suggest that you wait a while. Let some of the smaller, irresponsible chemical companies make fools of themselves. Of course, in the remote event it works, then Hope can always pick it up."

"I see. Dave?" Bleeker nodded to Marvin of Personnel.

"Insane," muttered Marvin. "If any rumor of this thing leaks out, we'll never get another serious job applicant-- just kooks."

"And now, Con," said Bleeker. "It's your turn. What's the legal viewpoint?"

"I've looked into a number of points," said Patrick, "but I'm sure I haven't caught everything. Our corporate chapter is silent on alchemy. It says generally, though, that we can engage in any lawful activity

in the chemical field. The early Virginia laws against witchcraft and magic were repealed in the eighteenth century, during Williamsburg days, and I believe we could argue that any implied restrictions against alchemy were abolished at the same time. At the national level, though, there may be a problem on alchemical gold-making as such. Nuclear processes belong by law to the Atomic Energy Commission. If word got out, the United States government might seize Celsus and Prentice by eminent domain. Furthermore, aside from a little jewelry use, the only real market for gold is the United States Mint. We seem to be clear, though, on all other alchemical processes, such as silamine."

"Can we take our patents on these processes?" asked Bond heavily.

"No. Not at present. There are no specific statutes permitting psi patents. Also, the United States Supreme Court held in Halliburton v. Walker that a patent claiming a mental step is invalid. This is a gap in our patent statutes that can be overcome only by legislation specifically aimed at psi patents, just as the Plant Patent Statute was enacted in 1930 to protect certain new varieties of plants. But I'm not sure we want psi patent legislation. Not yet, anyhow."

Bleeker looked at him curiously. "If we can't get patent protection, what's to stop Celsus from leaving us and setting up a competitor in the silamine business?"

"Any court in the country would give us an injunction against that," said Patrick. "His employment contract with Hope ways that we own all processes he developed here, and requires that he won't disclose our processes to any subsequent employer. On the other hand, if we make life attractive for him here, why would he want to leave?"

"You mean," said Bleeker, "have him *deliberately* develop more psi processes?"

"Certainly, and hold them all as trade secrets. Exploiting psi techniques as trade secrets will have many advantages over our normal patent procedures. In the first place, you don't have to worry about infringing adverse psi patents. There aren't any. Secondly, most foreign countries can force you to grant a license under your foreign patents. We'd never have to worry about that. With psi, we can always pick our own licensees. Thirdly, all patents finally expire. But a psi technique need never expire."

Bleeker leaned forward and peered keenly at Patrick. "Let's get specific. Suppose we license silamine to the People's Republic at a running royalty. How do we enforce payment?"

"They pay or Celsus shuts them down," said Patrick simply.

Bleeker studied the blank pad in front of him. His face held no expression, but his mind was racing, searching. The answer was here, if he could only put his finger on it.

"Besides our own plant," continued Patrick quietly, "we would have licensees in all civilized countries. But of course," he shrugged, "it's only money."

Bleeker stared at him with widening eyes. "Money..." he whispered. And suddenly he saw the solution... the answer... the way out. And with this came a shocking, awesome insight into those glacial faces in Richmond, with their rimless spectacles: the Hope Board of Directors. They had put him here, knowing that when this moment arrived, he, and he alone, would know what to do, and would be worthy of their trust, and of the fabulous salary they paid him. It made a man very humble. And yet, it was so easy, and so obvious, at least to him. He felt almost sorry for his department heads, with their routine minds, thinking only of patents, of personnel, of run-of-the-mill research problems, and of the ordered progress of science.

"Arnold," said Bleeker to Gruen, "before we get too far with this, I want to thank you on behalf of Hope. Without your survey, we might never have discovered this potential hidden in our midst."

Gruen was puzzled, but took it in stride. He had not reached his present eminence by rejecting undeserved credits. "We simply did our duty," he said with noncommittal modesty. That, he thought, would take care of most anything.

Ben Kober stared in bemused silence, first at the research director, then at Gruen.

"Does this mean," demanded Pfennig with painful perception, "that Celsus and Prentice stay?"

Bleeker nodded. "Of course they stay. But that's just the start. Call them both back in, will you, Henry, and let's get this thing organized."

The two men came back in hesitantly, looking scared.

"Gentlemen, be seated," said Bleeker genially. "Pierre, I think you'll be delighted to know what we're

going to set up a group for you, a psi group, devoted exclusively to alchemy. You can work on anything you like, so long as it's a moneymaker, of course."

Celsus slowly relaxed. "Why, that's wonderful. However, I wonder if you could make it retroactive to last month, when the moon was in Aries?"

"Astrology!" cried Pfennig. "What incredible impertinence!"

Bleeker held up his hand. "The auspices were at their maximum then?" he asked Celsus gravely.

"Yes, sir."

"Call me Andy, Pierre."

"Yes, Andy."

"So be it. Now, Pierre, everything should have a name. What shall we call your new group?"

Celsus looked doubtful. "Most anything. 'Special Projects'...?"

"Too tame," said Bleeker. "How about the 'Alchemical Group'?"

"Andy!" cried Dave Marvin. "The Board of Directors will think you're crazy!"

"Crazy, Dave? If it makes money, it can't be crazy. That's a contradiction in terms. Anyhow, if the Board notices it at all, they'll think it's just another promotion gimmick of our Madison Avenue ad agency. You know, like 'miracle plastics,' 'miracle cigarette filters,' 'miracle detergents,' except that they'll be pleased that we're not using a tired, overworked word like 'miracle'."

"They'll find out sooner or later," said Bond sourly.

"I know. But by then the silamine contract with the People's Republic will be making so much money they won't care what we call it."

"With that name, we'll be tipping our hand to the competition," demurred Marvin.

"The industry may eventually find out," conceded Bleeker. "But at least this will delay the discovery. This way, they'll think we're joking. Everybody knows there's no such thing as alchemy. But if we called it 'Special Projects,' they'd have spies in here overnight. Our best camouflage is to be wide open. Business as usual. So we have a name." Bleeker leaned back. He was enjoying himself immensely. "And when we sign that People's Republic contract, we'll automatically have to spend ten per cent of the receipts on supporting research. So now let's staff the new group and give this thing some functional structure." He looked across to Celsus. "Pierre, you'll need an Assistant Group Leader. Anyone in mind?"

"Well, Prufrock and I have worked together-- "

"Oh no!" groaned Pfennig.

Patrick shot a warning glance at the comptroller. "Don't say it, Henry," he said quietly.

"I will say it! A. P. Prentice-- *the sorcerer's apprentice!*"

Bleeker looked at him thoughtfully. "Well, there's an idea. 'Sorcerer's Apprentice'. Hm-m-m. Perhaps we should use *that* as the title, instead of 'Assistant Group Leader.' It goes nicely with the alchemical motif. Is that all right with you, Prufrock?"

"It's fine with me," said Prentice. "I never had *any* title before. Can I use it when signing mail?"

"Certainly. Now, then, let's go on. Hope has big insurance policies on the lives of its key executives, payable to Hope, of course. Henry, we'll need something like that for our people in the Alchemical Group, something similar to a violinist insuring his hands. Only here, we're covering loss of psi."

"I'll try Lloyd's of London," said Pfennig. He added cynically, "The premium should be fairly cheap, if we tell them it's for continuance of *existing* talent."

"Fine," said Bleeker. "Now, the new group will need some technicians. Dave Marvin can take another look around here, for talent. And also, Dave, will you line up a good body-snatching technique for locating psi talent in the colleges... and among our competitors. When we set up our job application booths at the ACS conventions, include some way to catch the psis."

Marvin looked dubious. "We stopped the ACS job booth months ago. As you may recall, Con, we borrowed your Miss French to take the applications. Very attractive young lady. And we got more applications from our own lab than we did from the competition."

"Try her again," said Bleeker. "At least, this way maybe she can detect some talent in our own applicants. Now then, for the universities. We ought to sponsor some graduate research. Two or three

fellowships to start. Pierre, any ideas?"

"Oh, there's plenty of projects. Psi-rearrangement of plant chromosomes for better crops. And Prufrock could use some blue sky research on the operation of the alkahest."

"Sounds good," said Bleeker. "How about placing them with Duke University? They've done a lot of work on psi phenomena."

Patrick frowned. "I don't know. Duke is too ivory tower for my taste. They've been in this field for thirty years, and never made a nickel on it."

"All right," said Bleeker, "we'll try a school with a more realistic approach."

"How about the University of Transylvania?" said Bond acidly.

"Just the thing," said Bleeker. "And that'll give us an objective foreign viewpoint, too."

"Also," said Celsus, "we ought to place a project on psi-control of Maxwell's Demon, for our thermodynamic studies."

"For that one," said Bond wearily, "Texas Christian University."

Bleeker beamed at him. "The very thing!" He studied his notes. "Consultants. We ought to have a couple of top-flight men."

"We need a good astrologer," said Celsus.

"Fine. Get some names. I'll go over them with you. Any others?"

"I've been corresponding with a man in Trinidad... a *houngan.*"

"That's voodoo!" hissed Pfennig. "And it's outlawed there."

"The government of Trinidad is squarely behind its new chemical industry," said Bleeker smoothly. "I'm sure they would help us in making the necessary arrangements for a bona-fide chemical consultant, such as Pierre's friend."

"We'll also need a computer expert," said Celsus, "at least one, for programming our machine translators."

"What for?" demanded Kober.

"It's for the incantations for our foreign licensees," explained Celsus. "For example, English won't work for the People's Republic plant in Czezhlo, and I don't know whether we could trust an interpreter."

"Agreed," said Bleeker. "One computerman. Now, we'll need a trademark for silamine. Any ideas?"

"'Psilamine'," said Patrick, sounding the 'p.'

"Will the Patent Office register that?" demanded Bleeker. "Isn't it descriptive?"

"Is the Patent Office going to believe it's made with psi?" countered Patrick.

"I suppose not. Very well, then, 'Psilamine' it is."

Patrick broke in. "The new group should include a Trade Secret Officer, to work on psi inventions in liaison with my own department. He could take quite a load off us."

Bleeker looked at Patrick blankly. It was incomprehensible that Patrick should recommend that the function of the Hope Patent Department be diminished in favor of a competing group. As Patrick continued, however, Bleeker relaxed.

"Marguerite French is the obvious candidate for the job," said Patrick. "And, of course, I'll need an additional man in *my* group to work with her, besides another attorney to replace her."

"Seems reasonable," said Bleeker. At least, he thought, it fits the pattern. Whenever we figure out how to eliminate one man, we find we need two more to replace him. He sighed. "All this is going to cost a lot of money. So let's start making that money. Con, if you will blue-back a couple of execution copies, I think we can sign that contract with the People's Republic."

* * *

So the world's first commercial silamine plant was built. The day it went on stream Comrade Sasanov dedicated the plant to the People's Republic in an elaborate ceremony, with ribbon cutting, valve turning, and Pierre Celsus standing beside the machine translator awaiting the signal to start the punched-tape incantation.

Three months later Pfennig telephoned Bleeker. "The first royalty check is now one week overdue."

This struck a chill to Bleeker's heart, but he kept his voice assured and cheerful. "Don't worry about it, Henry. I'll cable Sasanov."

The cables-- and there were finally three-- brought no response. Bleeker then telephoned the chancellery at Czezhlo. He got as far as the second assistant secretary. Comrade Sasanov was unavailable.

"Then give His Excellency a message," said Bleeker in clipped fury. "We are going to close down your plant."

Across six thousand miles, he heard a polite purr: "How very droll, Mr. Bleeker! When, exactly, do you plan to shut down our plant?"

Bleeker thought wildly. Had he stepped into something? Still, Celsus had assured him he could, if necessary, shut the plant down. "Next Friday," he grated. "At midnight, Czezhlo time. And it will stay down until we get that check. Tell Sasanov."

A chuckle squeaked, back through the static. "I shall, Mr. Bleeker, I shall indeed."

Even as he was hanging the phone up, Bleeker realized that he had violated the basic rule of leadership: he had made an emotional decision. Even worse, he would now have to call on his assistants to bail him out, and he hadn't the faintest idea how, or whether, they could do it.

Ordinarily Bleeker knew how far his people could be led, cajoled, threatened, coaxed, and pushed. He knew their inner resources, hidden strengths, latent ingenuities, better than they themselves.

But psi was different. He knew he didn't have the "feel," the insight, and the understanding that would surely bring forth the necessary team effort to solve the Sasanov problem. It would be like trying to conduct the lab symphony orchestra in an evening of Beethoven, when he couldn't even read music.

He glared bitterly across the room at the model of the silamine plant sitting on his credenza. The model had been painstakingly contrived in the lab maintenance shop. It had first been exhibited to the Board of Directors, and later, by special recommendation of the Hope President, it had sat in glory on a dais at the annual stockholders' meeting in Richmond.

A dozen times in the past few months Bleeker had caught himself daydreaming in the direction of the model. The scene of his visions varied, but generally it was the bar of the Chemists Club in New York. He was seated there over cocktails with a couple of old friends, research directors with Hope's competitors, basking in their eager, envious inquiries as to how he had pulled off that fabulous silamine license with the People's Republic. He could see himself smiling in poorly-simulated self-deprecation. "Seems like magic to us, too." That's all he would tell them. And now the vision was fizzling out. If Sasanov refused to pay royalties, Bleeker would never dare show his face in the Chemists Club again.

Just now the model was gleaming in minuscule mockery.

He took a deep breath and buzzed his secretary. "Miss Sally, get me Mr. Celsus."

* * *

Bleeker looked gravely from the silamine plant model occupying the center of the conference table to the surrounding faces. "I want to thank all of you for coming, especially you, Dr. Dessaline. We apologize for the short notice."

The dusky *houngan* from Trinidad nodded inscrutably.

Bleeker continued. "As you all know, this is a real emergency." He looked at his watch impatiently. "Does anyone know where Con Patrick is?"

"He's on his way from the airport," said Celsus evasively. "He'll be here in a few minutes."

Bleeker sighed. Give a man a title, and the first thing you know he starts wearing a clean lab coat; next, he wears a suit, and the jacket matches his pants. But Celsus had not stopped there. He was now wearing a vest. He had obviously hired another very important-- and very expensive-- consultant. Patrick was probably bringing him in from the airport.

"We'll have to go ahead without Patrick," said Bleeker. "It's already five o'clock-- eleven p.m. Czezhlo time. If we're going to accomplish anything, we have barely an hour. Pierre, what can we do?"

"I've reviewed the background with Dr. Dessaline," said Celsus. "We both agree on the basic

approach. We must put a temporary hex on the Czezhlo plant."

"What does that involve?" asked Bleeker, curiosity breaking through his gloom.

"The principle of malediction is quite simple," said Dr. Dessaline. "The condemnation recital requires no set words. If it is sincere, if it comes from the heart, that is enough. Promptly following the incantation, the denunciator sticks the pin in the effigy-- the doll, if you will. The entity represented by the doll instantly falls into a swoon and recovers only when the pin is removed."

"Doll?" said Bleeker apprehensively. "Of Sasanov?"

Dr. Dessaline smiled thinly. "Nothing so sophomoric, Mr. Bleeker. The doll we mean is this model of the plant, which Mr. Celsus brought in from your office just for this purpose. For a pin we can use almost anything-- a knife, a ruler... this letter opener will do."

"I see," said Bleeker. He turned to Celsus. "*You* are going to perform this hex, I presume?"

"No, Mr. Bleeker!" said Dessaline quickly. "Not Mr. Celsus. You must not ask him to curse his own child! Even if he should try, out of loyalty to you, it probably would not be completely effective, because he could not possibly be sincere at the necessary subconscious level."

"Well, then," said Bleeker grimly, "who *is* going to do it? *You,* Dr. Dessaline?"

The *houngan* sighed. "I could do it, but I would need time for the necessary preparations, and I would have to collect suitable assistants, with specially tuned drums. This could be done only back in Port-of-Spain, and would mean a delay of several days. The dramatic effect of calling the exact time would be lost. Sasanov would not be sure that the shutdown was your direct act."

"Am I to understand, then," said Bleeker slowly, "that *nobody* can do *anything,* here and now?"

"We intend to try, Andy." Celsus studied his superior hesitantly. "I hope the budget will stand one more consultant?"

"I suppose so." Bleeker turned to Pfennig. "Henry, how much is this hex going to cost?"

The comptroller adjusted his pince-nez and studied his accounting sheets. "Depends on whether we charge it out as a normal operating expense, or whether we have to amortize it as a capital expense resulting from the transfer of assets held more than six months." He cleared his throat. "I must confess, I've had trouble in getting a clear answer from the Internal Revenue people-- "

"Never mind," said Bleeker hastily. "If we really have to have another consultant for the hex, we can't bother about the expense."

"We need someone with unusual qualifications, Andy," said Arnold Gruen. "We have analyzed his profile. As a minimum, he must be a physical chemist with an international reputation. He must be a man of convictions, and not given to delicate nuances in his pronouncements."

(How curious, thought Bleeker. Not so many months ago, I had to ram the Alchemical Group down their throats. Now they are all telling me how it ought to be run.)

"To sum up," concluded Gruen, "he must be a scientific man of letters, sincere, yet eloquent in extemporaneous scientific discourse."

"This is all very fine," said Bleeker, "but where will you find such a man within the hour remaining to us?"

The door burst open.

Patrick and a stranger entered.

"Gentlemen," announced Patrick triumphantly, "Professor Max Klapproth!"

As a man, the group stood up. Patrick made the introductions.

Bleeker studied the newcomer with interest. Professor Klapproth was a big man with shaven skull, penetrating blue eyes, and an inquisitive tetrahedral nose. Bleeker had never before met him, but knew him by reputation.

Professor Klapproth's texts on physical chemistry had been standards in American universities for a quarter of a century. His research and publications in heat transfer, catalysis, and vapor phase reactions were classics, and his work on reaction rates had won him a Nobel prize. All of this he had done with a purity, logic, and economy of concept that was at once the inspiration and despair of his following throughout the world. He had turned down innumerable offers from industry, but freely accepted consulting assignments, on the theory that when he worked for everyone, he need not curb his tongue for

anyone. Despite his outspoken independence, and despite the fact that he charged by the hour the fees asked by most other consultants by the day, he was in such demand that he was able to select assignments that really interested him. He delighted in going over a flow sheet for a few minutes and then pointing out to the dismayed client errors in design that would require hundreds of thousands of dollars to correct. He stood for no nonsense. There was an apocryphal story that he had dismissed a graduate student who had proposed as his Ph.D. thesis, "Free Will Aspects of Brownian Motion."

Yes, thought Bleeker, the boys have chosen well. He felt a warm glow begin to diffuse through his chest. For the first time in three days, he relaxed.

Patrick motioned Klapproth to a chair.

"I don't think I'll be here long enough to sit down, Mr. Patrick," said Klapproth curtly. He looked at his watch. "I hope to be on the next plane to Kennedy Airport."

Celsus glanced at the wall clock and smiled. "We'll have you on that plane, Professor Klapproth."

"Is that the plant model?" demanded Klapproth, pointing at the table.

"Yes." Dessaline handed the letter opener to the professor.

"And you want my opinion as to whether it will work?"

"Yes," said Bleeker.

"It can't possibly work," said Klapproth. "I went over the flow sheet thoroughly with Mr. Patrick as he drove me out from the airport. Someone is trying to make a fool out of you, Mr. Bleeker. You got hold of me just in time." He tapped the model fluidizer with the tip of the letter opener. "You'll need a fantastic heat input here-- a BTU requirement that you could obtain only in a semi-nuclear reaction. But instead of heating, you *cool* the reaction. Also, you plan to dead-end spent catalyst continuously into *this* vessel!"-- he tapped the alkahest container-- "which will certainly overflow within a few hours. And another thing. Your reagents... xerion... alkahest... there are no such things. And finally, by your own admission, no silamine process can operate without being autocatalyzed by at least one molecule of preexisting silamine. Which is a contradiction in terms... an insuperable paradox."

"Might not all these problems be overcome by the proper application of psi?" asked Patrick innocently.

"...Psi?" Klapproth stared at the patent director in open amazement. Then his face, forehead, and scalp slowly turned red. "Gentlemen!" he sputtered. "What do you take me for!"

"Mr. Patrick," said Bleeker soothingly-- while carefully avoiding Patrick's indignant eyes-- "is our patent attorney."

"Oh, of course," said Klapproth coldly. "I forgot." He looked about him suspiciously. No one seemed to be disconcerted or chagrined. One or two seemed actually pleased.

Celsus broke in hurriedly. "We have to watch our timing very carefully now. Would you say, Professor Klapproth, that any silamine plant represented by this model probably would not work?"

"It could not possibly work," snorted Klapproth. "And when I say a thing is impossible, IT'S IMPOSSIBLE!"

"Completely hopeless, would you say," prodded Patrick.

"Worthless, futile, useless..." echoed Klapproth.

"Ridiculous?" murmured Dessaline.

"And stupid, idiotic, feckless, moronic, otiose," boomed Klapproth.

Patrick stared at the man, transfixed by awe and admiration. Mark Twain, he thought, had not been more eloquent in his mule-skinner days.

But Klapproth had not finished. "A pixilated pile of junk... a raffish refugee from a scrap heap... a haphazard of hare-brained hardware..."

"It's midnight in Czezhlo!" whispered Bleeker.

"Through the heart!" cried Dr. Dessaline.

Professor Klapproth plunged the letter opener into the vitals of the model. And then immediately jumped back in horror. "Mr. Bleeker," he gasped, "I don't know what came over me! I got carried away..." He leaned over to pull the knife out.

Dessaline seized his wrist. "Not just yet, Professor."

"But-- "

"No. We stick the pin in the doll. Now we wait. I think we do not wait very long."

"Wait? For what? What is this all about?"

"Dr. Dessaline means we are now waiting for a transatlantic telephone call," said Bleeker. "But we don't know how long it will take. Con, maybe you'd better take Professor Klapproth on to the airport."

Klapproth looked uncertainly at the faces around the table. He finally picked up his hat. It was clear that he considered himself among madmen. "Telephone call?" he muttered to Patrick.

"Yes, a Mr. Sasanov, in Czezhlo," explained Patrick. "Just now, you put a curse on his silamine plant, and Mr. Sasanov is going to call Mr. Bleeker and tell him he'll pay up his back royalties, and then he'll ask Mr. Bleeker to get the plant started again."

The visitor stepped back uneasily. "Don't bother about me, Mr. Patrick. I'll get a taxi at the desk."

The phone rang. Bleeker picked it up. "Yes, operator, Bleeker here. By all means, put him on. Comrade Sasanov, what a delightful surprise!"

In the excitement no one noticed Professor Klapproth's flight.
