Arkady and Boris Strugatsky

Six Matches

I

THE INSPECTOR laid aside his notebook.

"This is a very strange business, Comrade Leman. Very strange indeed."

"Do you think so?" said the Director of the institute.

"Don't you?"

"No, I don't. I think everything is perfectly clear."

The Director spoke drily, staring out of the window at the empty sun-flooded square. His neck had been aching for some time, and there was nothing of any interest on the square, yet he stubbornly kept his face averted. It was a kind of mute protest. The Director was young and inclined to be touchy. He knew quite well what the Inspector meant, but he did not think the Inspector had any right to harp on that particular aspect of the affair. The man's quiet insistence irritated him. "Why can't he leave well enough alone?" he thought in annoyance. "It's all as clear as daylight."

"It's not all clear to me," said the Inspector.

The Director shrugged his shoulders. He glanced at his watch and rose.

"Excuse me, Comrade Rybnikov," he said. "I have a class in five minutes. I'd better be going if you don't need me."

"Go ahead, Comrade Leman. I should like to see that, er . . . that 'personal laboratory assistant.' Gorchinsky is the name, I believe?"

"Yes, Gorchinsky. He hasn't come back yet. He will be told to see you as soon as he comes."

The Director nodded and withdrew. The Inspector looked after him with a quizzical expression on his face. "A little too cocksure, my friend," he said to himself. "Never mind. I'll get around to you eventually."

But the Director's turn hadn't come yet. There were more important things to be attended to first. On the face of it everything really did seem to be quite clear. Inspector Rybnikov of the Labour Protection Board could have written up his report on the "Case of Andrei Andreyevich Komlin, chief of the physics laboratory of the Central Brain Institute" without further delay. Andrei Komlin had performed some dangerous experiments on himself and had been rushed to hospital three days before where he still lay in a semi-delirious condition, his shaven head covered with some mysterious ringed bruises. He had lost the power of speech, was being treated with diverse stimulants and all that the doctors could say at this stage was that it was a case of extreme nervous exhaustion, which had affected the memory, speech and hearing centres.

As far as the Labour Protection Board was concerned this was an open-and-shut case. It was not a matter of machines or apparatus being out of order, or of carelessness or incompetence on anyone's part. There had been no violation of safety rules, at least not in the generally accepted sense. It was obvious too that Komlin had performed the experiments on himself in secret, and that no one at the institute had known anything about it, not even Alexander Gorchinsky, his "personal" laboratory assistant —although some of the other laboratory workers were of a different opinion on that score.

The Inspector was interested in another angle of the affair. A former research worker himself, Rybnikov sensed that behind the odd bits of information he had elicited concerning Komlin's work and this mysterious accident of his there lay some extraordinary scientific discovery. And the more he thought about it the more convinced he became that this was so.

Three months before the accident the laboratory had received a new apparatus: a neutrino beam generator. It was the advent of the generator in the physics laboratory that had set off the chain of events which, owing to what the Inspector considered downright negligence on the part of those concerned, had finally led to disaster.

Soon after the arrival of the generator, Komlin had turned over all his current work to his deputy and had shut himself up in the room where the new apparatus stood, announcing his intention to prepare a series of preliminary experiments. This went on for several days, at the end of which time Komlin reappeared, made his usual round of the laboratory, gave three staff members a dressing-down, signed some papers and ordered his deputy to get busy with the semi-annual report. The following day he locked himself up with the generator again, this time taking Alexander Gorchinsky with him.

What they did there came to light only two days before the accident, when Komlin had delivered a sensational report on neutrino acupuncture that had "shaken the foundations of medical science." But in the course of his three months' work with the generator Komlin had attracted the attention of his institute colleagues on three different occasions.

The first was when he turned up one fine day with his hair shaved off and a small black skull cap perched on his bald pate. That fact alone might have passed unnoticed had it not been for the peculiar behaviour of Gorchinsky that same morning. An hour after he and his chief had locked themselves in their laboratory, he came dashing out of the room, pale and dishevelled and rushed over wildly to the laboratory medicine chest. With trembling fingers he seized a few first-aid kits and dashed back to the generator chamber slamming the door behind him. Before the door closed, however, someone had caught a glimpse of Komlin by the window, clutching his left hand which was smeared with something that looked like blood. That evening Komlin and Gorchinsky had slipped quietly out of the neutrino chamber and hurried out of the laboratory

without a word to anyone. Both seemed extremely depressed, and Komlin's left hand was bound in a soiled bandage.

The next curious thing happened a month later. One evening a junior member of the staff named Vedeneyev met Komlin in a secluded corner of the Blue Park. Komlin was seated on a park bench with a thick and dog-eared volume on his knees, staring before him and muttering under his breath. Vedeneyev wished him a good evening and sat down beside him. Komlin ceased his mutterings at once and turned to him, his neck sticking out strangely. His eyes, according to Vedeneyev, had what he described as a "murky look" and the young man had a strong desire to get up and go at once. But since that did not seem the polite thing to do, he tried to make conversation.

"Reading, Andrei Andreyevich?" he inquired.

"Yes," said Komlin. "Shih Nai-ang, *River Backwaters.* Most interesting. Take this, for instance. . . ."

Vedeneyev was too young to know much about the Chinese classics and he felt even more uncomfortable than before. But Komlin suddenly closed the book with a bang, handed it to Vedeneyev and asked him to open it at random. Slightly embarrassed, Vedeneyev obeyed. Komlin glanced at the page ("once, and only for a moment"), and nodded.

"Now follow the text," he said.

And in his clear, distinct voice he proceeded to tell how one Hu Yang-cho, brandishing his sabre pounced on Ho Cheng and Se Pao, and how the "short-clawed tiger" Wang Ying and his wife "The Green Lady". . . . At that point Vedeneyev realized that Komlin was reciting the text from memory. He did not miss a single line, he did not stumble over a single name. He recited the entire page, word for word, letter for letter. When he came to the end, he asked:

"Any mistakes?"

Speechless with amazement, Vedeneyev shook his head. Komlin laughed, picked up the book and walked off. Vedeneyev did not know what to think. When he related

the incident to his comrades they advised him to ask Komlin himself for an explanation. But when Vedeneyev made some remark to Komlin about that meeting in the park, the latter seemed so genuinely amazed and puzzled that Vedeneyev dropped the subject.

But even more odd was what had happened a few hours before the fatal accident.

That evening Komlin, sparkling with gaiety and good humour, demonstrated some conjuring tricks to his colleagues. He had an audience of four—Alexander Gorchinsky, his adoring, unshaven assistant, and the three young girl assistants, Lena, Dusya and Katya, who had stayed behind to finish up some urgent work.

The tricks were quite sensational. To begin with Komlin offered to hypnotize someone, and when no one agreed, he told a funny story about a hypnotist and a surgeon.

"Now then, Lena," he said. "Would you like me to guess what you have hidden in the drawer of your desk?"

Two of his three guesses were correct. Dusya accused him of peeping. He denied the charge, but the girls continued to tease him, whereupon he announced that he could extinguish a flame merely by looking at it. Dusya snatched up a box of matches, ran off into a corner of the room, and struck a match. It flared up and went out at once. Everyone was amazed and all eyes were turned to Komlin. He stood with his arms folded over his chest, his brows knitted in the classical pose of the professional conjuror.

"What powerful lungs!" said Dusya admiringly. Komlin was standing a good ten paces away from her. Komlin then told them to tie a handkerchief over his mouth. When this was done, Dusya struck another match, and again it went out.

"Do you blow through your nose then?" said the amazed Dusya. Komlin tore off the handkerchief, burst out laughing and seizing Dusya waltzed around the room with her.

After that he performed two more tricks: he dropped a match and instead of falling straight down it fell sideways

at a considerable angle. ("You're blowing at it again," Dusya said uncertainly.) Then he laid a piece of tungsten spiral on the table and the spiral crawled over the glass top to the edge of the desk and fell on the floor. Everyone was astonished, of course, and Gorchinsky begged him to tell them how it was done. But Komlin suddenly turned serious and offered to multiply several sums in his head.

"Six hundred and fifty-four by two hundred and thirty-one and the result by sixteen," Katya said timidly.

"Take a pencil and write," Komlin ordered in a strained voice and proceeded to dictate: "Four, eight, one . . ." his voice dropped to a whisper, and he wound up in one breath: "Seven, one, four, two. . . . Right to left."

He turned (the girls were shocked at the change in him —his whole figure seemed suddenly to droop) and shuffled heavily over to the generator chamber and locked himself in again. Gorchinsky, who had been checking the figures, stared after him anxiously for a few moments and then announced that the answer was correct—reading the figures from right to left the answer was two million four hundred and seventeen thousand one hundred and eighty-four.

The girls worked until ten o'clock that evening. Gorchinsky also stayed behind, but he was too restless to be of much help to them. Komlin did not reappear. At ten they said good night to him through the door and went home. The next morning Komlin was taken to hospital.

The "official" result of Komlin's three months' research was "neutrino acupuncture," a method of treatment by directing streams of neutrinos at the brain. The new method was tremendously interesting in itself, but what was the explanation for Komlin's injured hand? Or his phenomenal memory? And what about the tricks with the matches, the spirals and his lightning calculation?

"He kept it all a secret from his colleagues," the Inspector murmured. "I wonder why? Was it because he was unsure of himself or because he did not want to endanger his comrades? Odd. Very odd indeed."

The videophone clicked and the face of his secretary appeared on the screen.

"Comrade Gorchinsky is here," she said.

"Show him in," said the Inspector.

II

A burly giant of a man in a checked shirt with rolled-up sleeves appeared in the doorway. The Inspector got the impression of a powerful neck, massive shoulders, and a large head covered with a shock of thick black hair, with, surprisingly, a small bald spot (two small bald spots, in fact) in the middle, for the man came into the room backwards. He was holding the door open for someone else who turned out to be the Director. The man in the checked shirt closed the door after him, then turned and made a curt bow. He wore a small but very bushy moustache and his expression was rather grim. This was Alexander Gorchinsky, Komlin's "personal" laboratory assistant.

The Director sank into an armchair and stared out of the window. Gorchinsky stood before the Inspector in an expectant attitude.

"Will you . . ." the Inspector began.

"Thanks, I will," boomed the laboratory assistant and sat down, placing his hands on his knees and turning a pair of steely grey eyes on the Inspector.

"Gorchinsky, I presume?" asked the Inspector.

"That's right. Alexander Borisovich Gorchinsky."

"Pleased to meet you. My name is Rybnikov, I am the Labour Protection Inspector."

"This is a pleasure, Inspector," drawled Gorchinsky with exaggerated politeness.

"You are Komlin's 'personal' laboratory assistant."

"I don't know what you mean by 'personal'. I'm a member of the staff of the physics laboratory of the Central Brain Institute."

The Inspector glanced quickly at the Director and caught a faint ironical twinkle in his eye.

"Do you mind telling me exactly what problems you have been working on during the past three months?"

"We have been doing some research in neutrino acupuncture."

"Could you be a little more explicit please?"

"There is a detailed report on the subject," said Gorchinsky stiffly. "You will find everything there."

"No doubt. Nevertheless I would be much obliged if you would clarify the term for me," said the Inspector very calmly.

For a few seconds the two men looked each other squarely in the eye, the Inspector's face slowly reddening, Gorchinsky's moustache bristling. At length the laboratory assistant narrowed his eyes.

"Very well," he boomed. "If you insist. We were studying the action of focussed neutrino beams on the grey and white matter of the brain, and on the animal organism in general. . . ."

He spoke in a flat toneless voice, and seemed to be swaying slightly as he spoke.

". . . Besides registering pathological and other changes in the organism, we measured the activated currents, differential decrement and lability curves in various tissues, as well as the relative quantities of neuroglobulin and neurostromin. . . ."

The Inspector leaned back in his chair, listening with mixed admiration and annoyance. "You just wait, my fine fellow!" he thought. The Director continued to stare out of the window, drumming his fingers on the table.

"Tell me, Comrade Gorchinsky, what has happened to your hands?" the Inspector asked, cutting the laboratory assistant short. The Inspector disliked being put on the defensive. He preferred to take the initiative.

Gorchinsky glanced down at his hands lying on the arms of the chair. They were a mass of scratches and dark blue scars. He made an involuntary movement as if to thrust them into his pockets, but instead he slowly clenched his huge fists.

"The monkey we were experimenting with scratched me up," he muttered.

"Did you experiment on animals only?"

"Yes. I experimented only on animals," said Gorchinsky, faintly emphasizing the "I."

"What sort of an accident did Komlin have two months ago?" the Inspector asked quickly.

Gorchinsky shrugged his shoulders.

"I don't remember."

"Let me refresh your memory. Komlin cut his hand. How did it happen?"

"How should I know? He just cut himself and that's all I know."

"Alexander Borisovich!" the Director said reprovingly.

"Why don't you ask Komlin himself?" Gorchinsky said defiantly.

The Inspector's eyes narrowed.

"You astound me, Gorchinsky," he said softly. "You seem to think I'm trying to pump you for information that might compromise Komlin . . . or yourself, or your colleagues. But it is all far simpler than that. You see, I am not a specialist in the central nervous system. Radio-optics is my line. That's all. What's more, I have no right to judge by my own personal impressions. I am not here to weave elaborate theories. I am here to discover the truth. And instead of helping me you behave like a hysterical woman. You ought to be ashamed of yourself."

There was a silence. The Director looked at Rybnikov. He began to understand the secret of this man's power. Gorchinsky evidently felt it too, because finally he blurted out, avoiding everyone's eyes:

"What is it you want to know?"

"I want to know more about this neutrino acupuncture, for one thing."

"It is Andrei Andreyevich's idea," Gorchinsky began in a weary voice. "Bombardment of certain regions of the cortex with streams of neutrinos induces resistance to various chemical poisons or toxins, or, to be more exact, sharply increases it. Infected or poisoned dogs recovered completely after two or three neutrino punctures, as we call it by analogy with the old method of inserting needles into the tissue. You see, the role of the needles is played

by neutrino beams. Of course the analogy is purely superficial. . . ."

"How is it done practically?" asked the Inspector.

"The scalp is shaved and compact devices for focussing the neutrino beams are attached to the bare skin by means of suction discs. To aim the beam at the required stratum of grey matter is not easy, but to locate the exact regions of the cortex that would stimulate phagocyte activity in the required direction is even harder."

"That is very interesting indeed," said the Inspector and this time he meant it. "What diseases could be cured by this method?"

Gorchinsky was silent for a few moments.

"A great many," he said finally. "Andrei Andreyevich believes that neutrino acupuncture has the effect of mobilizing, as it were, some unknown forces of the organism. Not only phagocytes, or nervous stimuli, but something far more powerful. But he did not complete his research. . . . He said neutrino bombardment would be able to cure any disease—toxic poisoning, heart disease, malignant tumours. . . ."

"Cancer?"

"Yes. And burns. . . . It might even be able to restore dead organs. He said that the stabilizing forces of the human body are tremendous, and that the key to them is in the cortex. One has only to find the exact points in the cortex for the punctures."

"Neutrino acupuncture," the Inspector said slowly, savouring the peculiar flavour of the words. Then he caught himself. "Very good, Comrade Gorchinsky. I am much obliged to you." (Gorchinsky smiled ruefully.) "And now be so kind as to tell us how you found Komlin on the morning of the accident. I gather you were the first to see him?"

"Yes. When I came to work I found him sitting, or rather lying in his armchair at the desk. . . ."

"In the generator room?"

"Yes. The focussing devices were attached to his skull with suction discs and the generator was switched on. I

thought at first that he was dead. I ran for the doctor. That's all."

His voice shook. The Inspector looked up quickly in surprise. He paused for a moment before asking the next question. The Director drummed loudly on the desk, staring into space.

"You say you don't know what Komlin's experiment was?"

"No," replied the laboratory assistant hoarsely. "I don't know. The laboratory scales and two boxes of matches stood on the table in front of him. The matches had fallen out of one of the boxes."

"One moment." The Inspector glanced at the Director and turned back to Gorchinsky. "Matches, you say? What could he have been doing with matches?"

"I don't know," said Gorchinsky. "There was a heap of them. Some were glued together in twos and threes. There were six matches lying on the scales. And a sheet of paper with figures. He had been weighing the matches. I know, because I checked the figures."

"Matches," murmured the Inspector. "Now why matches? Any idea, Comrade Gorchinsky?"

"No."

"Your colleagues mentioned something about matches too," said the Inspector, rubbing his chin thoughtfully. "Those tricks he performed . . . with fire . . . and matches. . . . Evidently he was working on some other problems besides neutrino acupuncture. But what?"

Gorchinsky said nothing.

"He frequently experimented on himself, didn't he? The skin on his skull is covered with the marks of those suction discs you spoke of."

Gorchinsky remained silent.

"Had Komlin ever displayed an ability to make rapid calculations in his head? Before he demonstrated those conjuring tricks, I mean?"

"No," said Gorchinsky. "I hadn't noticed anything of that kind. Well, now you know all that I know myself. Yes, it is true that Andrei Andreyevich experimented with

neutrino bombardment on himself. He cut his hand with a razor deliberately. He wanted to see how quickly neutrino acupuncture could heal wounds. It didn't work . . . that time. He was doing a parallel piece of research which he kept a secret from everyone. Myself included. I do not know what it was. I only know it had also something to do with neutrino radiation. And that's all."

"Did anyone know of this besides yourself?" the Inspector asked.

"No. Not a soul."

"And you know nothing about the experiments Komlin performed without your assistance?"

"Nothing."

"Well, that will be all," said the Inspector. "You may go."

Gorchinsky rose and strode to the door without looking up. Watching him go, the Inspector noticed again the bald spots on his scalp.

The Director stared out of the window. A small helicopter was hovering low over the square. Its silvery body gleamed in the sunlight as, swaying gently, it turned slowly around its axis and touched down. The door opened and the pilot in a suit of grey overalls jumped lightly on the pavement and walked briskly toward the institute, lighting a cigarette as he went. The Director recognized the helicopter. It was the Inspector's. The pilot had evidently been refuelling.

"Is there no danger of neutrino acupuncture affecting the mind?" the Inspector asked.

"No," replied the Director. "Komlin was quite emphatic on that point."

The Inspector leaned back in his chair and gazed at the ceiling.

"You shouldn't have been so hard on Gorchinsky. He won't be able to do a stroke of work today," said the Director in a low tone.

"Nonsense," said the Inspector. "I'm surprised at you, Comrade Leman. Tell me, how many bald spots is it normal for a man to have? And all those scars on his hands.

. . . If you ask me, Komlin has an extremely apt pupil in Gorchinsky."

"These men are passionately devoted to their work," said the Director.

The Inspector regarded him for a few minutes without speaking, his facial muscles working.

"I do not doubt that," he said. "Nevertheless, they still work in the old way, Comrade Leman. And, unfortunately, you encourage them. Look here, we are a rich country, the richest in the world. We give you scientists any amount of apparatus, all the experimental animals you want and everything else you need for your work. Then why do you permit your people to take such risks? You have no right to be so careless about human life."

"I. . . ."

"Why are you not fulfilling the April Directives of the Central Committee? Why are you not carrying out the decision of the Presidium of the Supreme Soviet? When will these scandalous practices stop?"

"This is the first time anything like this has happened at our institute," the Director said resentfully.

The Inspector shook his head.

"At your institute, perhaps. But what about other institutes? What about the factories? This is the eighth accident in the past six months. It's barbarous! Barbarous heroism! You can't keep them out of automatic rockets, out of autobathyspheres or reactors. . . ." He laughed drily. "They are trying to take a short cut to the Truth, to victory over Nature. But too often they pay with their lives. And now your Komlin has done the same thing. How could you have allowed it, Professor?"

The Director frowned.

"Sometimes it is inevitable," he said. "Have you forgotten all those doctors who used to inject themselves with cholera and plague germs?"

"Why must we go so far back? After all, that is ancient history by now!"

They lapsed into silence. Day was drawing to a close and grey shadows gathered in the corners of the room.

"Incidentally," the Director said, avoiding the Inspector's eye, "I ordered Komlin's safe to be broken open, and I have his notebooks. They might interest you."

"Most certainly," said the Inspector.

"Only I'm afraid you won't learn very much from them," the Director said with an apologetic smile. "It's all very specialized stuff. If you like I can take them home with me this evening and try to compile a digest for you. . . ."

The Inspector was frankly relieved at the suggestion.

"But you mustn't expect too much," the Director hastened to add. "These neutrino beams. . . . You know, it was like a bolt from the blue for all of us. No one had ever imagined anything like it. Komlin is a pioneer in this field, the first in the world. So I'm not sure I'll be able to make much of his notes either."

The Inspector sat for a while after the Director had gone, thinking over what he had heard. He fervently hoped that Komlin's notes would shed some light on the affair. He pictured Komlin seated at his desk with a set of electrodes on his shaven head, weighing matches glued together. No, acupuncture had nothing to do with it. This was something altogether new, something Komlin himself scarcely believed in, judging by the care he had taken to hide his gruesome experiments from his colleagues.

Yes, this was a wonderful age, the Inspector thought. Wonderful people too, these Communists of the fourth generation. Like their predecessors, they forged boldly ahead with little thought of themselves, from year to year advancing more and more daringly into the unknown. It required tremendous efforts to channel this vast ocean of enthusiasm so as to use it with maximum effect. Mankind's victory over Nature must be won through the medium of ingenious machines and devices and precision instruments, not by sacrificing the lives of its finest representatives. And not only because those who live today can accomplish far more than those who died yesterday, but also because Man is the most precious thing on Earth.

The Inspector rose heavily from his chair and limped

over to the door. He moved slowly and painfully for three reasons—in the first place by habit, secondly, he was beginning to feel his age, and thirdly, his leg bothered him.

"Those old wounds of mine," he muttered as he limped down the corridor.

III

Early next morning, at the very hour when the doctors, having failed to diagnose Komlin's complaint, noted with relief that the patient was regaining his power of speech, Rybnikov and Leman were sitting in the Director's office, facing each other again across the huge desk.

The Inspector had a thick notebook on his knees, while the Director was looking through a heap of papers—notes, diagrams, drawings and sketches.

The Director spoke rapidly, at times disjointedly. His eyes, red-rimmed from lack of sleep, looked through the Inspector. Now and again he would stop in the middle of a phrase as if astounded at the import of his own words. The Inspector listened intently, and gradually out of the vast mass of incredible facts and data a general pattern began to emerge. Here is what he learned.

Komlin was keenly interested in the effect of neutrino beams on brain tissue, firstly because literally nothing was known about it. It was only recently that streams of neutrinos of an intensity great enough to be of practical value had been obtained, and as soon as the neutrino generator arrived Komlin decided to see what could be done with it.

Secondly, Komlin expected a great deal from these experiments. High-energy radiation (nucleons, electrons, gamma rays) disrupted the molecular and intra-atomic structure of the proteins of the brain, in other words, destroyed the brain. It could produce nothing but pathological changes in the organism—this had been proved experimentally. The neutrino—that infinitesimally small neutral particle with no rest mass—was quite a different matter. Komlin assumed that it would produce no explosive reaction or changes in molecular structure, but would merely cause moderate excitation in the brain pro-

tein, strengthening the nuclear fields and perhaps creating new, hitherto unknown fields of force. All of Komlin's hypotheses proved to be correct.

"Much of what was in the notebooks is unintelligible to me," the Director interrupted himself to remark. "Some things I simply refuse to believe. That is why I am only giving you a very rough sketch in the hope that it will shed some light on the mystery of those conjuring tricks. Although that too is fantastic enough."

The idea for neutrino acupuncture struck Komlin as soon as he began experimenting on animals. The monkey he was working with injured its paw, and the wound healed with amazing speed. So did the dark spots in the animal's lungs, traces of tuberculosis so common in monkeys living in moderate climates.

The work on neutrino acupuncture proceeded successfully. Several dogs injected with diverse biological poisons were rapidly cured by the neutrino treatment. Komlin's needle (as Gorchinsky named the method) cured tuberculosis in monkeys dozens of times faster and more successfully than the most effective antibiotics.

At this stage there was no actual need for experimenting on human beings; Komlin was not yet working on the method of treatment, he was only proving its feasibility in principle. In his famous report he had voiced the assumption that the human and animal organism possessed some hidden curative powers which were so far unknown to science, but which had already manifested themselves during the experiments with neutrino acupuncture. He had worked out a detailed program for switching over from experiments on animals to experiments on human beings —a carefully thought-out fool-proof scheme, providing for a wide margin of error and for the gradual advance from the simplest and obviously harmless neutrino punctures to more complicated, combined ones. The program provided for the participation in the work of large groups of doctors, physiologists and psychologists. But. . . .

The Inspector had not been mistaken. Komlin had not only been working on neutrino acupuncture. Before long

the experiments with the neutrino generator showed that the extraordinary development of the curative powers of the organism, though important, was by no means the only effect of neutrino beams on the brain. The experimental animals behaved very strangely. True, not all of them and not always. It was observed that most of those that had been given brief treatments behaved normally, but the "favourites," those that had been subjected to numerous and diverse experiments, gave the two researchers some surprises. But while the young laboratory assistant Gorchinsky regarded their antics as amusing or annoying tricks of Nature, Komlin with his scientific intuition sensed that they were on the track of an important scientific discovery.

The dog Genny (short for "Generator") showed a sudden talent for circus tricks though no one had taught him; he would "shake hands," walk on his hind legs and even on his forepaws, and one day Gorchinsky had found him sitting on a stool, staring at one spot, and emitting short barks at regular intervals. He did not recognize Gorchinsky and growled at him.

The behaviour of Cora, the baboon, was still more curious. After a treatment, she had been sitting in the generator chamber with Komlin, "chatting" quietly with him, when suddenly she jumped violently as if she had received an electric shock. Staring fixedly at some invisible object in the corner of the room, she growled, whimpered and backed away in fright. Komlin tried his best to soothe her, but she would not be comforted. She sat huddled in fear against the wall for a whole hour, her eyes glued to the corner. Now and again she emitted a sharp cry—the danger signal. After a while the attack passed, but Komlin noticed to his surprise that Cora never entered the chamber after that without glancing fearfully at that particular corner.

One day Gorchinsky ran into Komlin's office in great excitement. "Come to the monkey house at once!" he cried. In one of the cages sat a young ape chewing on a banana. There was nothing unusual about the ape or the

banana, but both the watchman and Gorchinsky declared they had just witnessed something extremely odd. A few moments before, the ape had been intently watching a slip of paper that had been moving slowly toward it. As the animal reached out its paw to snatch the paper, Gorchinsky had rushed off to fetch Komlin. By the time they returned the paper was gone; the watchman insisted that the monkey had eaten it. At any rate there was no sign of it in the cage. An attempt to reproduce this strange phenomenon had failed.

"Here is what Komlin wrote on that score," said the Director handing the Inspector a piece of graph paper.

"Mass hallucination?" the Inspector read. "Or something quite new? Mass hallucination with the participation of an ape is remarkable in itself. There must be something else here. It is useless to try to find out anything with these animals—monkeys or dogs. I must try it on myself."

This Komlin proceeded to do. Gorchinsky soon found out and lost no time in following suit. They even quarrelled as a result, and in the end Gorchinsky promised not to experiment any more, while Komlin gave his word to try only the simplest, briefest and safest exposures. Gorchinsky did not even know that Komlin had stopped working on neutrino acupuncture.

"Unfortunately," the Director went on, "Komlin's records contain very little information about the truly astounding results of his experiments. His notes become increasingly fragmentary and illegible; one feels he was often at a loss for words to describe his sensations and impressions, and his conclusions are incoherent and diffuse."

The Director had found a few pages torn out of the notebook in which Komlin had described the extraordinary effect on his memory he had noticed after one of his experiments. "It is enough for me to glance at an object once for every detail of it to be stamped with amazing clarity on my memory. I have only to glance at the page of a book to be able to recite it from memory. I have memorized several chapters from *River Backwaters* and

the entire table of logarithms from the first to the last figure, and I believe I shall remember them to my dying day. What tremendous possibilities!"

"Memory, as well as many reflexes and habits," he wrote elsewhere in a firm hand, "have a definite material basis that is still unclear to us. This is elementary. The neutrino beam penetrates to this basis and creates new memory, new reflexes, new habits. Or merely causes their appearance indirectly. That is what happened to Genny, Cora and to me (mnemogenesis—the creation of false memory)."

The most interesting and astounding of all Komlin's discoveries were described in the last few pages of notes clipped on to the back of the book.

"Here is the answer to your questions," said the Director, waving these pages at the Inspector.

"This is a sort of synopsis or an outline for a report. Shall I read it?"

"Yes, please."

" 'We cannot even blink by merely willing it. The agency of a muscle is required. The nervous system only plays the part of the carrier of the impulse. This is an infinitesimally small charge, but it is enough to make the muscle contract and shift dozens of kilograms, in other words, perform a colossal amount of work in comparison with the energy of the nervous impulse. The nervous system might be called the detonator in an explosive charge, the muscle the explosive, and the muscular contraction the explosion.

" 'It is common knowledge that an intensification of the thinking process intensifies the electromagnetic fields arising somewhere in the brain cells. Hence biocurrents. The very fact that we can detect them shows that the process of thinking acts on matter—true, not directly, but through the electromagnetic field of the brain. The greater the intensity of the field, the greater the declination of the needle of the device measuring it. Is this not a psychomotor? The electromagnetic field is the brain's muscle.

" 'One develops, for instance, an ability to calculate at lightning speed. I have done it, but how, I cannot say.

I just do it. 1,919×237=454,803. I got this result in four seconds by the stopwatch. This is all very good, but not the real thing yet. The electromagnetic field is greatly intensified, but what about other fields, if they exist? The muscle is there, but how is one to actuate it?

" 'It works. I have just looked at a tungsten spiral weighing 4.732 grams suspended in vacuum from a nylon strand, and it swung out from its initial position more than fifteen degrees. This is already something. The generator regime. . . .' "

"I spoke to Gorchinsky this evening," said the Director, laying down the papers. "He has seen the vacuum bell jar with the suspended spiral, but it has since disappeared. Evidently Komlin took it apart."

" 'The psychodynamic field—the muscle of the brain—functions,' " he read further. " 'I don't know how it works, and that is not surprising. What does one do to bend one's arm? No one can answer that. To bend my arm I bend it. That is all. But the biceps is a very obedient muscle. Muscles have to be trained. The muscle of the brain must be taught to contract. The question is how?

" 'It is curious, but I cannot lift anything. I can only move things. But not in any specific direction. A match and paper always to the right. Metal toward me. It works best of all with matches. Why?'

" 'The psychodynamic field is effective through glass but not through paper. In order to act on an object I must see it. At the point touched by the field there is a violent disturbance of the air (I presume that is what happens). A match goes out. It seems this can be done at any distance within the bounds of the neutrino chamber.

" 'I am convinced that the potentialities of the brain are inexhaustible. All that is needed is training and activation. In time men will be able to do mental calculations better than any computing machine, and to read and commit to memory a whole library within a few minutes.

" 'It is very exhausting. My head is literally splitting. At times I can work only under constant radiation and

toward the end I break out into a sweat. I must take care not to overdo it. Today I am working with matches.' "

The notes ended there.

The Inspector sat with his eyes half closed, thinking. Komlin might well have hit upon an important discovery that would yield rich fruit in time. But in the meantime he was lying in hospital in a critical condition. The Inspector opened his eyes. His glance fell on the fragment of graph paper. " '. . . You can't do anything with monkeys and dogs. I shall have to try it on myself,' " he said. Could Komlin be right after all?

No, he was not right. He ought not to have taken such a risk, at any rate not on his own. Even when neither machines nor animals can be of any help, a man has no right to play with death. And that is exactly what Komlin had done. And because you, Professor Leman, do not understand this, because you approve of what Komlin has done, you are not fit to head this institute. We cannot let you sacrifice your lives, comrades. In our time we no longer need to take such risks. We can afford to check and double check. In our time your lives are far more precious to us than the most breath-taking discoveries.

Aloud he said: "I think we may consider the investigation closed. The causes of the accident have been ascertained."

"Yes," said the Director, "Komlin collapsed in the act of trying to lift six matches."

* * *

The Director escorted the Inspector to his helicopter. He walked beside the Inspector in silence, lost in thought, and with difficulty matching his pace to the other man's slow, limping gait. As they reached the craft, Alexander Gorchinsky, dishevelled and gloomy, caught up with them. The Inspector shook hands with the Director and climbed painfully into the cabin.

"My old wounds again," he muttered.

"Andrei Andreyevich is much better," Gorchinsky said.

"I know," said the Inspector, settling himself in his seat with a grunt of relief.

The pilot came up at a run and climbed quickly into his place.

"Will you write a report?" Gorchinsky asked.

"Yes," replied the Inspector.

"Hm . . ." Gorchinsky looked the Inspector in the eye, his whiskers twitching.

"By the way," he said in his high-pitched voice, "are you by any chance the Rybnikov who dealt with some high-explosive gadgets in Kustanai in 1968 without waiting for the automatic equipment to arrive?"

"Alexander Borisovitch!" said the Director sharply.

". . . That was when your leg was smashed up, wasn't it. . . ."

"That will do, Gorchinsky!"

The Inspector made no reply. He slammed the cabin door and leaned back in his seat.

Gorchinsky and the Director stood on the square watching the big silvery beetle as it floated almost noiselessly over the seventeen-story pink-and-white stone building of the institute and disappeared in the purple twilight.