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[Malinovsky]
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Red Star

[*The Flight to Mars*. Abridged]

CHAPTER V: DEPARTURE

... My attention was involuntarily devoted to the exciting and imminent moment of our take-off. I watched the snowy surface of the lake which lay before us and a beetling granite cliff behind us, expecting a sudden shock and their sudden disappearance as we ascended. But nothing like this happened at all.

Silently, slowly, with a barely perceptible motion, the snow-covered landscape began to leave us. For several seconds I was not aware that we had risen at all.

"The rate of increase is two centimeters," said Menni.

I understood what this meant. In the first second we were to move one centimeter, in the second—three centimeters, in the third—five centimeters, in the fourth—seven centimeters; thus our speed was to be constantly changing, at an arithmetically progressive rate. Within a minute we would reach the speed of a walking man, in fifteen minutes that of an express train, and so on. < . . . > The ground was rapidly leaving us and the horizon expanding. The dark masses of the cliffs and the villages were diminishing and the outlines of the lakes could be seen as on a map. The sky was becoming constantly darker; at the same time that the dark blue band of the unfrozen sea claimed the entire western horizon my eyes began to distinguish the brighter stars even with a noon-day sun in the sky.

The very slow spinning of the spaceship around its vertical axis made it possible for us to see space in all directions.

It seemed that the horizon was rising with us and Earth's surface below us appeared as a huge slightly convex dish with decorations provided by the Earth's relief. But their outlines became more blurred, the contours flatter, and the whole landscape appeared more and more like a geographic map, sharply delimited in its center, but vague indefinite at the periphery where it was draped in a semi-transparent, bluish fog. And the sky had become absolutely black and innumerable stars, even the most minute, shown down on us with their steady unwinking light, unafraid of the sun whose rays had become painfully hot.

"Tell me, Menni, will that two-centimeter rate of increase at which we are now moving continue for our entire journey?"

"Yes," he answered, "but half way through our trip it will be reversed and every second our speed will decrease by the same measurement. Thus, although the greatest speed of the spaceship will be about 2,000 miles an hour and the average speed about 1,000 miles an hour, at the moment of arrival it will be as slight as at the beginning of our journey, and without any shock or strain we will drop onto the surface of Mars. Without this great and variable speed we would not be able to reach either Earth or Venus because at their closest point—40 million or 65 million miles respectively—at the speed of, say, one of your trains, the journey would require centuries, not months as does ours. As to the possibility of a "cannon shot" such as I have read about in one of your science fiction novels, that would be only a joke, because in accordance with the laws of mechanics, to be inside a shell when it is fired would be the same as having the shell fired at you."

"But how have you achieved such a smooth deceleration and acceleration?"

"The motive force of the spaceship is provided by a radioactive substance which we have acquired in great amounts. We have found a method for increasing its radiation by a hundred thousand times; this occurs within the motors with the help of relatively simple electrical and mechanical devices. This procedure releases an enormous amount of energy. The particles of the radiating atoms disperse, as you know, at a speed which is tens of thousands greater than that of an artillery shell. When these particles issue from the spaceship in one direction, that is, through a channel with impenetrable walls, the spaceship moves in the opposite direction, as in the recoil of a gun. In accordance with the laws of motion you can calculate that the smallest part of a milligram of such particles in a second's time is fully capable of giving our spaceship its steady and variable movement."

While we were conversing all the other Martians left the room. Menni asked me to join him for lunch in his cabin and I left with him. His cabin was located against the outer wall of the spaceship and it had a large window. We continued with our conversation. I knew that soon I would experience a new feeling of weightlessness and I asked Menni about this.

"Yes," said Menni, "although we are still attracted to the sun, this force is insignificant. Tomorrow or the day after, the influence of Earth will also be imperceptible. Thanks only to the spaceship's constantly increasing speed we will retain 1/400 or 1/500 of our former weight. When this first happens it is not easy to make the adjustment, although the change will come very slowly. As you acquire lightness, you will lose your agility and make many incorrect calculations as you move so that you will commit many clumsy errors. The pleasure of soaring through the air will be of doubtful worth. As

regards unavoidable palpitation of the heart, dizziness, and nausea, Netti will be able to help you. You will also have difficulties with water and other fluids, which will escape from their containers when even slightly jarred and disperse in the form of spherical drops in the air. But we have taken strenuous efforts to prevent these inconveniences: furniture and dishes are fastened down, fluids are stored in closed containers, and there are handles and straps everywhere in case of sudden movements or falls. But you will become accustomed to these inconveniences; there is plenty of time."

Two hours had elapsed since our departure, and weight loss had already become rather perceptible, although it was still only something of a game; my body had become lighter and my movements freer, but nothing more. We had left Earth's atmosphere completely by now, but this was no cause for concern because there was an adequate supply of oxygen in our sealed airship. The segment of Earth's surface which we could see was now exactly like a geographic map—true, with a measure of distortion: larger in the center, reduced toward its edges; here and there it was covered with white puffs of clouds. In the south beyond the Mediterranean Sea, Northern Africa and Arabia could be seen rather clearly through a blue haze; on the north beyond Scandinavia the view was lost in a waste of snow and ice—only the cliffs of Spitzbergen showed dark. In the east beyond the greenish brown mass of the Ura1s, cut here and there by patches of snow, began a great white kingdom, at places with a greenish tint—a faint reminder of the great Siberian coniferous forests. To the west beyond the clear outlines of Central Europe the shores of England and Northern France were lost in clouds. I found myself unable to watch this grand picture for long, because the enormous void below us rapidly evoked a feeling in me close to fainting. I renewed my conversation with Menni.

"Then are you the captain of this craft?" Menni nodded and said:

"But that doesn't mean that I have the power of a commanding officer. It simply means that I have the most experience flying spaceships and my orders are accepted, the same way that I accept the astronomical calculations which Sterni makes, or as we accept Netti's medical advice because we want to retain our health and strength."

"How old is Dr. Netti? He seems very young to me."

"I don't remember, sixteen or seventeen," Menni answered with a smile.

That is about what I thought and I was astonished at such learning at his young age.

"A doctor at his age!" I burst out.

"And a proficient and experienced doctor at that," Menni added.

At the time I did not realize—and Menni intentionally said nothing about it—that Martian years were almost twice as long as ours: Mars' rotation around the sun requires 686 days and at sixteen Martian years of age Netti was about thirty years old by Earth time.

CHAPTER VI: THE SPACESHIP

After breakfast Menni led me on a tour of our "craft." First we visited the engine room. It occupied the lowest floor of the spaceship directly above its flattened base, and was divided by partitions into five rooms, one in the center and four accessory rooms. The engine stood in the center of the largest room and around it on four sides were round glass-covered windows in the floor, one clear, the three others of various colors; the glass was an inch thick and very pure. At any given time we could see only a part of Earth's surface.

The heart of the engine was a vertical metal cylinder about ten feet high and two feet in diameter, made, as Menni explained to me, out of a very dense precious metal related to platinum. Within this cylinder the radiation process took place; a panel six inches thick which glowed red with heat testified powerfully to the energy released by this process. But still it was not excessively warm in the room: the entire cylinder was surrounded by a double shell of some kind of a transparent substance which insulated the surroundings from its heat; above, one of the shells was connected to pipes through which the heated air flowed in all directions to warm the spaceship.

The remainder of the engine connected in various ways with the cylinder—electric coils, batteries, dials, etc.—surrounded it in an attractive fashion and the technician on duty, thanks to a system of mirrors, could watch them all without leaving his chair.

Of the accessory rooms one was an astronomical observatory, to its left and right were rooms for water and oxygen storage, while opposed to them on the opposite side was the calculating room. In the observatory the floor and the outer wall were of polished optical glass. They were so transparent that when I walked with Menni over the catwalks and decided to glance downward, I saw nothing between me and the void below us—and I had to close my eyes to end the excruciating giddiness. I kept my eyes to the side on the devices which were located in the spaces between the catwalks on complex frameworks suspended from the room's ceiling and internal walls. The major telescope was about six feet long but with a disproportionately large lens and, apparently also, increased powers of magnification.

"We use only diamond lenses" said Menni. "They provide the largest possible field of observation."

"What is the power of that telescope?" I asked.

"About 600x," Menni answered. "But when this is inadequate, we photograph the field of observation and examine the photograph under a microscope. This method provides a magnification up to 60,000 times and more; the photographic process takes not more than a minute's time."

Menni suggested I look into the telescope to see Earth which we had abandoned. He focused the lens himself.

"We are now at a distance of about 1,200 miles," he said. "Now do you recognize what you have in front of you?"

I immediately identified the Gulf of Finland which I had navigated many times in the service of the Party . . . I could see ships at anchor. With a turn of a lever on the telescope, Menni replaced the eyepiece with a camera, then a second later he removed it in its entirety and placed it in a large piece of equipment standing to one side which turned out to be a microscope.

"We are developing and fixing the photograph in the microscope without touching the film," he explained, and after a few minor operations, a half minute later, he offered me the microscope's eyepiece. With startling clarity I saw a familiar steamship belonging to the Northern Company as though it were only a few feet away from me; the photograph seemed to have depth and natural colors although it was translucent. On the bridge stood the gray-haired captain with whom I had talked a number of times. A sailor who was lowering a large container onto the deck was caught as he moved, as well as a passenger who was pointing out something with his hand. And we were 1,200 miles away . . .

A young Martian, Sterni's aide, entered the room. He was to make a precise measurement of the distance covered by the spaceship. We did not wish to disturb him and we left for the water storage room. Here was a large container with fresh water and equipment for purifying it. A host of pipes transmitted this water throughout the spaceship.

Next came the calculating room. Here stood a multitude of machines with dials and gauges unknown to me. Sterni was working at the largest piece of equipment. A long tape stretched out of it, no doubt the results of Sterni's calculations; but the symbols on it, as on the dials, were unknown to me. I had no desire to disturb Sterni or even to talk with him. We quickly passed into the last accessory room.

This was the oxygen room in which were stored more than twenty five tons of oxide compounds from which more than 10,000 cubic yards of oxygen could be extracted when needed; that quantity was sufficient for several journeys such as ours. The equipment necessary for the extraction of the oxygen was also located here. Here, too, was stored a supply of barites and caustic potassium for removing the carbon dioxide from the air, as well as sulphur anhydrides to remove excessive moisture and harmful gases. Dr. Netti was in charge of this room.

Then we returned to the central engine room and from there in a small elevator we went straight to the spaceship's upper floor. Here was located a second observatory identical with the first one, but with a glass roof rather than a floor and larger telescopes. From this observatory we could see the other half of space as well as the planet which was our destination. Mars, slightly out of the zenith, glowed red. Menni turned a telescope on it and I could easily see the outlines of the continents, seas, and canal system which

I knew from Schiaparelli's maps. Menni photographed the planet and under the microscope a more detailed map emerged. But I could understand nothing on it without Menni's explanation: cities, forests, and lakes could only be distinguished from one another by distinctions which were imperceptible and incomprehensible to me.

"How far away are we?" I asked.

"Now we are relatively close—about sixty five million miles."

"Why isn't Mars at the observatory's zenith? Are we flying obliquely to it, and not directly?"

"Yes, we have no choice. When we left Earth as the result of inertia we retained its motive speed around the sun—about 1,200 miles an hour. But Mars' speed is only about 960 miles an hour, and if we were to fly perpendicularly to both their orbits we would hit the surface of Mars with a lateral speed of 240 miles an hour. This would be very awkward and we must select a curving route which equalizes the excess lateral speed."

"In this case how long will our route be?"

"About 120 million miles, which will require not less than two and a half months' travel time."

If I had not been a mathematician these numbers would have meant nothing to me. But now I felt almost as though I had been caught up in some nightmare and I was eager to leave the calculating room.

Six lateral compartments of the spaceship's upper segment which surrounded the observatory totally lacked windows and their ceiling, which was part of the spherical skin of the spaceship, descended to the floor. In that ceiling were located large reserves of "negative-matter" whose repulsion to the earth counter-balanced the weight of the whole spaceship.

The intermediate floors—numbers two and three—were occupied by lounges, individual laboratories, living quarters, toilets, a library, an exercise room, etc.

Netti's room was next to mine.

CHAPTER VII: PEOPLE

My loss of weight was constantly more apparent and the increasing feeling of lightness was no longer pleasant. It was accompanied with a certain uneasiness and vague restlessness. I left for my room and lay on my bunk.

After an hour or two of immobility and serious thought I imperceptibly drifted into sleep. When I awoke Netti was sitting in my room next to the table. Involuntarily I sat up in bed, and as though something had thrown me I hit my head against the ceiling.

"You must be more careful when you weigh less than twenty pounds," Netti said in a genial voice.

He had come to see me with the special purpose of giving me advice in the case of "sea-sickness" which I already felt as the result of loss of weight. There was a special alarm in my cabin which I could employ to summon him if his help were needed.

I utilized the opportunity to talk with the young doctor—something attracted me to this appealing, very learned, but very vivacious lad. I asked how it had happened that he alone of all the Martians, with the exception of Menni, knew my language.

"There's a very simple explanation," he explained. "When we were searching for a human, Menni chose himself and me to visit your country and we spent more than a year there until we were able to conclude our business with you."

"That is to say, others were 'searching for a human' in other countries as well?"

"Certainly, they searched among all the major peoples of the world. But, as Menni foresaw, we found him first of all in your country, where people live most vigorously and vividly and where they must look to the future more than others. When we had found our human, we notified the others; they gathered together from all over the world and then we left."

"What do you really mean, when you say you were 'searching for a human' or 'found a human'? I realize that you were seeking a subject who could play a certain role, as Menni explained to me. I am very flattered to see that you chose me, but I would like to know too what you expect from me.

"I can tell you that, in general terms. We needed a human who possessed so far as it was possible the traits of good health and sturdiness, a capacity for intellectual labor, few personal ties on Earth, and a weak sense of his own individualism. Our physiologists and psychologists assumed that the transformation from your society, sharply divided by incessant internal warfare, to ours which is organized, as you would say, socialistically, would be a very difficult change for any individual and would require a very special personality. Menni decided that you came closer than anyone else."

"And did all of you accept Menni's opinion?"

"Yes, we all have complete trust in his analysis. He is a man of exceptional mental powers and insight, and he is rarely wrong. He has had more experience with humans than any of us; it was he who established our contact."

"And who was it that established the method of interplanetary communication?"

"That was the result of many individuals' labor, and not one man's. 'Negative-matter' was first obtained several decades ago. At first it was produced only in insignificant quantities, and it required the efforts of many workers to find and develop methods for producing it in large amounts. Then it was necessary to perfect a technique for obtaining a decomposing radioac-

tive material so we would have an effective engine for our spaceship. That also required a great effort. Then, there were many problems resulting from the difficult conditions of space travel with its terrible cold and burning sunlight not tempered by Earth's atmosphere. The calculations necessary for the journey also turned out to be not an easy task and presented difficulties which no one had foreseen. In a word, former expeditions ended with the death of all their participants until Menni succeeded in organizing the first successful flight. But, now, by employing his methods we recently reached Venus, too."

"If that's so, then Menni is a great man," I added.

"Yes, if you wish to give that title to a man who can indeed work long and well."

"That's not what I meant: ordinary people, those who take instructions, can work long and well. But Menni is obviously something else: he is a genius, a creative talent who has invented something new and thus led humanity forward."

"That's not clear, and it seems to me, it's not true. Every workman is creative, but it is humanity and the world which create in that workman's form. Isn't it true that Menni possesses in his hands all the experience of the preceding generations as well as that of contemporary scientists and wasn't this the source of all of his discoveries? And wasn't it the world which granted him all the elements and the germs of his new ideas? And weren't all the stimuli for these ideas the result of a struggle between humanity and its world? Man is a person, but his work is impersonal. Sooner or later he will die with all his joys and sorrows, but his work remains as part of the vast current of life. In this respect there is no difference between workmen; the only difference is between the scale of what they have experienced and what they leave behind them."

"But isn't it true that the name of such a man as Menni will not die with him, but will remain in the memory of humanity when the names of innumerable others have disappeared without a trace?"

"The name of every man is preserved so long as those are alive who knew him. But humanity does not need the dead symbol of a person when he is no more. Without regard for persons, our learning and our art preserve what has been accomplished by the commonality. The dead weight of names from the past is useless for humanity's tradition."

"Perhaps you are right; but our feelings reject that logic. For us the names of thinkers and doers are living symbols essential for our learning, our art, and our social life. It often happens that in the struggle for ideas and accomplishments a name says more than an abstract slogan. And the names of geniuses are not a dead weight in our tradition."

"That is because the common cause of humanity is still not yet a common cause; thanks to the illusions which arise as the result of the struggle

among men, it is fragmented and appears to be a cause of men and not humanity. It is as difficult for me to understand your point of view as it is for you to understand ours."

"Then for better or for worse there are no immortals among the crew. But the mortals here are among the most select, isn't that so? From among those who have 'worked long and well,' as you expressed it?"

"Yes, in general. Menni chose his comrades from thousands who wished to make the journey with him."

"And next to him, isn't Sterni perhaps the most eminent?"

"Yes, if you insist on measuring and comparing individuals. Sterni is a remarkable scientist, although of a completely different sort than Menni. He is a very gifted mathematician. He discovered an entire set of errors in the calculations which were employed to send the former expeditions to Earth, and he demonstrated that some of these errors were sufficient to destroy the projects and their participants. He discovered new methods for making such calculations and so far the results he obtained have been flawless."

"I gathered this was so from Menni's words as well as from my own first impression. But still, and I don't understand this myself, I don't know why the sight of him makes me so uneasy, and arouses a kind of unfounded antipathy. Do you have any explanation for this, doctor?"

"You see, Sterni has a great mind, but he is cold and above all, analytic. He dissects everything mercilessly and consistently but his conclusions are often narrow and sometimes extremely harsh, because his analysis of the details is not unified, and is less than the whole: you know that always where there is life the whole is more than the sum of its parts, just as a living human body is more than an assemblage of its members. As a consequence, Sterni does not understand others' moods and ideas. He is always willing to help you with your problems but he can never understand what you need. In part this is the result of his preoccupation with his work; his mind is always busy with some difficult problem or other. In this respect he is very unlike Menni: he always sees what is around him and sometimes he has been able to explain to me what I really want, or what is disturbing me, or what I long for."

"If that's so, then isn't Sterni rather hostile to the inhabitants of Earth who are so full of contradictions and inadequacies?"

"Hostile!—no; such a feeling is alien to him. But he is more skeptical than is necessary, I think. He lived in France for a half a year and wired Menni: 'Nothing here.' Perhaps he was partly right because Letta who was with him was also unable to find anyone of interest. But the characterizations he gave to the people of that country whom he met were much harsher than Letta's, and, of course, they were much more one-sided although there was nothing in them which could be called inaccurate."

"And who is this Letta you mentioned? I don't think I remember his name."

"A chemist, Menni's helper, not young, the oldest man on the spaceship. You will find him very accessible and that will be useful to you. He is gentle by nature and he understands others, although he is no psychologist like Menni. Visit him in his laboratory; he will be pleased to see you and can show you much that is interesting."

It occurred to me that we were now far from the Earth, and I wanted to look at her once more. We went to one of the accessory rooms equipped with large windows.

"Will we pass close to the moon?" I said as we walked along.

"No, the moon will remain well out of our path, and I'm sorry that this is so. I would like to see the moon up close. It seemed so strange to me from Earth—large, cold, deliberate, mysteriously serene; it is so different from our two little moons which fly so swiftly through our sky, changing their faces so rapidly like living and capricious children. True, your moon is much brighter than ours and her light is so pleasant. Your sun is brighter, too; in this respect you are much more fortunate than we. Your world is twice as bright as ours and so you don't need eyes like ours with their great pupils to collect the weak light of our days and nights."

We sat down at the window. Earth shone distantly below us like a giant sickle on which I could make out only the outlines of Western America, Northeastern Asia, a vague patch which was the Pacific Ocean and a white spot which was the Arctic. All of the Atlantic Ocean and the Old World lay in shadow; one could only surmise their existence beyond the uncertain edge of the sickle by the fact that the invisible part of Earth blotted out the stars over a great expanse of the black sky. Our curving trajectory and Earth's rotation on its axis led to this changing scene.

I looked and I was sorry that I could not see my native land where there was so much life, so many struggles, so much pain, where yesterday I had stood in the ranks with my comrades and where another was now to take my place. And my heart was filled with doubts.

"There, below us, blood is flowing," I said, and yesterday's worker is playing the role of a comfortable spectator . . ."

"Blood is flowing for the sake of a better future," Netti answered, "and for the sake of the struggle you must come to know that better future. That is why you are here—to gain that knowledge."

Involuntarily I pressed his little, almost childlike hand.

CHAPTER VIII: THE APPROACH

Earth was yet further now and, as though it were languishing, it was transformed into a crescent moon accompanied by another tiny crescent, the real moon. All of us, the inhabitants of the spaceship too were trans-

formed—into some kind of fantastic acrobats who could fly without wings and take any position in space, head to the floor or the ceiling or the walls, almost indifferently . . . Little by little I was coming to know my new comrades and to feel more at ease in their presence.

On the second day after our departure (we continued to count the days, although for us, of course, there were no real days and nights) on my own initiative I dressed in Martian clothing, so I would not be so conspicuous among the crew. True, I liked the costume for its own merits, since it was comfortable without any useless, purely conventional features such as neckties or cuffs and allowed maximum body movement. The individual parts of the suit were connected by small ties so that the entire costume was one whole, but at the same time, if it were necessary, it was simple to unfasten and remove, for example, one sleeve or both or the entire blouse. And the manners of my fellow-travelers were like their costume: simple and with an absence of anything that was superfluous or only decorative. They never greeted one another, nor said farewell, nor gave thanks, nor continued a conversation out of politeness if its end had been achieved; at the same time they patiently provided explanations which were painstakingly set at the level of the person with whom they were speaking and with understanding for his personality although it might very much differ from their own.

Of course from the very first I turned to the study of their language and they all, and particularly Netti, willingly played the role of teachers. Their language was very unusual: in spite of the simplicity of its grammar and the rules for word formation, some of its features gave me great difficulties. The rules of its grammar had absolutely no exceptions and there was no such thing as a gender, masculine, feminine or neuter; but instead all the names of things and qualities were inflected in time. This I could not absorb.

"What could be the purpose of such forms?" I asked Netti.

"Don't you understand? In your languages you are very careful to indicate whether you consider a thing to be male or female, which is, you must admit, of no importance at all; and as far as inanimate objects are concerned, more than strange. It's much more important whether a thing exists at the present time or that it did at one time or will come into being. In your language "house" is masculine, but "boat" is feminine, but in French the reverse is true—but this has nothing to do with the state of things. When you talk about a house which has burned down or which is yet to be built, you employ the word in the same form as when you talk about the house in which you live. Isn't there actually much more of a difference between a man who is alive and a man who has died—between what is and what is no more? You need whole words and phrases to indicate this difference—wouldn't it be better to indicate it by adding one letter to the word itself?"

But at any rate Netti was satisfied with my powers of memory and his

method of instruction was excellent and I made relatively rapid progress. This helped me in my dealings with the Martians—now I could confidently visit the entire spaceship, dropping into the rooms and laboratories of my fellow travelers and asking about anything which interested me.

The young astronomer, Enno, Sterni's aide, lively and cheerful, and still a lad, explained many things to me, obviously carried away, not so much by the measurements and formulas, of which he was a master, as by the beauty of what he was observing. I was happy to be with the young astronomer-poet; a very legitimate concern to orient myself in space gave me a constant excuse to spend time with Enno and his telescopes.

One time Enno in the greatest excitement showed me the tiny planet, Eros, a segment of whose orbit passed between the paths of Earth and Mars but which otherwise lay beyond Mars in the asteroid belt. Although at the time Eros was located 100 million miles from us, a photograph of its tiny crescent under the microscope was like a whole geographic chart, like the maps of the moon. Of course it was also as lifeless as the moon.

On another occasion, Enno photographed a flight of meteors which passed several million miles from us. The picture showed, naturally, only an indefinite haziness. At the time Enno told me that on one of the previous expeditions to Earth a spaceship was destroyed when it passed through such a flight. Astronomers who were following the spaceship in their telescopes saw how its electric lights were extinguished—and the spaceship disappear in space forever.

"The spaceship probably collided with several of these small bodies and because of the great difference in speeds they must have passed right through its walls. Then the air escaped out of it and the chill of interplanetary space froze the travelers. Now the spaceship is still flying, continuing its journey in a comet's orbit; it has left the sun forever and no one knows where it will end, a terrible craft manned by corpses."

As Enno spoke I could feel the cold of empty space invade my heart. I imagined our minute, glowing island in the midst of an endless dead sea, without any support moving at a dizzying pace with only a black void around us . . . Enno guessed how I felt.

"Menni is an excellent navigator," he said, "and Sterni makes no mistakes . . . And death . . . You've seen it before during your life . . . Death is death, nothing more." Soon the time would come when I would remember those words in my struggle with a great spiritual sickness.

I was attracted to the chemist Letta not only because of his extraordinary gentleness and sensitivity, which Netti had told me about, but also because of his enormous knowledge of the field which interested me more than any other—the nature of matter. Only Menni was better informed on this question, but I tried to have as little as possible to do with him, knowing that his time was too valuable both for science and for the interests of the expedition,

so that I had no right to distract him for my own purposes. But Letta, a kind old man, was so endlessly patient with my ignorance and so helpfully explained to me the basic facts of the subject, even betraying pleasure when he did so, that I always felt quite unconstrained in his presence.

Letta began to deliver a whole series of lectures to me on the theory of matter, illustrating them with a number of experiments on the decomposition and synthesis of the elements. He had to omit a number of the relevant experiments—limiting himself to a description of them—which were violent in nature and were accompanied by an explosion or which might take that form.

During one of these lectures Menni entered the laboratory. Letta was finishing the description of a very interesting experiment and was about to begin its execution.

"Be careful," Menni told him, "I remember once when I performed it, it came to a bad end; only a trace of impurities in the substance which you are decomposing and even a weak electrical spark is enough to cause an explosion when you are heating it."

Letta wanted to abandon the experiment, but Menni, who was invariably thoughtful and considerate in his relations with me, offered to help him check the elements of the experiment; the reaction occurred without difficulty.

The next day there were to be more experiments with the same substance. It seemed to me that Letta did not take his materials out of the same container as the previous day. When he placed the retort in the electric furnace it occurred to me to say something to him. Disturbed, he immediately went to the locker where the reagents were stored, leaving the furnace and the retort on the table near the wall which was also the outer wall of the spaceship. I went with him.

Suddenly there was a deafening roar and both of us were blown against the locker with great force. This was followed by a deafening whistle and howling and the sound of breaking metal. I felt an irresistible force, like a hurricane, pulling me back toward the outer wall. I had time to seize a firmly attached strap on the locker and hung horizontally, held in that position by a powerful stream of air. Letta did the same thing.

"Hold on!" he shouted and I could hardly hear his voice in the midst of the storm.

Letta quickly looked around. His face was terribly pale, but the appearance of indecisiveness was replaced by one expressing thought and firm decision. He said only two words—I couldn't make them out, but it seemed that he was saying farewell forever—and his hands relaxed their grip.

There was a dull blow and the hurricane ceased. I felt I could release my hold and looked around. The table was completely gone and against the wall, his spine flat against the wall, stood Letta. His eyes were open wide and his face seemingly frozen. In one leap I reached the door and opened it.

A stream of warm air threw me back. Menni entered the room in a second and quickly went up to Letta.

A few seconds later the room was full. Netti entered, pushing everyone to the side and rushed to Letta. All the rest of us surrounded them in painful silence.

"Letta is dead," Menni said. "The explosion which occurred during the experiment punctured the spaceship's wall and Letta closed the aperture with his own body. The air pressure ruptured his lungs and paralyzed his heart—it was a quick death. Letta saved our guest's life—otherwise they would both have died."

Netti suddenly burst into tears.

CHAPTER IX. THE PAST—[The chapter consists of an unambiguous rehashing of history from a dialectic point of view—shown to be equally applicable to Mars and to Earth—which supposedly led the much older Martian society to a classless paradise after the building of its canals. A. L.].

CHAPTER X. ARRIVAL

Under Menni's cool hand the spaceship made its way without further mishaps toward its distant destination. I had become tolerably accustomed to conditions of weightlessness and I had mastered the major difficulties of the Martian language when Menni announced that we had completed half of our journey and had achieved our maximum speed, henceforth to decline.

At a time carefully determined by Menni, the spaceship swiftly and smoothly reversed itself. The Earth, which had been a great and brilliant sickle, then a smaller one, and then a greenish star close to a sun's disk, now left the lower half of the black sky and entered the upper half, while the red star of Mars which had shown bright above our heads was now below us.

After many days had passed, the star of Mars became a clear small disc with its two stars, its satellites, Deimos and Phobos, innocent, miniscule, undeserving of their threatening Greek names "Horror" and "Terror." The Martians were now elated and frequently visited Enno's observatory to view their native land. I too observed it but found it difficult to understand that I saw in spite of Enno's patient explanations. There was much there, in fact, which was strange to me.

The red spots were forests and meadows while the dark places were fields ready for the harvest. The cities were bluish patches—only water and snow had their familiar hues. The ebullient Enno sometimes asked me to identify what I saw in the eye-piece and my innocent misinterpretations vastly amused him and Netti; I in turn repaid them for their jokes, calling their planet a kingdom of learned owls and confused colors.

The dimensions of the red disk were constantly increasing—now it was much larger than the noticeably diminishing sun and it looked like an astronomical chart without labels. The force of gravity also was increasing which was surprisingly pleasant to me. From bright specks of light Deimos and Phobos were transformed into tiny, but well-defined circles.

Fifteen or twenty hours later Mars, like a flattened ball, opened out below us and with the naked eye I could see more than was shown on all our scientists' astronomical charts. Deimos glided over that round map, but Phobos was nowhere to be seen—it was on the other side of the planet.

Everyone around me was rejoicing; only I was beset by uneasy foreboding.

Closer and closer . . . No one could work any longer—they all were watching the ground below us, a different world, their native land, but for me a place of mystery and the unknown. Only Menni was absent—he was at the engine; the last hours of the journey were the most dangerous time and he had to regulate the craft's speed and verify its distance from Mars.

And what was the matter with me, the involuntary Columbus of this world, why did I feel no joy, no pride, nor even the peace of mind which dry land should have brought me after journey across the seas of the Unknown? Future events had already cast their shadow over the present...

Only two hours remained and soon we would enter the planet's atmosphere. My heart began to pound; I could not watch any longer and I went to my room. Netti followed me.

He began to talk to me, not about the present, but the past, and the distant Earth high above us.

"You will have to return there after you have completed your assignment," he said, and his words were a gentle reminder of my own courage.

We talked about assignement, its importance and its problems. Time passed for me unnoticed.

Netti looked at the chronometer. "We are there, let's go to my people!" he said.

The spaceship stopped, broad metal doors opened and fresh air streamed in. Over our heads was a clean greenish-blue sky and around us were crowds of people.

Menni and Sterni were the first to leave, carrying in their arms a transparent coffin where lay the frozen body of Letta, their dead comrade.

The others followed after them. Netti and I were the last to leave and hand in hand we made our way through the throngs of people all of whom looked like him...

[End of Part I]

Translated by Leland Fetzer