

**A. Belyaev**

***Wonderful  
eve***

***Kets  
star***

**"Classics fantasy" 4**

A. Belyaev

**Classics fantasy – 4**

«Издательские решения»

**Belyaev A.**

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KETS STARIdedicate Konstantin Eduardovich Tsiolkovsky's memorieThe story popularizes K. E. Tsiolkovsky's ideas and is rich not only scientific knowledge of astronomy, aerodynamics, physics, archeology, history, turning into fascinating support of school textbooks, but also masterpieces of "space painting".

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# **Classics fantasy – 4**

**A. Belyaev**

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# WONDERFUL EYE

## PROLOGUE

The ocean steamship was called “Leviathan” by right. It was the real floating city with “streets”, gardens, the areas, movie theaters, concert halls, fountains, pools, sports grounds, gardens greenhouses of tropical plants. On soft carpets of long corridors the drilled footmen in a uniform quietly slid. Doors of cabins, walls, panels gleamed mahogany, sparkled the polished copper. In the rooms occupied by passengers there was a peculiar smell – mix of expensive spirits, soaps, cigars, leather suitcases and still something imperceptible, the ocean brought, probably, by fresh breath.

On the main open deck, under a wide awning, having taken cover from the heated beams of the sun, passengers had a rest. Convenient wicker white chairs were placed between palm trees, bushes of the blossoming oleanders and fragrant gimanantus. Fountains murmured.

Deep blue of Gulf Stream seemed motionless. Here and there reddish islands of the seaweed brought by a current from the Sargasso Sea were seen. Flying small fishes jumped out from water and flew near the ship, shining fins. They fell on water, again flew up as if wanted to entertain passengers.

– Oh, as hot! At least the breeze blew – told, being answerable, the portly, red-cheeked passenger of years of fifty. He sat in a deep chair and fanned with a white silk scarf. Perfectly sewed white suit, a massive gold ring, a gold chain of hours on a vest and gold points gave it a type of the successful businessman.

– Nevertheless it is fine! – looking through the lowered a little eyelids in the shining distance, it continued. – “Leviathan” – the real floating palace. With comfort, it is convenient and, the main thing, absolutely safely. So? What can happen to such giant?

And the passenger raised eyes on the neighbor, the person of uncertain years, in a light gray suit. It had a pale face, a hollow breast, big thoughtful black eyes, dense eyebrows, an aquiline nose. Frenchman? Spaniard? Commission agent? Land owner? You will not sort. In any case, not the millionaire...

Looking after rings of cigar smoke, the neighbor shrugged shoulders and answered with a deaf voice:

– I heard, “Leviathan” is insured for such sum that on only one annual insurance premiums it would be possible to construct the quite good coasting steamship.

– What do you want to tell these? – the fat man pricked up the ears and breathed heavily.

– You the businessman, and it is easy to you to draw a conclusion: if there was no risk, the steamship company would not throw out a heap of money for insurance. Swisses do not insure the dwellings against floods, and Dutches – against earthquakes ... – the Person with a pale face became silent, and the businessman breathed heavily even stronger.

– Remember tragic destiny of “Titanic” – continued thin after a pause. – “Titanic” a little than conceded to “Leviathan”. And Pasifik? And Luzitaniya? Yes unless it is a little possible to bring similar examples. At the sea it is impossible to be charged for anything.

– Luzitaniya it was sunk by a mine during war. “Titanic” was lost, having run into an underwater iceberg – the fat man objected, considerably worrying. – On “Leviathan” there is a special device, some radio tool which signals about approach of the submarine. On a case of the fire the automatic alarm system is also installed...

– And the steamship after all is insured – thin did not calm down. – Collision in fog and unless is not enough reasons... And then... These palm trees, pools, concert halls – all this is good and whether the ship with enough boats and saving belts in case of accident is provided?

– I... do not know – the fat man answered.



– And I know, counted.

– Well and that?

– Two thirds of passengers will remain without boats – thin quietly answered.

– No, at you today simply bad mood, Don Hurges, and you want to spoil it and me! – the fat man exclaimed.

– — Don Hurges answered at all and slightly considerably grinned. – I only soberly see things. It is necessary to be always ready to everything... However why my words excited you, Mr. Williams? You so are afraid for the precious life?

– Not only for life – Williams mysteriously answered, fitfully brushing away the person with a scarf.

– Reasonably. There are values which are more expensive than own life – Hurges also mysteriously said.

From the average deck cheerful sounds of the jazz reached. Music distracted attention of the fat man from sad thoughts a little. Williams even began to pritopyvat in a step, but his face remained gloomy.

– You told, it is necessary to be ready to everything – he addressed Hurges again. – What readiness you had in a look? Psychological?

– Of course, psychological first of all – Hurges answered. – The one who is ready to everything for certain will not become puzzled during the first instant, this main thing will not give in to panic, and. We have to have the ready plan of rescue and ourselves, and those values which we carry.

– You have such plan? – Williams asked.

– Yes, I considered it to the smallest details still at home. I, apparently, provided everything: both fire and accident...

– It would be interesting to get acquainted with your plan, Don Hurges.

Hurges shrugged shoulders:

– It is unlikely it is useful to you. My baggage is small; I do not know yours. Each plan has to be individual.

– My baggage! – Williams heaved a deep sigh.

The jazz raved. Young couples danced on the middle of the deck. Laughter, cheerful exclamations were heard. The chosen by fate played with the intoxicating jazz sounds, in the joyful afternoon, with an azure and clean air of the ocean.

And suddenly short push. One of the dancing young guys fell. Laughter was heard.

– Earthquake... Vodotryaseniye...

– My God that it? – a tongue twister Williams uttered. He instantly turned pale. – Whether you cawed? – Williams spitefully looked at Hurges who was quietly smoking a cigar.

The steamship still cut ocean waters. Dances were started over again, however someone went to learn that he happened.

– Attention! Attention! – unexpectedly was distributed from loudspeakers on decks, floors, in corridors, cabins. – There was a small accident. Slightest danger to the vessel. We ask not to worry. The second change of crew has to come to work immediately.

– What happened? – was heard from everywhere.

Nobody could answer. The jazz rattled still, but dances fell apart.

Williams's chair pulled with such force that he, being afraid to fall, grasped Hurges's chair. Many passengers fell. The frightened woman cried. Its hysterical shout was picked up by others.

– Work involving all hands! – the voice from a loud-speaker was again carried. – Accident, but anything serious. Passengers are recommended to keep full calm. Disperse on cabins.

Williams almost jumped out of a chair and, uneasy, ran before Hurges.

– Business takes a serious turn, oh, damn! How you assume, we will not drown?

Hurges shrugged shoulders again.

– “Leviathan” has partitions – he answered. – If he received a hole, then water will not pass further the first partition. Besides we on one of “crowded” sea roads: Buenos Aires – London. “Leviathan” will cause the help on radio. And still it is necessary to be ready to everything.

The steamship sharply decelerated. The stern considerably fell. On the vessel panic began.

– Don Hurges, we sink! We sink! – almost Williams shouted. – It is necessary to be ready to everything... Your plan, Don Hurges?! I do not want to die! And I... My baggage... my life... Ecuador. Twenty two years of deprivations, work... Kegs... Boats... To sink... and when – not during a storm, at the sun... Calm... Mirage... Bad dream... Nightmare!

– Passengers are offered to put on saving belts – the team thundered.

– My God! My God, do not leave me! – Williams cried and, having clutched at the head, ran.

Hurges slowly moved to a cabin, took out from a suitcase a plate from dark metal with a chain and the lock on it, a bottle with a hermetic cover and went to a rostrum.

– Don Hurges, you here? I look for you on all steamship – Williams called it. On it there was already a saving belt. – And why you without belt? Unless it is not in your plan?

– Does not enter – Hurges answered. – My friend, the skilled captain, said to me that he against saving belts: they only extend sufferings of sinking... However, it concerned the cold seas. What after all happened to “Leviathan”?

– Nobody knows anything. Even the captain if only he does not hide the reasons...

“Leviathan” was doomed, in it there was no doubt left. The stern was covered by water. The order was heard: to lower boats. Panic bustle began. Near boats animal fight for existence was started. Hurges appeared the rights: there were not enough boats.

– Why you do not hurry to boats? – Hurges asked.

– Because I managed to draw up the plan and even to carry out it – Williams answered. The smile flashed on his turned pale person. – If only only they were not late... Oh, gold reigns over the person while he is living. I promised sailors a keg... And maybe, everything will manage. The radio operator transmitted a distress signal, and say that to us to the aid two steamships already hurry... Here they... Here.

– Steamships?

– Well.

Hurges uvidat sailors who dragged kegs, being torn through crowd to the boat hanging on a nose.

– Get quicker into the boat! – Williams shouted.

– I did not implement the plan yet – Hurges answered. It passed a chain throughout a link of an anchor chain, clicked the lock, attached a metal plate to a chain. Then quickly wrote a note, put it in a bottle, densely fitted a hermetic cover. He briefly answered amazed looks of Williams:

– It is my baggage. Result of my life.

Sailors flung away passengers and loaded kegs in the boat.

– An overload – shook-headed Hurges, looking at heavy kegs.

– I cannot leave them – Williams told.

The boat was floated. Ten sailors, Hurges, Williams, kegs with gold, crackers, a water barrel... The boat was overloaded and settled to boards. And drowning clung to boards. Sailors ruthlessly struck them a bargain oars, knives and fists.

– To manage to drive off quicker from the sinking steamship!. – Williams the shivering bloodless lips muttered.

The boat did not manage to sail also twenty meters as the steamship, having become a nose up, went to a bottom. Over the place of death the huge water column was reared, hard settled and rushed a mad shaft. The shaft rushed to the boat.

– End! – Williams screamed.

– Any end can be also the beginning – Hurges quietly answered and threw a bottle in water. It were his last words.



Water covered the boat, muffled the last shouts of drowning. In two hours to the accident site there arrived the first steamship which accepted distress signals.

## FOR THE GROUPEE

On a long table – a black sphere with a diameter of one and a half meters. Its one side is cut off. The wide window comes to Kola Bay. There masts and pipes of trawlers of fish trust are seen. However nobody looks out of the window. Eyes of all are turned towards a black sphere. Twelve Komsomol members, members of a circle on studying of radio engineering, a close ring surrounded a table. The majority – students of sea technical school, a part – radio operators from trawlers.

Motya Ginzburg, the designer, the inventor and the head of a circle, the radio operator of the trawler “Sergo Ordzhonikidze”, patting a palm on a black metal surface of a sphere, asked with a smile on a clever thin face:

– You see an eyeball...

Kruzhkovtisa laughed:

– Pretty apple!

– What has to be an orbit to contain such apple!

– The sea will be an orbit. There is enough? – Motya asked. – It is a radio eye by means of which we will see what is created in sea depths.

– TV! – one of standing near a table exclaimed.

As a matter of fact, Motya did not invent anything or almost anything. It happened to it to see photos of the American and German TVs adapted for observations at a sea depth. However, it were photos. But the principle of operation of the TV is known. It was necessary to think over independently some design features of the underwater TV. And Motya as if successfully coped with it: the small skilled TV worked regularly. Why not to work also to it, big? It is almost ready. To insert into a round opening a lens, near it – a lamp of searchlights, and all. In a word, hour two installation works, and the TV can be omitted in water.

– To look what becomes at the bottom of the sea? – the first-year student of sea technical school asked.

– Exactly. To look, how are sea crabs – picked up, indulgently smiling, his neighbor who considered himself the person skilled.

– Well, and it is interesting – Ginzburg seriously answered.

– Let’s catch groupers?

– Yes, yes. Today – the first test. The trawler leaves an hour zero-zero. By this time we will manage to finish – Ginzburg answered and ordered: – And well, boys, for work!

Listeners left, and five people, led by Ginzburg, remained and started business.

– And you know who will be with us on trial fishing? – Motya asked the companions. – Blasco Azores, Spanish communist, correspondent. It arrived to us recently to examine new Murmansk.

Azores left hotel of trust at midnight and went on descent to trawling base. The Spaniard shrank in the autumn coat. Icy midday wind hit into a face. The sleet fell.

“Amazing region! – Azores reflected. – Here all on the contrary: “solar nights”, “night days”. In these regions people choose apartments as windows not on the South, and on the North because a north, flying by over a warm current

Gulf Stream, heats up, and southern – it is cooled over an ice plateau of the tundra. Severe land, heavy climate. But you do not feel all this, even you do not notice – the person is so interesting here and put him”.

Below fires of trawling base burned. Highly cases of fish-processing shops rose. Winch chains rattled. The pier had trawlers. One unloaded, others prepared for departure. Conveyors scurried about: to warehouses – with fish, from warehouses – with salt. Azores quickly passed in the end of pier to the big trawler. There was an outflow, and the board of the trawler rocked almost level

with pier. Azores ascended aboard and rose to the captain's cabin. The captain Makovsky welcomed it and asked to pass in the cabin. Azores entered.

The cabin of the captain consisted of two tiny rooms: office bedroom and drawing room. In the first there was a small written little table, above it – a big oil lamp (on a case of damage of electric lighting), and two chairs attached to a floor by chains (on a rolling case). Now chains drooped, and chairs could be moved. In a niche, behind a curtain – a bed, nearby – an entrance to bathing “room” in which, probably, it was hardly possible to take off clothes. In “drawing room” – an angular sofa and a little table before it. On a little table – a tea service, cookies...

The red varnished tree, the shining copper parts, tooled leather, glass, light, heat, heaters, fans... Here it was silent and with comfort, as in a compartment of pullman cars.

The captain in the cabin disposed. From the coast kicked off. The steamship slowly and carefully began to turn. Azores looked through a big window of a cabin at the coast. Trawlers, the lit windows of the pickling shop, the high, overgrown low birches opposite coast of Kola Bay flashed... Speed of the course increased. Rolling was not.

The captain transferred control to the assistant and came to a cabin. Both are Azores and the captain Makovsky – not bad knew English. As the hospitable owner, the captain gave some tea. The conversation was started. Azores was interested in the underwater TV.

– You saw groupers? – the guest's captain asked.

– Of course. Big fish with the red eyes which are getting out of orbits – Azores answered.

– And why they red also get out of orbits?

Azores shrugged shoulders. The captain grinned and continued:

– It because grouper very timid fish; having appeared in a trawl, he dies of a fright, and from a fright of an eye at it get out of orbits... I had to hear similar explanations from old fishermen more than once. Certainly, it is the fable. The grouper lives at a depth of many tens of meters. And it began to come across in our trawls only recently when we learned to lower trawls deeply. And here, when the perch is snared and he is quickly pulled out on a surface where pressure is several times lower than for what the perch is adapted, eyes it are poured by blood and leave orbits.

– It is very interesting – Azores noticed – but at what here the TV?

– And here at what. A perch – tasty, useful, fat fish, and it is deeply very difficult to find her! We float by the sea, somewhere under us the most enormous schools of fish – hundreds, thousands of tons float. But we do not see this fish and after many days of heavy swimming often we come back home with empty holds. The people wait from us for fish, and we have a failure behind failure. Frustration of the plan, the administration tears and throws, seamen are nervous...

– But you often lower a trawl and find fish – Azores objected. – I saw what rich catch of the same perches gets to your trawls.

– And how many they do not get, nobody sees it – the captain interrupted. – To one trawler will have the luck to come across a jamb, to another is not present. Game of a blind case. Where it is good? There are days when we tens of times lower a trawl and pull out only seaweed, crabs and stones. The trawl often clings to soil, is torn about sharp stones. We do not see a bottom surface. We catch blindly. However, our scientific researches help us. Perseus surveyed a seabed, studied the course of fish, water temperature at different depths and something other. It helped, but nevertheless the case is not defeated. We live Gulf Stream, and it is whimsical. Sometimes it changes a current a little: sometimes happens warmer, sometimes – colder. And fish visits our coast, disappears, otkochevyvy there where water is warmer. Where last year fish was caught perfectly, today – any catch. And it only because for thousands of kilometers from us, in the Gulf of Mexico, the summer was colder usual or in Iceland the winter became rough. We called to the aid the sonic depth finder and radio lot. The principle of operation of the sonic depth finder is familiar to you? We send under water a sound wave, well, say, explosion of the boss or blow of a bell down. The sound wave reaches a bottom, is reflected and comes back. Knowing sound speed in water, it is possible to determine depth. If

the sound comes back quickly, so the sound wave is reflected not by a bottom, but a big congestion of fish. This way is extremely productive and useful, but also it has shortcomings.

Radio lot showing depth on speeds of reflection of a radio beam, and the sonic depth finder everyone “are in own way blind”. To them all the same from what radio beams or a sound wave are reflected. For example, the sonic depth finder showed smaller depth in such place. You think: the sound was reflected from a fish jamb. You will lower a trawl – a uniform small fish. The sound was reflected or from the sunk ship, or from the underwater rock. Other business when we have an opportunity to see what becomes in sea depths. Then we will double, we will treble a catch.

– And the TV will help to reach it?

– We hope.

After tea the captain went to the cabin. Azores remained alone. It began to put the notes in order. Began to stir the trawler stronger.

“We take to the open sea” – Azores guessed, threw a coat and came to the deck.

Strong wind, sleet, splashes... Strongly swung the trawler.

“And so day and night, in the summer and in the winter, during a calm and during a storm fight against the sea lasts – Azores thought. – It would seem, incredibly hard work. But what at them at all cheerful, cheerful faces! Jokes, laughter, songs...”

The trawler safely cut gray-haired waves, heading for the Bear island. Ginzburg’s assistants in heavy sea boots, in leather jackets ran from a sphere to the captain’s cabin, checking serviceability of wires. The screen of the TV was installed in the captain’s cabin.

Azores approached a sphere.

“Like a stratosphere balloon gondola” – he thought.

– In this sphere there is a radio station? – he asked a question Ginzburg.

– No – that answered. – The image is transferred on wires. In a sphere – batteries of dry elements, accumulators, the clockwork.

– Accumulators for projector lamps?

– Only for a photo cell. Arc lamps of a searchlight will receive energy from power plant of the trawler.

– Means, it is not absolutely a broadcast? – with some disappointment Azores asked.

– And even at all not a broadcast – answered, grinning, Ginzburg.

– Why?

– Because water strongly absorbs radio beams. The radio wave bearing the image dies away, without having reached the surface of the sea. We assume to lower our TV on depth of two hundred-three hundred meters, at most four hundred. At such distance it is easy to manage also wires. It is more reliable and simpler.

At last all preparations were finished. The heavy sphere was carefully fastened to the crane of the steam winch and began to be lowered in water.

– Now it is better to observe not here, and on the TV screen – Ginzburg told the Spaniard.

Azores hurried to the captain’s cabin.

Ginzburg placed the screen in a deep box which so protected it from light that it was possible to watch the screen, without turning off the electric light. Thanks to it the captain could watch both a compass, and the card, and the TV screen.

– However where screen? – Azores was surprised.

It was comprehended by new disappointment when the captain showed it a box, a little more match.

– There’s nothing to be done – the captain told – Ginzburg produced the device by a handicraft method. It is the trial TV. If it equals hopes, then our central radio laboratory will manufacture fine devices. If only... we saw something.

Azores looked in a box, but saw nothing.

– Means, there is no fish – the captain consoled him.  
– And it is possible, your underwater eye does not see fish? – Azores asked.  
– Perhaps – the captain answered. – But Ginzburg assures that he already saw something on this primitive screen.

Painful, long minutes passed. Azores kept the eyes glued from the screen. Suddenly he exclaimed:

– Look! The screen comes to life!

Makovsky looked and saw the inexpressive, blurring spots on a reddish-yellow background of the screen. They moved diversely and dropped out of sight, again appeared. One of them were allocated on the screen dark, others with lighter frame.

– This is fish – Makovsky quietly told.

Azores stared hard at a magic box.

– Well? – the entered Ginzburg asked.

– Look itself – the captain answered.

That only looked and cheerfully told:

– Is.

– But why it is so vague? – Azores asked.

– Because fish it is far from the TV. We, obviously, about contour borders.

Azores already heard the term “jamb okonturivaniye”. When Ginzburg turned away to give the order by phone to the assistants, Azores looked at the screen again and screamed, joyfully surprised. He saw expressive outlines of the fish who flashed sideways and disappeared in the left corner of the screen. After the first the second appeared, then the third image of fish, more and more...

– To lower a trawl!

From the deck the excited voices, noise, a winch roar were distributed. Sailors developed the huge trawl hanging on a mast and lowered it in water. It lasted several minutes. Trawling fishing by means of the TV began.

In forty five minutes the trawl was lifted. He was full of fish and nearly broke from weight. Azores and Ginzburg ran away down, on the deck. Seamen shouted “hurrah” to the inventor.

– To swing, swing! – they shouted. Then seized Motya and threw.

– Devils! Already swings. Still overboard drop! – the happy inventor shouted.

The captain stopped this game, but did not make the prevention for misconduct. He understood mood of crew and itself was glad not less sailors.

## MESSENGER OF ACCIDENT

Fishing went perfectly. The underwater eye faultlessly performed the work. Sometimes the screen suddenly grew stiff, a game of spots stopped – means, the trawler left a jamb. New searches were started, then the screen over again came to life. The skilled captain quickly defined “contour” of a jamb and now could conduct fishing until holds are filled to the full.

Trawlers left on trade for long time and wandered by the sea for months. Now the “able to see” trawler could perform a task for several days. What economy!

People, having forgotten about fatigue, about a sharp north, caught fish, filling holds. Fish was undressed and salted here, on the trawler – it was the real floating plant.

On the way back, as hurried, Ginzburg asked the captain to reduce the course to lower once again the TV in shallow water and to look at a bottom. The captain agreed, and the TV was lowered. Ginzburg watching the screen screamed and turned pale.

– What is? – the captain with alarm asked.

– We, apparently, found one of our dead of trawlers – Motya said.

– Backing!

The captain looked at the screen. Yes, there the stern of the trawler lying upside down accurately was seen.

Iron acquired small seaweed as if a moss. Everywhere five-pointed starfishes, crabs were seen, the fishes attracted with searchlight fire flashed... The inscription “Peak...” flashed.

– It is “Haddock” – the captain told. – The diesel trawler, it died together with “Perch” during a storm under December thirtieth, 1931. And so where “Haddock” died! And the last signals were accepted almost from Medvedki’s width.

– Could carry “haddock” on the South already overturned – Ginzburg stated a guess.

– A sad find – the captain sighed. He nearly died during that awful storm. – But for you, Ginzburg, of course, and suitable... Well, well, do not wave a hand. We understand each other. We found the trawler, and it lies superficially. Epronovtsa will lift him. At the bottom of the Barents Sea many trawlers – and ours, both German, and Norwegian, and English are buried. By means of your eye we will find and we will lift them.

News of the found “Haddock” scattered on the trawler. Seamen remembered the died companions, storm, storms. But unless all life not fight?

Cleared up. However, by the sea huge waves still went, but wind calmed down, clouds disappeared, in the sky the moon shone. Silvery reflections of moonlight danced on waves.

Azores approached a board and, rocking in a step to the steamship, stared in one point.

– What you look narrowly at? – Ginzburg asked.

– You see, shines as an asterisk – Azores answered, specifying afar.

– I see: the moon is reflected in waves.

– No, not the moon – Azores answered. – That shines a bottle.

– Well and that?

– And the fact that if it did not drown, so it was corked. In such bottles there are letters crashed, here that. It is necessary to catch this bottle.

Azores hurried to the captain. Makovsky listened to him without special pleasure. To catch a bottle in which, perhaps, there is nothing and – to waste time. On the other hand, sea traditions oblige: the bottle has to be caught. And it gave the command. The trawler reduced the course and stopped. Rolling amplified. Azores was strongly pleased with a new adventure.

Sailors estimated how to catch a bottle. It is inexpedient to lower a trawl: cells of its network were wide and the bottle would slip through them. The small network with small cells was found, it and caught a bottle.

Azores was not mistaken: the bottle hermetically was corked rubber up and in it paper was seen. The bottle was delivered in the captain's cabin. Makovsky carefully took out a stopper and got the leaf curtailed into a tubule from a bottle. In a note widely it was written in English:

“On a case of death of the steamship “Leviathan”. I ask to deliver this note to Argentina, Buenos Aires, Litl Street, 344. To Zhuan Hurges.

Blasco Jurgues”.

Further there was a ciphered text – continuous rows of the letters printed on the machine. Right at the end, after the code – an addition:

“In the letter extremely important data. I ask to deliver with the courier. Costs of journey will be paid on the place.

If it is impossible to send with the courier, I ask to report on a bildapparata”.

Makovsky turned a leaf in hands and burst out laughing.

– Some odd fellow – he told. – Thinks that there will be people who will give up the business and will go at own expense to South America to find for the addressee and to transfer it the letter in hope for payment of expenses.

– And the addressee, perhaps, already died or left in the unknown direction – the navigator added.

– It is possible to photograph the letter and to send a picture – Ginzburg advised.

Azores before listening silently unexpectedly told:

– For me it is absolutely clear that Blasco Jurgues who died together with well-known “Leviathan” wished that his letter was transferred without publicity. The letter is ciphered not for nothing and if to transmit this code through many countries by telegraph or bily, then, naturally, secret polices and the Ministries of Foreign Affairs of a number of the countries will become interested in it. Jury encoders will lose a dream and appetite, will not decipher this letter yet. Jurgues, obviously, was confident in ingenuity and nobility of into what hands its bottle will get. He asked to resort to a bildapparat only as a last resort. The last will of tragically died person has to be executed.

– And suddenly this document contains weapon against us, the USSR? What if Hurges is an agent of the imperialistic power planning tricks against us? – the captain asked.

All stopped.

– Fears are sober. Everything is possible – Azores answered after reflection. – However it is improbable that official diplomatic couriers or spies threw into the ocean of a bottle with the ciphered documents. How the code was cunning made, there will always be a meticulous rasshifrovshchik. Deciphered the Egyptian hieroglyphs. The governments always have an opportunity to direct classified documents with diplomatic mail. If by steamship the state document died, its copies would remain in the ministry. Instead of the died Hurges other person would be sent if Hurges was a diplomatic courier; on that would business also came to an end. Here something other. I believe, Hurges – whoever he was – worked, as they say, at own risk. Perhaps, it is one of the adventurers who opened a placer or something like that. In the death hour he decided to reveal a secret to the relative – Zhuan Hurges, probably, his brother, the father or the son. – Azores took a view of seamen. All were silent, and it continued: – My plan is as follows: the newspaper editorial office in which I work suggested me to go to South America. There now are interesting events. I will go there and I will take the letter with myself. Just in case we will make the copy. And I, having arrived to Buenos Aires, first of all carefully I find out who such Hurges. If it not from our camp, I... hold the letter until we decipher it and we will be convinced that it is safe for us.

– The last will of the dead has to be executed – with irony Ginzburg repeated Azores's words.



– Yes, if the died not enemy – quietly parried Azores. – Our ethics consist in guarding interests of the class. So? In a word, I go to search for Hurges. You agree with me, companions?

– We cannot resolve such issue – the captain carefully told.

– Certainly – Azores confirmed. – I will be in Moscow and I will agree. But whether not too we are melochna?. Hurges, throwing a bottle into the sea, knew that she can be brought by the Gulf Stream Current and to northern coast of France, and to west banks of England, and to coast of Norway, even to New Earth and Franz Josef Land where Gulf Stream, by the way, leaves deeply. Hurges, if he is not a fool (and he, apparently, was not the fool), knew that his bottle can appear also in the capitalist country, and in the Soviet Union. He knew, of course, that will be interested in its code. However he was sure, it is obvious that without key its code will not be deciphered. Therefore asked to transfer as a last resort on a bilda. At last, the bottle could get lost in the ocean. Mere chance that we found it, but not Norwegians or Germans. It could fall into hands of fascists...

– Eventually, whether not too the great value is attached by us to all this? – Ginzburg asked. – What makes huge importance for Hurgesov – for us and for all others, perhaps, does not cost the eaten-away egg...

The correspondent accurately curtailed the letter and hid it in a pocket.

– In any case, having come back from Argentina, and maybe earlier, I will notify you on the progress. We still will manage to photograph the letter.

Strongly swung the trawler, wind rose. The captain passed into the cabin and accepted team.

## BLIND OLD WOMAN

Azores looked for the street on which Hurges lived. Gloomy people suspiciously examined well dressed Azores and silently showed the direction – each time more and more in depth of slums of working quarter. Azores was a little alarmed. What would it mean? The one who threw a bottle traveled on “Leviathan” – by steamship of rich men. What affairs the wealthy businessman who tragically died in the ocean could have with people of this suburb?

With great difficulties of Azoresu at last it was succeeded to find the street which he looked for. The gloomy place – near the cemetery of the poor and the new building of prison. “That, the authorities were provident, having arranged the cemetery and prison in this part of the city. Care of the working population of the quarter: to bring closer ‘public’ places with which it most often deals” – Azores thought.

Here and the house No. 344 if it is possible to call only these ruins the house... To call? There is no call. The door is half-open. Knocked... Nobody answers. Azores knocked stronger and, without expecting the answer, entered the room. The old shaggy dog hoarsely began a bark on Azores and with the last bit of strength rose on forepaws. Back were paralyzed.

– Who here? – Azores heard a rough aged voice and turned.

In a dark corner the old woman in tatters sat. She looked in emptiness unseeing eyes.

“Well and situation!” – Azores thought.

– Whether tell, be so kind as, there lives Don Hurges? – Azores asked, approaching the old woman.

The smile stretched her toothless mouth. The long hooked nose almost touched the sharp, raised up chin.

– Don – scoffing, it imitated. – Unless Dona live in such peasant houses?

– You after all did not answer my question.

– No Hurges exists here – the old woman angrily proshamkat.

Azores became gloomy.

– But, perhaps, he lived here? You live in this house long ago?

– Seventy six years – the old woman answered.

– And never heard about Hurges?

– Perhaps also heard. In seventy six years about whom you will not hear. Yes you who such and what it is necessary for you? – she asked suspiciously, and her nostrils began to move as if sense of smell could replace with it sight.

– I have a letter to Zhuan Hurges. Obviously, from his brother who died during the crash of “Leviathan”. The letter was revealed in a bottle and thanks to a happy occurrence it appeared in my hands.

The old woman with interest listened. Azores monitored expression of her face. Obviously, she after all knows Hurges.

– Approach me, I will feel you – she unexpectedly told after minute silence.

Azores satisfied this strange request. The old woman diligently felt a sleeve of his jacket, forced to bend and quickly ran a dry wrinkled hand over the person from a forehead to a chin.

Survey, obviously, satisfied it. Having thought, she said:

– Yes, you Spaniard. And you here arrived recently...

Azores could not comprehend from what she drew such conclusion, however did not venture to ask about it.

– I assure you that I do not deceive and came to you as the friend – Azores hotly told. Seeing that the old woman begins to give up, he risked to open the card which could solve a game in its advantage. – I am a correspondent of the communistic newspaper “Barselonsky Proletary”.

The effect exceeded its expectations. The old woman became straight and severely asked:  
– You tell the truth?

The communist Azores hotly and sincerely said an ancient Spanish oath, and it made a due impression. The old woman turned the face to a sound of its voice and said:

– I trust you.

Azores breathed a sigh of relief:

– Give me your hand.

Azores strongly shook hands the old woman.

– We should be careful, very careful – it continued, shaking the head – especially to such blind woman as I. Around spies and traitors. If I cut off to myself language in time, Zhuan Hurgues, perhaps, would not be where it now.

The old woman mournfully inclined the head. Obviously, she blabbed out already once and it ruined Hurgues.

– Where it? – Azores asked.

– There, where to you not to reach – the old woman answered. She pointed to a window through which the roof of new prison was visible. – To me once here also came and asked: “Companion Hurgues at you lives?” And I, the old hen, was caught on the word “companion”.

Azores was confused. The situation becomes complicated... The one whom he looked for sits at thick walls of prison...

– Tell, really it is impossible to meet it in any way?

– If you were the prosecutor or the chief of prison, then could see it daily – the old woman answered. – And so ... – It sadly shook the head.

– But it has to have friends! They can help me. You are not familiar with someone from them?

The old woman pricked up the ears again and looked at Azores the whitish unseeing eyes as if she hoped to read Azores’s plans through a cataract film.

– I understand you – Azores told. – You are afraid to open the secret apartment. But the meeting can take place at you. There is rather deserted place, and companions can be convinced that “tail” of salted pork fats does not try to keep step with me. It is possible to appoint a meeting and in other place – where you want. Appoint hour and the place.

The old woman of minutes five was silent. Azores already began to lose patience.

– On Sunday in the tenth o’clock in the evening at the cemetery, near a chapel – she unexpectedly told, without looking at it.

Azores thanked her, shook hands and left. Then returned and a little perplexed addressed the old woman:

– Forgive me for my desire to help you and do not misunderstand it. – He put it credit cards. – There are twenty five dollars.

– Not to offend you, I will take, but not now, and then, after the appointment.

He understood it. This money could become the treachery price if Azores was a spy. The old woman had the right to be mistrustful to people.

Azores left.

## AT THE CEMETERY

Azores was young, hot and had vivid imagination. It built the most courageous projects of an appointment to Hurgues and even his releases. Perhaps, to give itself for the priest from Spain and to pass to Hurgues under the guise of the confessor? But in prison the confessors... Undermining? Stealing from the prison-yard by plane? Bribery? Azores remembered several stories of difficult prison escapes. The imagination cleared up. With these thoughts he fell asleep and dreamed some gloomy underpasses, ladders, lattices...

He used the days which remained prior to a meeting at the cemetery on collecting materials for the newspapers. These days in Buenos Aires the strike of workers and employees of city transport broke out. Azores was in time everywhere, without forgetting also about Hurgues. "A strange surname – he thought – sounds for foreigners as Spanish, however not Spanish. Hurgues... Whom could it be?"

At last day of an appointment came. Azores came a little earlier and began to wander about the cemetery.

"Class privileges do not come to an end also with death", Azores thought. Yesterday it happened to it to visit the cemetery of aristocrats and rich men. There is a marble city: mausoleums, family crypts, chapels, the wide, covered with yellow sand paths, flowers. Real exhibition! Here, on the cemetery of the poor, simple wooden crosses which are so closely put one near another that between graves it is difficult to pass. The same overpopulation, as well as in working quarters. The corpse did not manage to decay, and in its grave buried another... Here graves and without crosses. On others – only a column with an inscription, a red ribbon, a fresh wreath from red poppies... On a gray gravestone the sickle and a hammer are cut out.

Azores looked for hours. Without five ten. A quick step moved to a chapel. Darkened. From a narrow window dense red light of an icon lamp fell. In the sky – a sickle of a new moon. Smells of the svezheynuty earth and smoke of the next factory.

Azores shuddered: someone's steps are heard. Two men quickly approached a chapel.

– Companion Azores? – asked one.

– Yes, it I – Azores answered.

Apparently, it were workers. They shook hands with it.

Azores repeated the story and showed them the certificate of edition. Comers attentively read the document. At the same time they transferred views from a photograph of his face, being convinced of similarity. Having finished the certificate, asked to show the letter.

Workers long and attentively considered the document, then, having exchanged glances, returned it to Azores. One told:

– Companion Azores, we trust you. Let's try to report about this letter of Hurgesu. You come to the old woman exactly in a week. – And, having said goodbye, went.

"And I?" – Azores nearly screamed. He wanted to participate in all events. But, probably, it should be content with a passive role and to expect news.

Azores came to the old woman and, having thanked her, invested her in a hand money. Now she did not refuse. On her wrinkled face something similar appeared on a smile. Azores did not know that the poor old woman supported several days the existence only by onions – a bulb for lunch, half of bulbs for dinner and a water bottle – that's all. And her poor dog for hunger and weakness could not raise the head any more...

Again bustle, turmoil of correspondent work... For the second day Azores was involved in a bad story when photographed street fights of stachechnik with police and strikebreakers. Azores was arrested, and his device was confiscated – such pictures were forbidden.

In several days he managed to be released, but the device remained in police.

In the appointed day Azores came to the old woman, however, except her and the become cheerful dog, found nobody here. “Really and those workers are arrested?” – he thought. The old woman friendly nodded and gave it a note.

– The address – she told. – Go to this address. The person called in the address will offer to you explanations. Take with yourself the letter found you.

Azores thanked the old woman and said goodbye.

## RIGHT HAND OF BLASCO JURGUES

From the suburb of the city of Azoresu it was necessary to walk almost to the center – on Mayskaya Street. Employees of transport continued to strike. On streets there was a silence, unusual to the huge city. Trams did not rattle, automobile sirens were not heard. Everywhere there were pickets. Heavy pogromykhivat the police tank. Over the city patrolled planes – searched for congestions of workers and on radio notified command of police groups.

Azores, continually wiping sweat from a forehead and a neck, went by empty shops. Crisis and a strike left the mark on the city – it was similar to the seriously ill patient. As leprosy spots, grew white on walls rhombuses and squares of the removed signs. The show-windows covered with iron curtains, untidy garbage on sidewalks, shreds of newspapers, the turned bus...

At the corner of the street near the closed white marble restaurant there was an old Indian with a torn blanket on shoulders. He held a big glass jug with water in which yellow segments of lemons floated in hand. Azores drank a glass of water – it was cold – and asked where the building of the electric company is located. The Indian vaguely shrugged shoulders. He did not deal with such important enterprises.

At last Azores found the necessary seven-story building with signs on a pediment. Entered the glazed lobby. He was met by the sleepy door-keeper. On a hanger only three straw hats.

– Tell, Mr. Kar lives here? – Azores asked.

– Does not live but only works. The seventh floor, the room seven hundred thirty two – dryishly answered the door-keeper.

Azores went to the elevator.

– Does not work – the door-keeper phlegmatically warned.

It was necessary to walk upstairs.

In flight between the fourth and fifth floors to it the pale young man, in appearance the clerk met. Having looked at Azores, he was obviously disturbed and several times turned back.

“Orders strange here! – Azores thought. – Do not work for them today, perhaps? The impression is such that the building is left. Perhaps, the company moved?”

But here and seventh floor. Azores's steps were booming given in a long corridor. By the way he looked at the slightly opened doors. Long tables, on them – coils, lamps, accumulators, glass tubes, devices, devices... Obviously, laboratories. All rooms were empty. Any person. On all objects a film of dust. The corridor turned to the right, once again to the right. Here and room 732. Azores knocked. Behind a door fast paces, knock, rustling as if someone hastily cleaned the room were heard; then the door revealed, and on a threshold the scared figure of the little person with a red goatee grew. On it there was a shabby blue dressing gown.

– May I see Mr. Cara? – Azores asked.

– I am Carat. At your service – the person with a goatee answered and, having opened a door is wider, passed the guest. – What can I serve as?

– I in the matter of Don Blasco Jurgues.

– Blasco Jurgues? – having jumped up, the Carat screamed. – You sit down, please. – He began to fuss, moving up the guest a chair. – Blasco! He died, died, the poor creature... Died while his life was so necessary!. However what business can be? – And he suspiciously looked at Azores.

Azores told Cara everything, since the bottle caught in the sea and finishing visits of the old woman.

The carat listened, nodded, shook a goatee and repeated everything:

– So, so... Poor creature Blasco Jurgues!. Zhuan sits in a tyurma. It was to be expected. I can look at the letter?

Azores submitted the letter. The carat seized him, almost pulled out from hands, and stared hard at paper.

– So, so... It is his hand, its code...

– And a key from the code? – Azores asked.

The carat once again searchingly looked at Azores: whether it is possible to trust it?

– I am a communist – Azores resolutely told. – You will like it or not, but it so. You see, I am frank, be and you are frank with me.

– Oh, of course, of course! – the Carat began to fuss. – The code at me. Here, in this case where wires, insulators and any stuff are stored. The most reliable place! It is better, than on the apartment. This building as you already, probably, noticed, in essence without people. Yes, yes. Crisis. During a prosperity time the electric company organized the broadest research works here: radio tubes, photo cells, TVs... Hundreds of research associates, the most famous experts, inventors... And now all work is winded down, research associates dissipated in job searches.

– And you? – Azores asked.

– Now – the semi-laboratory assistant-semi-watchman – with a sad smile answered Carat.

– You were well familiar with Blasco Jurgues?

– Whether well I was familiar! – the Carat exclaimed, and his red eyelashes began to blink. – I was the closest assistant to Hurgues. Hurgues! This is the great inventor. Great mind, great heart! Here in this room, we worked for this table with it twelve years. Many nights are a lot of days and ....

Azores would not be a skilled correspondent if did not try to find out everything that concerned Hurgues at Cara. The carat willingly answered, and Azores learned more, than expected.

Hurgues's father, Solomon Hurgues, was the Polish Jew. In due time he emigrated to the United States, but there he was not lucky, and he moved to South America. Exactly here, in Buenos Aires, it had a workshop on car repairs, bicycles, motorcycles. Zhuan Hurgues helped the father and when the father died, got a job on the big plant and there joined in revolutionary fight. To his elder brother, Blasco Jurgues, it was succeeded to get the higher technical education, and he worked in research laboratory of the electric company which was branch of New York. It was very much appreciated. He gave to firm many remarkable inventions, introduced economic lamps and when production of radio receivers was arranged, designed very successful type of the amateur heterodyne radio receiver.

– But he did not sell the soul to firm – significantly said Carat.

– What do you want to tell these? Hurgues was a communist?

– He thought as the communist – the Carat answered. – That's all what I can tell. He lived in peace and friendship with the brother. Once at me Blasco told Zhuan: “We go towards one aim, but in the different ways, and, probably, to us more favorable more rare to see with each other that yours “revolutionary popularity” did not predict suspicions and on me, for “our revolutionary work” – and he pointed to me. Yes, on me – with pride repeated Carat. – Because we worked together, we had no secrets.

– And what it for “revolutionary work”?

– Revolution in science and technology which is designed to serve revolution proletarian – the Carat answered. – We are inventors. By itself, Blasco invented, and I helped him. Ah, it had originally Edisonova the head! Since the October revolution of Blasco lived a thought of the Country of Councils. He worked for it and dreamed to arrive there not empty-handed. Oh, he prepared a rich gift! And here, when... Ah, Blasco, Blasco!. Such careful even in trifles and... Why you did not listen to me?. – Red eyelids with red eyelashes began to tremble again, began to blink as if the Carat was going to begin to cry.

Azores guessed that here the great secret is covered.

– And what the invention on which you worked is?

– This invention ... – Eyes Cara flashed inspiration fire, however it extinguished this fire, quickly approached to the door, slightly opened it, looked out in an empty corridor and, having left



a door half-open – approach of steps is so more heard – came back to the place, sat down near Azores and whispered: – Wisdom stone. – The carat held breath and silently burst out laughing.

“Whether this odd fellow went crazy?” – Azores thought. But that continued:

– Yes, philosophers’ stone. Dream of alchemists of transformation of elements. And in a most up-to-date way – a shell for splitting of an atomic nucleus. Revolution! A new era in chemistry, in the history of mankind!

In hobby he splashed dry handles and grinned. Azores started back to a back of a chair and silently watched several seconds on Cara.

– Yes, yes, yes – ardently whispered Carat, maintaining Azores’s look. – Not a dream, not a problem, not a hypothesis, but fact. Here, here on this table, we finished the last experiences. Here, on this place, there was a device – latest “gun” for bombing of an atomic nucleus. And what she created! What miracles of transformation of things were done by it before our eyes!

– And where this device? – Azores asked, feeling that at him the back grows cold and goosebumps on a body run.

– Anywhere. – The carat heaved a deep sigh. – Such things could not be taken with themselves. It is safer to carry them in the head. But unless the head cannot be ruined on the way? Huges had big money and almost them spent everything for researches. And on the last bought the ticket for the best, appear, safest steamship – the steamship of billionaires as he was called in both America – “Leviathan”. But there is no such ship which could not sink... Huges took all precautionary measures. The calculations, formulas, calculations – in a word, it made all “extract” of the most famous opening in duplicate: one – on paper, it was stored at it in a wide belt...

– And the second? In a metal box? – with impatience Azores asked.

– Huges was more provident. What is a box? The steamship can sink at a huge depth, and then pressure of water will flatten out a box and papers will die. No, Huges arrived differently. He engraved all figures, formulas, schemes and short explanations on thin metal plates, put plates and them soldered edges. It is thought perfectly up! – The carat chilly burst out laughing. – If such “portfolio” sank even on ten thousand meters of depth, all the same nothing would happen to it.

Unfortunate Blasco! Means, you died... Till today I still had hopes – already by other tone continued Carat after a pause. – Now this hope is absent any more. Mistake, bitter mistake!

– But in what its mistake? – Azores asked.

– And that it did not leave me the copy.

– Unless you without it are not able to build “gun”?

The person the Penalty expressed suffering.

– What is I? – the Carat moaned. – I was only Blasco’s hands, and Blasco very much praised these hands. – The carat looked at the hands overgrown with red hair. – Well, let us assume, I saw how the device was under construction, did it by the hands. But... You do not know what is a difficult thing! On formulas and schemes I could make, and formulas lie at an ocean floor now... Did not want to leave the copy, here and a mistake. Naturally, it was dangerous. Zhuan sits here... Salted pork fats could become interested also in his brother, at least and the dead, could glance here...

– However what was written by Huges in the encoded letter?

– Now we will read. Though I beforehand, almost for certain, can tell that he wrote.

The carat rose, opened a big case and from a heap of any electrotechnical materials and old details took out a thin aluminum plate of the same format, as well as the letter. On a plate quadrangular openings by size about a typewriter letter were cut out in different places. The carat imposed a plate on the letter and read:

– “In case of my death inform S3R”.

– What does it designate? – Azores asked.

– Dear Blasco! I recognize you. Even in the code you resorted to a formula – with soft grief said Carat as if talking to the late friend. Addressing Azores, he asked: – Unless you do not guess? Эс –

three – Ayr. It is the USSR. To report to the government of the USSR that in the depth of the Atlantic Ocean the treasure intended for the Soviet Union is stored. But whether the ocean will give the secret now? – asked Carat, addressing Azores. – If I am not mistaken, “Leviathan” sank somewhere about the Azores. Blasco Jurgues’s “portfolio” lies at a depth of two-three thousand meters. Unless it is possible to go down on such depth? However, to find “portfolio”, it is not necessary to lift the steamship. Blasco was provident – I already spoke about it. It was going to attach a plate to an anchor chain. And nevertheless it facilitates a task a little. The diver cannot fall more deeply than by three hundred meters, and I am afraid that Jurgues’s secret died forever.

– Well, still early to determine it – Azores answered. – I, in any case, will execute the last will of the great scientist also I will inform the Soviet government on everything that I know. Let decide what to do. I thank you, Mr. Kar...

– Companion Kar – with soft reproach corrected Azores Kar.

– Companion Kar... I thank you, and allow to say goodbye.

– No, wait – the Carat vividly objected. – You guess as this business is expensive to me. And then... I can be and is useful. I would like that you, companion Azores, informed me of the future of this business.

– To inform – it is hard – laughing, Azores answered. – You, of course, understand that it is impossible to write about such things.

– Why to write?! It is possible to arrive differently. We will speak. And to say so that any person will not understand us. – The carat laughed again. – It also one of the latest discoveries of Hurgues. Not such important, as “gun”, but nevertheless interesting. He presented it to me before departure. Short-wave radio station. For it energy in the tenth shares of watt – less, than is necessary for the battery of a pocket electric small lamp. The antenna – five centimeters, range of action is unlimited. The main thing – the sharp orientation guarantees the mystery of transfers. This device watches the direction of a beam. The smallest deviations are registered and immediately automatically are eliminated. How it is pleasant to you? – The carat laughed again and rubbed hands. – I will give you one reception and transfer radio station. Or not... I will give you the scheme and some explanations on two pages of the notebook. In the USSR, of course, there are skilled radio operators?

– Certainly.

– And so, we will talk. I hand you the gift. – The carat took out paper from a desk, quickly outlined the scheme, explanations to it and all this transferred Azoresa.

– And so, we will talk and even... to see if we want. Yes, yes, on TV. At noon local time I will catch a wave. Good-bye.

They left friends.

Azores almost ran on the sidewalk, without feeling under himself legs. It was captured by rough joy. He did not see either empty shops, or the overturned cars and trams. That to it to these pictures of the dying Old World! It is rather in hotel and from there – to the port.

## THE DESTINY OF THE EXPEDITION IS DECIDED

In Moscow Azores reported all on the special commission. Experts were invited to a meeting.

– Your opinion? – the chairman addressed the academician Toffel.

The gray-haired, high, full, ruddy academician rose and quietly said:

– The persistent attack, more precisely – the correct siege, strongholds of an atomic nucleus is around the world conducted. People work, without feeling sorry for work, means, energy, and it is clear why. If it is possible to ride out atomic energy, then consequences will be extraordinary. We cannot even present now what will become the world when in our hands there is this originally space force. Since when people began to invent, any invention, any opening – neither steam, nor electricity, nor radio – nothing can be compared to it. Atomic engines will make a full revolution

in the equipment, in life. We will become immeasurably stronger and richer. To take at least our uniform high-voltage network. It cost us billions, and its operation costs millions, tens of millions. Wires, support, cables, expensive, bulky dynamo cars, turbines – all this will become unnecessary or almost unnecessary. We will preserve our fuel: coal, oil, wood. They will not be fuel any more. They will be only initial raw materials for chemical processing in high-valuable products. Wood will go only for manufacture of paper, piece silk, sugar and other products and goods. Only one this rescue of coal, oil, the wood from barbarous destruction in fire chambers promises billion savings.

Concerning the most atomic energy needless to say. The fact that it can bring does not give in to calculation. Why we lay our electrohighways on one thousand kilometers now? To transfer energy there where it is absent. Coal, oil, the wood, water – modern power sources – are not always available where there are an ore and other minerals. Atomic energy and atomic engines will give unlimited resources of energy where it is necessary, without any efforts, without bulky constructions. In the tundra and a taiga, in mountains and deserts – everywhere we will be able to have pocket Dneprogesa.

Entirely transport will change. Insatiable engines will disappear. There will be new types of the high-speed land, air and water transport. Even flights to planets will become a reality. Barriers and to construction works will disappear. We will be able to cover with channels all country. We will move literally mountains. The thought, the creative imagination of the modern builder were still connected by “a power limit”. Now many of projects just do not occur to us because energy expenses, excessive for us, are necessary for their performance. Freedom of technical dreams will become original. The person will be a sovereign keeper of the nature.

Whether it is possible to determine the monetary cost of this invention? I find it difficult to give numbers. It should estimate not in billions any more, and in trillions. If the slightest opportunity to seize the similar invention, then any expenses is represented at least, they are as if big were, will pay off in unprecedented sizes.

The academician made a pause and continued:

– But all this under one condition: if Hurgesa’s device is suitable for obtaining not too expensive intratomic energy. Ourselves learned to destroy an atomic nucleus and if did not design the skilled atomic engine, then only because it is premature. And it is premature because getting of atomic energy costs still immeasurably much. For atom splitting we use high and ultrahigh tension in millions of volts. And the result of this expensive attack, unfortunately, is too small. Our “shells” badly hit the mark. From one thousand shots one hit.

Companion Azores told us that there is witness, the employee Hurgesa companion Kar who confirms the fact that Hurgesa successfully destroyed atomic kernels. But the description of great opening lies at the bottom of the sea so far. I do not allow a mystification. However who will be charged what Hurgesa and Kar not from breed of schemers? Unless alchemists were not sure that they “almost” opened a secret of transformation of ignoble metals into gold?

– Your conclusion? – the chairman asked.

– My conclusion: to look for Hurgesa’s tables if it is technically feasible and if costs of searches in power to our state.

– Sorry, the academician – asked a question the elderly economist – and atom splitting, so to speak, in factory scale, will not cause...

– World accident? – Toffel asked. – I do not think. As I already told, atoms split now nearly daily. And anything, world целехонек. I had to hear similar fears more than once. I believe that they are superficial.

– Your opinion, professor Reynberg?

The low, tidy old man – a small beard klinyshky, long gray-haired moustaches – easily rose, abruptly turned to Toffel, then to the chairman and peas scattered words:

– First of all I have to note one sad misunderstanding. Here it was told about getting of internal energy when splitting an atomic nucleus. When romantic fantasts write about similar things, it is still

admissible, but when with the idea of production of inexhaustible intratomic energy the scientist acts, I as the power engineering specialist, I protest. It is extremely deep, sad and even harmful mistake. When splitting an atomic nucleus we will not have any internal energy while exists and will not disprove the second law of thermodynamics.

And not Hurges, as far as I understand aspired to it. He was interested in the splitting of atomic kernels, but not energy. It approached a question as the physicist, the chemist, but not as the power engineering specialist. And in this gun light of Hurges – the greatest invention if it is only not the myth. But it let will be defined by chemists.

Reynberg quickly sat down and took a sip to tea.

– And it is necessary to look for? – the chairman asked it.

– If you intend to get energy from atom, then there is no need to climb under water. Chimeras and on the earth are enough – Reynberg from the place answered and all at once drank up the cooled-down tea.

– Your word, professor Bagorsky.

Powerful the put man with gray moustaches and young eyes got up without hurrying, leaned hands against a table and began:

– I, as well as all of us, have very poor materials to judge Hurges's opening in essence. But also what is what I managed to get acquainted with is, enough, to draw a conclusion that the question deserves the close attention. I agree with Pyotr Ivanovich Reynberg: power here at anything. – Reynberg victoriously looked at Toffel. – However from it the question does not become less important – Bagorsky continued. – Companion Azores retold to me everything that he heard from Cara, and I had such impression: if this person can be also mistaken, as well as everything, then he is not inclined to enter into deception of others obviously. And the fact that he told about experiences of the died inventor is something extraordinary. If Hurges's "gun" is capable to knock out at insignificant power consumptions the set quantity of electrons from an atomic nucleus, then this really epoch-making invention. Here Pyotr Ivanovich remembered fantasts and novelists. If I belonged to them, I could represent to you wonderful prospects. But I am not a fantast and not the novelist. You know value of a problem of decomposition of an atomic nucleus also. And I can tell you only one: if we manage to get keys to Hurges's invention from an ocean floor and if it equals only the tenth part of our hopes, then and in this case expenses on searches of the hided treasure hundreds and thousands of times will pay off.

The chairman addressed the chairman ЭПРОНа to the engineer Kirillov:

– Your opinion?.

Kirillov, the healthy, suntanned man of average years, in a sea jacket, rose and slowly began:

– We do still precisely not know the place where "Leviathan" sank, and depth is absolutely unknown. All business depends eventually on depth. EPRON still worked at depths about twenty-thirty is put off.

– Companion Kirillov – suspended him the chairman – most of the audience here – people overland, got used to consider on meters.

– The sea sazhen equals to six feet, or one and eighty six 100-th meter – Kirillov explained. – Well, I will transfer to meters. And so, we work at depths of fifty-sixty meters and above, of course.

– Not more deeply?

– Depth in hundred meters for the diver in a usual diving suit is considered already record. In the American rigid suits it is possible to fall by two hundred, even by three hundred meters. It is meanwhile border for divers. It is possible to fall by depth seven hundred fifty – one thousand meters only in the special steel gondola capable to sustain huge pressure. Unfortunately, in a similar gondola it is only possible to observe underwater life, to photograph – and only. We need to act under water – to lift the sunk ship or, in case of need, to find by it Hurges's "treasure". Then business comes down

to that, “Leviathan” how deeply lies. You know that in oceans there are depths in ten thousand meters. And modern border of lowering – a little more than one thousand meters.

– A stratosphere, it appears, it is easier to win, than the hydrosphere – concluded, grinning, the chairman.

– Yes, thirty kilometers are easier to rise above the ground by twenty five – than to go down to the ocean on two-three kilometers. The terrifying pressure of water keeps secrets of sea superdepths. I even doubt whether people will be able and to go down in the future to the deepest places of the ocean...

– Even in a gondola?

– Even in a gondola, and only to observe. The gondola with people has to be tied to a cable or a chain that it could be pulled out from water. But no cable of ten kilometers will sustain a body weight. ... I do not know it... the cable should be done in the form of a cone with a huge diameter in the basis. I do not say any more that from the ship it is impossible to lift such weight and cranes such it is impossible to build.

– And if to lower a steel sphere without people, but with devices which would transfer to the earth of the image of the deep-water world? – the economist became interested.

Kirillov grinned.

– You offer me the questions overstepping the bounds of diving practice. If you want, already area almost a fantasy. But I believe, as with such sphere nothing will turn out.

– The steel sphere with walls of enormous thickness – did not calm down the economist.

– And glass? – Kirillov asked. – After all your sphere has to have windows through which it would be possible to light with a searchlight a seabed for operation of the TV. It seems to me that even quartz glass will not sustain pressure. Besides, do not forget that such sphere will not have any wires. Probably, in him it is necessary to have power plant or accumulators of sufficient force and radio station. However and there is more to come. How to transfer the image without wires? Radio beams will be absorbed by ten-kilometer thickness of water. No, what is located at a depth of ten kilometers is completely inaccessible for us.

– Fortunately, “Leviathan” sank not in Silent, and in the Atlantic Ocean, more “shallow”. However, and in Atlantic there are “failures” depth in several kilometers, but there are much also depths, available to us. There are also underwater ridges which tops lie rather close to the surface of the ocean, and here and there these mountain tops rise over the surface of the ocean, creating all the known islands, for example group of the Azorsky, Canary Islands.

In this regard I submit the general plan of an expedition so. In the distress signals dispatched by “Leviathan” on the eve of death the longitude and width are marked. This place, as far as I know, represents rather raised underwater plateau with extremely cut up relief. There are both deep abysses, and high mountains. On the general cards all this is designated, naturally, only approximately. We have no yet so authentic maps on which the relief of each square kilometer of Atlantic would be represented precisely. We sail to the place of death of “Leviathan” and diligently we measure lotliny depths. If they reach several kilometers, then as it is sad, we should recede. Similar depths exceed modern technical capabilities ЭПРОНа. Other business if research establishments help us and will give hardware for a gain of similar depths. Anyway this reconnoitring expedition will cost not much.

– And if depth is suitable? – the chairman asked.

– Then we will start the second stage of work – to searches of the sunk steamship. Here on a scene divers act. If “Leviathan” is found, further we work on your tasks: we look for “treasure” by steamship, under water, or we will bring it to the surface that, however, will run already into money.

Azores asked words.

– I think that we should not lift the steamship – he told. – Hurges was so provident that hung up if only he managed to make it, the plates on an anchor chain on a steamship nose. Thus, we should find only the steamship at the bottom of the sea and to find plates on an anchor chain.

- However, to find, it is necessary to fall by a bottom and if a bottom deeply? – Kirillov told.
- The person does not have need to go down – Azores quietly answered.
- But how to find? – epronovets did not calm down.

– Very simply. I got acquainted with your fisheries in Murmansk. Floated on trawlers. And there I happened to see the underwater TV designed by one Komsomol member by means of which fishermen very easily find fish. And not only fish. We incidentally managed to find the sunk trawler at the bottom of the Barents Sea. You, obviously, already heard about it. And so. To make the big TV which could be lowered at least on depth of one thousand meters – not so a difficult technical problem. By means of the TV we will manage to find a nasal anchor chain and plates. It is necessary only to lift these soldered plates. I assume that the Soviet technicians will be able to create such mechanical hands which will be able to fall by a sea bottom, to be enough with iron fingers production there and to bring it to the surface.

- It is really the quite good idea – Kirillov said.
- A radio eye – here that will help to find Hurges’s “treasure” – Azores finished.

– How you think? – the chairman of the engineer Borin, the large inventor in the field of radio asked.

– As for the TV – Borin answered – that this idea, in my opinion, is completely real. The TV will be soon introduced in diving practice. Telling the truth, it will be not absolutely a radio eye. Researches of radio signals from the submarine which went to depth showed that radio waves are strongly absorbed by water. Therefore transfers from depths of the sea have to go not by radio waves, and on wires from the TV. But it equipment question. I know the inventor. Not so long ago I had it, showed the small TV. I willingly will take it to myself in assistants and with it I will develop a design of the deep-water TV. I can undertake it. “Mechanical hands” ... I think, we will build them.

– However, companions, we as if forgot the starting moment – Toffel started talking again. – We after all do not know whether really Hurges’s “gun” is treasure even if not for power, at least for physics, chemistry and the industry.

– Perhaps, you would draw surer conclusion – Azores rose – if directly talked over with companion Kar.

– But he over the ocean – objected Toffel.

– Yes, but unless we do not talk to people who are over the ocean? – smiling, Azores asked.

– Agree, however, that the question not such is that it was possible to speak about it openly by phone or on radio – pouchayushche objected Toffel.

– Nobody will hear your conversation – Azores answered. – I told not all to you, companions. – And Azores, having taken out a small box, told about short-wave radio station of Hurges and presented this gift from a name the Penalty.

The barin ran up to the device and with interest began to consider it, muttering something. Then he raised the head and told:

– Devilishly clever solution of a task, forgive for the rough word. This Hurges really had an efficient head.

– Thus, today you talk over with Kar. I hope, companion Borin will manage to establish relation quickly.

On the same day, about six o’clock in the evening when in Buenos Aires there was a midday, two persons divided by thousands of kilometers were told with each other.

The carat told Toffel everything that knew about the Hurgesovy method of splitting of an atomic nucleus. Toffel understood more than what contained in the head and in words the Penalty. Understood the idea and it was struck with its originality. However, without formulas, without Hurges’s schemes it would be required, perhaps, several years to carry out this invention. But also what Toffel learned about, was original treasure.

Hurges offered a new method, absolutely new direction. And Toffel more did not doubt any more that Hurges carried original treasure to the USSR. This invaluable treasure, appear, sparkled even through an immemorial gloom of ocean depths.

And Toffel hotly spoke at the regular meeting of the commission already differently – without hesitation, with conviction:

– There are all bases to think that Hurges's opening will be a valuable contribution to science. It will help to resolve a question of splitting of an atomic nucleus. We are immediately obliged to send an expedition to the place of death of "Leviathan" by all means and how many it costed!

The issue was resolved, the means are allotted. In laboratories of scientific institutes shock work was already humming.

Ginzburg, having left the trawler for some time, moved in Borin's laboratory. They worked day and night, forgetting about a dream and food. And soon in laboratory the huge sphere reminding a stratosphere balloon gondola rose. But this sphere had to make a jump not up, and in an ocean chasm.

As depth was not precisely known yet, Borin counted on the maximum depth of the sea around accident. The cover could sustain enormous pressure. On the top part of a sphere there was a steel cylinder with compressed air. Borin expected so that in process of lowering of a sphere and increase in pressure air from a cylinder will automatically move to a big sphere – the TV. This additional internal pressure will serve as if as a pneumatic emphasis against external pressure. In process of rise air also automatically has to pass from a sphere into a cylinder.

It was necessary to make exact calculations: what section the cable on which the sphere what thickness quartz glass through which will light the underwater world with beams of searchlights has to reach will be lowered is necessary. On all cover of a sphere of the TV big and small round openings were made. Through small there will pass rays of light, through big – the images of objects accepted by a photo cell will get to a lens. Borin replaced Nipkow's disk with a kinescope. Energy for searchlights wires ship will give a dynamo car; and light will flash automatically only with the set pressure when the set depth is reached.

...At the same time mechanics constructed "a mechanical hand". She reminded a spider on a leash. Steel sustavchaty paws of this "spider" were made so that automatically grabbed and is tenacious held production. The current impulse on wires forced "spider" to unclench paws if they incidentally were enough not that it is necessary.

Storm of the hydrosphere prepared with that vigorous energy with what storm of a stratosphere once prepared.

## THE MOST UNFORTUNATE PERSON IN THE USSR

The fair-haired blue-eyed son of the engineer Borin, the Komsomol member Mishka Borin, studied at university and this year entered the second year. Still when it graduated from high school, his companions argued on choice of profession much.

"Whom will you be?" – they asked each other. Almost all dreamed to become engineers and pilots, someone – the geologist, the doctor, the teacher. Also did not ask Mishka Borin: its destiny everything seemed clear. The son of the famous radio engineer, the inventor, of course, has to become a radio engineer. And Mishka Borin strongly surprised not only companions, but also the father, having unexpectedly declared that he will be a geographer. So he solved already a few years ago. When he studied at school, the concealed and his greatest desire was to become the Hero of the Soviet Union. The Chelyuskinsky epic made the greatest impression on it. No, Mishka was not a conceited person. It was attracted by awards not in itself, honors, an honorary title of the Hero. He wanted to be worthy this rank and to bring to the Fatherland the valid benefit. Once, soon after the chelyuskinsky



epic, he went to the country with an excursion and in the car heard how the young seaman probationer told the girl that he will soon go to “ice swimming”. As Mishka envied it!

He thought much, without telling anybody about the plans. And it had very wide plans. First of all knowledge. They preserve us against mistakes. Here, for example, Vitya. He studied chemistry, and became the polar explorer, the geophysicist. How many in vain downtime! The bear will take occasion by the forelock at once. At first to re-read history of all ice campaigns and voyages. The bear подналег into German and soon read Shteller’s diary written in ancient German in the original. He knew campaigns of the Soviet ice breakers by heart. Then undertook navigation, sailing directions, oceanography, even astronomy.

As it is strange, less it radio interested all.

He kept records. In a commonplace book there was a section: “As people found a stalemate”. Here he wrote down all cases, incidents which threatened the valid and invented by novelists travelers. It is necessary to learn to be courageous, bright, resolute.

However and there is more to come: it was necessary to become strong, vigorous, hardy. To have mind of the scientist and the trained body of the old salt. The sport, physical culture made a considerable share of the Mishkiny plan of “heroic” preparation.

And here he was not lucky. But about it further.

When Mishka became a student, he treated critically many to “children’s dreams”. So, at school it was strongly occupied by reflections about what will be when he becomes a Hero. Now he more was interested in “the business”. However “the general line” of its plan remained, and it, as well as earlier, strenuously studied “necessary” sciences and trained physically: got up early, tempered the body, made big pedestrian excursions, was fond of sport, however did not do such nonsenses, as at school any more: it was not dipped into ice-holes and did not frighten mother by “total absence of appetite” – she did not know that so it accustomed itself “to transfer hunger”.

When he visited from the father that the expedition to the Atlantic Ocean on searches of the sunk ship prepares, all his desires to travel, aspirations to adventures, to feats flashed with a new force. Of course, the Atlantic Ocean – not that the polar seas. What there can be adventures here? Almost usual walk. Also not ice breakers go there. However after all in an expedition it is possible to study the device of the ship and navigation in practice... And he began to ask the father suit him in an expedition. Time is summer, suitable – vacation. By the beginning of academic year it will come back. The father did not give the resolute answer – it is necessary to get permission of the chief of an expedition. The bear pressed Ginzburg with whom he managed to make friends. Ginzburg promised to talk to Kirillov. In days of expectation Mishka even lost weight a little. And one night the father brought a joyful message: permission is got.

– We go together, Ginzburg!. – The bear seized Ginzburg and began to whirl it about the room. Then ran in the room to gather. Postponed books, the whole pile of notebooks, two automatic handles, the field-glass, the gun.

The bear took a view of the room: what else to take? The room reflected “master plan” of his life: on walls maps, mainly maps of the Arctic, hung on a desk – the globe, a barograph, seaworthy tools... How many times this room turned into a cabin, and a desk – into the captain’s cabin! What drama scenes were played here in fight against the Arctic ices! How many times Mishka had accidents here! And in a corner, peacefully getting on with books, the sports equipment for hockey, tennis, boxing, soccer lay...

Soccer! Tomorrow meeting of team of their university with team of institute of technology. Behind these efforts Mishka nearly forgot about an expedition. A bear – “бэк” – the champion. Of course, he is obliged to participate... Will win against “tekhnologichka” last time this season and will go.

At night Mishka dreamed palm trees and flying fishes alternately with soccerballs. It was necessary to “pasanut” flying fish as a ball, but it did not manage it in any way. Fishes flew by by, jingling wings fins.

“Yes same the alarm clock jingles!”

What was a game! Everything went perfectly, but when a game entered the highest phase of tension, there was misfortune. As it happened, Mishka could not remember subsequently in any way. Players snatched on a ball as mentally ill people... Bunched... Suddenly Mishka felt an acute pain in a leg and fell... Judge’s whistle... A game was interrupted... The bear could not get up. Brought a stretcher and on them carried Mishka to the accident ward. The doctor of stadium examined a leg and shook the head.

– Yes, it seems, a change. It is necessary to lie down.

– How many? – Mishka asked.

– Month two-three, and it is possible, and less. Let’s look what will show X-ray.

It was the unexpected and crushing blow. Two-three months! Means, Mishka will not be able to participate in an expedition...

When Mishka was brought home and put to bed, he told Ginzburg:

– I am the most unfortunate person in the USSR.

– Already the most unfortunate? The bone will grow together, and will jump, as before – Ginzburg answered. – Strongly hurts?

– Pain is a trifle – future hero answered. – But I will not be able to go with you.

There arrived the father and began to calm Mishka also.

– Do not grieve, Michel. Young bones grow together quickly. And searches of “Leviathan” can last not one month.

– But steamships will departure!

– Contact with an expedition will be kept by our steamships floating to America and planes. I promise you: as soon as you recover, anyway I will bring you to Sergo.

The father was called to phone, and it left... The bear sighed.

– Calmed down? – Ginzburg asked.

– No – Mishka sadly answered. – I after all will not see, probably, the most interesting.

– I think that you will see everything, all.

– But how?

– You do not know still the most interesting – Ginzburg answered. – Your father and I is designed new devices of the telecast...

– I know. Television to the aid of divers.

– There is more to come. – Ginzburg sat down on a chair. – We design the device and for direct television – in other words, transfers of the movement of objects at daylight and a noktovidniye – visions at night, television in fog and under water. Your father resolved a task – still nobody knows about it – color stereovision. In line – telecinema... Lie quietly and listen further. Your father has grandiose plans. He intended to use an expedition to test all the latest inventions in the field of television. The help to divers in search of the sunk ship is only a detail. We with your father – he here, and I in the ocean – will carry out extremely interesting tests of the telecast here, to Moscow, to an office of your father, everything that will occur in an expedition. Our devices will work continuously day and night at the deck of the trawler and in ocean depths. If all these tests are successful – and I do not doubt it – that we will make the whole revolution. Nikolay Petrovich wants to organize the telecast in the widest scale. Display of works of an expedition is only the first test.

When we adjust this business, millions of the viewers will see how the dam on Angara is constructed that the stratonaut observes as works on Volga-Don Canal are carried out. You only present what would be if in Schmidt’s camp there was a modern teleinstallation! What fine show! Probably, many would understand better for what they at us award with the Hero’s rank.

Mischa reddened. Whether Ginzburg guessed his dreams? And Ginzburg quietly continued:

– The character of an expedition would change. Otto Yulyevich Schmidt could direct perfectly ice campaigns from the apartment. Or take our research geological expeditions. The youth will walk on sands Kara-Kumov, in a taiga jungle, will ascend to Pamir, and our outstanding geologists, without being prevented from working, will see each step of travelers, each mineral and will give advice.

Remember at least history of Khibiny Mountains. In the first years it was necessary to make extremely heavy trips and to climb mountains to the academician Fersman. How many, in fact speaking, it spent time unproductively! A trip in the car, pedestrian transitions on the tundra, often ineffectual wanderings... Sometimes only to bypass the mountain gorge, the person whose each hour has huge value for science lost several days; it is a lot of days, weeks for several minutes, even seconds to define breed, mineral.

– I know, read! – Mischa quickened. – Now initial investigation is conducted by planes, then on “interesting” places the plane abandons geologists, delivers them tents and food. And when works will end, arrive and take away them back. Instead of two-three months the expedition lasts two-three weeks now and costs ten times cheaper.

– They can cost still cheaper – Ginzburg continued. – Present: expeditions have easy compact radio stations and televizorny installations. The academician Fersman of our days quietly sits in the office and works on the manuscript. Before it – the TV screen. Here geologists found something interesting, and he hears their voice on a radio telephone. Turns off the light, looks at the screen, instructs and again goes deep into the work. And only when everything is reconnoitered, it is planned, the academician gets into the plane to draw the last conclusions on the place, to make the last orders. And it will be not always necessary.

Quite so, my friend, we will organize also an expedition on search of “Leviathan”. The administrative and scientific headquarters of an expedition will be here, in Moscow, in this house, in an office of your father. It was so solved at the last meeting of council.

The face of the Bear lit up.

– We with Nikolay Petrovich will transfer your bed to an office now and we will put against the screen. You will see everything or almost everything that will occur in an expedition. We will talk to you as the whole days talked. In an office headquarters meetings will be held. The chief of an expedition Barkovsky, epronovets Kirillov and your father will daily discuss the course of searches.

Mischa's father came back. He listened to the last words of Ginzburg and told:

– It still is not enough. Duties will be assigned to you. Near the screen and radio station we will establish watch. You also will take part in watch. You “will lie on watch”.

As you see, you will be a direct participant of an expedition. Lying here, for thousands of kilometers from Sergo, you will see many times more, than would see on the trawler if you lay there on a ship bed, but without “a wonderful eye” – the TV. Well ... – the Engineer made a helpless gesture. – You will lack no only an ocean smell. But you will add with imagination.

## TRAVEL TO THE WORLD OF ATOM

Mishka Borin “laid down on watch”. Now he already wished that the expedition went to a way rather and the screen would recover. However departure dragged on. There were last tests of “iron spiders”. Ginzburg carried out to laboratories all the time and only in the evenings visited Mischa.

– What you do? You long? – he asked Mischa once.

No, Mischa did not get used to waste time in vain. Now he felt new interest in radio and television. Mischa should go to interesting “travel” soon. And he began to study radio engineering, the device of radioelements, offices of television. And this evening he somehow perplexed answered Ginzburg’s question:

– And I, you know, wrote such... the imagination to understand to itself some principles of television. You want, I will read?

Ginzburg looked for hours.

– Read if it is not really long.

And Mischa began to read:

– “Professor Filinov is so old that long ago forgot year of the birth. And such scientist that he has not enough one pair of glasses: it carries two couples, and in the evenings even three. It has in the head a lot of brain that the biggest caps do not fit to it the head – it is necessary to do to order. The head his absolutely bald, green-golden beard goes down to a belt.

Filinov two young people has a pupil: professors Harichkin and Larichkin; one fifty, second sixty years. Eagle owls calls them “young people” because on their heads only small bald heads, beards hardly cover a breast, and on a nose on only one pair of glasses.

Eagle owls – the great inventor.

Once Harichkin and Larichkin come to Filinov to an office and see on a table the big black polished box with a lens.

– Here – Filinov says – I invented the device which can reduce people and do the person smaller, than a molecule. You want, I will try on you?

Larichkin and Harichkin stroked the beards and exchanged glances, and Filinov already aimed a lens, clicked and laughed.

Also Larichkin and Harichkin began to decrease.

No, it did not seem to them at all that they decrease. It seemed to them that they remain same, and Filinov began to grow, and all objects began to grow, and the room was moved apart in the parties, and the ceiling rose in some stratospheric height. Huge doors opened, and the room was entered by a huge tiger. Harichkin and Larichkin were scaredly killed under a chair. The tiger size from a bull jumped on a huge sofa, and this tiger a favourite cat of Filinov was. The awful thunder shatnut the room – it Filinov laughed. It found Harichkin and Larichkin who hid under a chair, and carefully put them on a desk.

And they were size already about a pin. Also professor Filinov on a caesium plate put them. Harichkin and Larichkin remembered that there was this plate gladenky, polished. But now it seemed hilly as the plowed field. It was difficult to go – any minute you will fall. Over their heads golden ears – hair of a beard of Filinov rocked – and the thunder rattled, each time is more silent: Harichkin and Larichkin’s ears already refused to perceive such sound vibrations. The fright and fear captured young scientists: from one exhalation of Filinov they could fall in an inkwell and drown in it, as in the Black Sea. Harichkin and Larichkin took seat on a plate and caught hillocks. And objects everything increased. The ceiling and a floor departed somewhere in infinity. The inkwell was also removed and grew as Elbrus. Usual light dropped out of sight unexpected travelers soon, and they saw before themselves only mountainous edges of a caesium plate. Mountains grew on their eyes. Rose above and above. In the atmosphere there were flying celestial bodies.

One of them rushed, others smoothly fell by a surface.

– These are motes. Yes, it is, probably, motes which filled room air – Harichkin guessed.

One of motes fell to Larichkin, and he hardly got out from under it, as from under an avalanche. In “sky” huge spheres – water molecules flew.

Fortunately, soon all “celestial bodies” suddenly departed in one direction – probably, someone opened a door and about the room there passed the air wave.

Rocks grew. And, to surprise of scientists, they became all nozdrevaty, poristy. Everywhere huge caves, tunnels, gorges, abysses, canyons were found. They were moved apart, became more and more huge by the sizes.

And Harichkin and Larichkin could already pass on all tunnels in any direction soon, pass through caesium substance.

The dense plate of caesium as if broke up to the components, leaving between them easy accesses.

But on it transformation of the world did not come to an end. Harichkin and Larichkin, better to see, rose by top of huge “continent” with extraordinary porous structure. There passed a little time – and a new miracle.

Scientists noticed that separate pieces do not concern each other. That world in which they were now, reminded itself the remains of the planet broken into pieces. And all these fragments moved. And between them there was an empty space. The fragment on which there were Harichkin and Larichkin grew extremely quickly. It also turned into real “planet”. Its sizes disappeared behind the horizon. Sometimes this planet approached another so that it was possible to jump from it on other planet, was sometimes carried away far. Planets fell, rose, wandered on the sky in all directions. Distance between them everything increased. The planet on which there were Harichkin and Larichkin grew, and all others as if would decrease – were removed in interplanetary space. Soon they already seemed far dark masses.

– We are on a caesium molecule now – Larichkin told. – It is good that it is not a molecule of gas. On it we would feel original Brownian motion of particles – dance of molecules – and, probably, would have seasickness.

– Till certain time – Harichkin objected. – When we would become immeasurably smaller, than a molecule, we would not notice this dance as we do not notice the movement of Earth.

– Dexterously Filinov played a trick on us!

– And to what sizes we will decrease? What is the time passed since we left the usual world?

– We have time now. On hours of Filinov passed, possibly, some seconds, and in this world they equal to millions of years. How many “geological revolutions” were already made before our eyes! However I will try to count.

Larichkin took out the notebook which to it seemed not less usual size at all from a pocket, and, having sat down on a ledge, began to calculate. The scared voice of Harichkin interrupted his studies.

– I move away from you! – Harichkin shouted, sitting on the asteroid.

Larichkin, having dropped the notebook, made a huge jump and managed to catch a jacket tail of the friend.

– We should keep together. Is not enough still that we scattered in different directions – he told.

And before their eyes catastrophically bystry changes were made. Distances increased all the time, volumes of bodies increased – all bodies, except Harichkin and Larichkin’s bodies. With “planet” on which they “landed”, made surprising changes. It also began to break up to a large number of the isolated bodies and little bodies, and all of them were in the movement. Harichkin and Larichkin came to be on a small sphere which rushed with extraordinary speed. In the center of this sphere at huge distance the great planet, or sun around which our travelers rushed endlessly around was seen. Except their planet, around central “star” darkness of others just the same a planetok flew. Solar systems with the central star and “satellites” were seen everywhere. All space where you

will throw a look, turned into a fancy pattern flying around a planetok. It was a show extraordinary. Everywhere there are rings intertwining one with another... Speed of satellites was such that their orbits seemed dark continuous rings – like a ring of Saturn.

Diameter of these circles constantly grew, distances between “solar systems” increased. The planet on which Harichkin and Larichkin flew grew too. It already got the sizes of such sphere that Larichkin and Harichkin could travel around her surface. Central sun and other solar systems were far. Centripetal force acted on the same planet, as well as on Earth. Harichkin and Larichkin were not threatened by danger to fall from the planet and to lose each other. And they dared to disperse. One became on “northern”, the second – on “southern” poles. They could have something in common, but did not see each other because of curvature of a surface. And soon ceased and to hear as the planet even more inflated and the distance between poles was extended. They met on “equator” again.

– Well what you on it will tell? – Harichkin asked.

– The fact that we got to the world of atoms. Our molecule was scattered on atoms of which it consisted. We stay on an electron – “satellite” of our central sun – a proton. We are surrounded by the “star world” of other solar systems, other atoms. And everything together they make ours “galactic system”. Further immeasurable open spaces of “interstellar deserts” last, and the new congestion of “stars” – other “galaxy” representing a congestion of atoms of other molecule looms over there. Set makes them “metagalaxy” – it is atoms of all our plate. It is possible to determine by number of satellites electrons that it is caesium atoms.

– And what further? – Harichkin asked. – Behind “metagalaxy”?

– Further, probably, end of “world of caesium” and beginning of other infinite worlds...

Harichkin sat down on the earth and struck an electron with a hand.

– Pay attention – he told Larichkin – my hand passes through a surface, as through gas. And if we did not fail in the center, then, so, we are held by some superficial tension. All this is not pleasant to me. I adhere to a scientific hypothesis that electrons at all not particles, but only a wave of an electric origin.

– Well probably we were lucky to see, so to speak, in a projection “clot” of this wave – Larichkin who did not want to begin a scientific dispute in such extraordinary situation at all soothingly answered.

However Harichkin did not give up:

– That is as so: wave clot projection? It vaguely and not scientifically.

Altercation was ready to break out, however the attention of travelers was abstract new event. Through their “atmosphere” the body of almost same size, as well as their planet unexpectedly rushed.

– And it that it? – scaredly Harichkin asked.

– The free electron, most likely – answered Larichkin.

There is a lot of such free electrons. They crossed space between solar systems in all directions, sometimes crossing orbits of “satellites”, sometimes facing them. In this case the satellite came off an orbit and flew aside, itself turning into a free electron.

Harichkin made one more interesting observation. “Free” electrons were not absolutely free in the flight: they were not carried away out of borders of this extraordinary world.

– They just fly within a caesium plate.

– And one more – Larichkin added. – Pay attention to flight of our “planets” and “comets” – free electrons. We are at top of our hypergalaxy and we see how celestial bodies rise up and arc flight come back to a system subsoil. Above a certain border they do not fly up. What does it mean? That free and not free electrons fly up over a surface of a caesium plate.

– However as after all the wave theory ... – Harichkin did not calm down.

The world of atoms as if reached the border and did not increase any more. But suddenly – a new awful event. Travelers saw how from “sky” to their world the shining masses flies. They in a flash overcame “heavenly” spaces and fell upon “solar system” the real rain of fire. And each “droplet”

reminded the flaring sun. Travelers got a fright. What if one of such sun falls them on the heads and will absolutely incinerate them?

– I understood what is it! – Harichkin exclaimed.

– I too! – Larichkin picked up. – It is just a ray of light. Yes, Filinov lit a caesium plate with a strong ray of light, and we see “light quanta” – light streams which are continuously flying to our world.

– Not absolutely continuously – Harichkin corrected. – We see the separate heated kernels which punch our world in the same direction. Continuous the fiery stream seems only owing to the bystry movement light quantum.

– Look! One of sun faced “planet”, and it departed to space.

– We see – Harichkin told, raising a finger – so-called photoeffect. Under the influence of light electrons get an additional stock of energy and fly with such speed that are at all carried away from our caesium world.

– In other words, solar “bombs” knock out electrons from a caesium plate.

– In the same way they would pull out electrons and from any other substance.

– Of course. Electrons – accessory of any substance, its compound part.

Thus, we are witnesses of what was opened by scientists at the end of the last century: at illumination of a surface of some metals light waves of a certain length these metals let out electrons.

The light stream stopped also unexpectedly, as well as began. And at once after this event began to flow upside-down. All scales began to decrease. Harichkin and Larichkin’s “planet” contracted in the eyes, becoming less. It did not fly around a huge proton on an orbit any more, and approached it on a spiral. Also the proton decreased. “Solar systems” approached until merged in one molecule. Fussy molecules grew and approached one another. Here all of them united and became similar to the huge valley with mountain folds. Mountains were quickly narrowed as if thawed, and Harichkin and Larichkin saw soon that they stand on a caesium plate near big as the tank, inkwells.

On it their adventures did not terminate. Got closer to them, gleaming, a convex surface. It was the magnifying glass of professor Filinov. But also through a magnifying glass the old scientist could not make out the pupils yet. It was necessary “to breed” them a little. Then Eagle owls were taken by thin tweezers, picked up Harichkin and Larichkin and threw them into emptiness. Probably, it reduced again them because Harichkin and Larichkin long flew in world space before fell to mountain top. No, they did not break. They were easier than fuzzes. Rose, looked round around. This time they came to be in the new world.

“Earth” on which they stayed was not limited to the horizon. Regions of “earth” of hollow rose up and passed into “the heavenly sphere” of the same color, as “earth”.

– Whether there are no we in the world of the fourth measurement? – Harichkin asked.

– What there fourth measurement! – Larichkin objected. – Just we stand on the internal surface of a spherical body. You look, in the center of this sphere there is a huge ring strengthened on the core thrust to “earth”, and in “sky” opposite to us, some star foggy flickers. It occupies nearly a quarter of all sky.

– Listen! – Larichkin exclaimed. – Yes same middle of a glass cylinder of a photo cell! I knocked over a layer of “earth”, and something began to shine. It is, apparently, a silver layer. The caesium layer is applied on it. Therefore, we stand on the photo cell cathode, and a ring in the middle of our “Universe” – the anode. A round opening in a lamp as the giant window to other world, shines foggy: the photo cell, obviously, is already included in the battery, however streams of current and light are still small and the photo cell does not work.

– We, apparently, again decreased – Harichkin told.

– You see how “mountains” on our “earth” increased, and in the sky we see what was not noticed earlier again – countless multitudes of “celestial bodies” which move in all directions. These are not motes any more, these are gas molecules.



– Interestingly to travel on such planet – Larichkin dreams. – The small planetka – a gas molecule – approaches the surface of “earth”. It flies with the greatest speed, but it seems to travelers that it moves smoothly – they are microscopic beings.

– We jump! Hop! It is ready!. – Harichkin and Larichkin depart to space.

– The interplanetary travel began – Larichkin says. – Well and dance around us! To present only that the whole world stays in such continuous movement! Nothing does not stand still, “even the fact that it costs”. In a gravestone and in the gloomy rock, in a penknife and in the sunk anchor unruly are trampled down, fuss, molecules jump. In solid bodies – more smoothly, in gaseous – quicker, and the temperature is higher, the dance is more live.

Larichkin and Harichkin cross “interplanetary space” here and there. Their molecule with unprecedented speed falls down, flies up, hits against “sky”, then – again down, aside, faces other “planetka” sharply jumps aside from it – keep, do not fall!

During this wandering travelers had an opportunity to study “celestial bodies” from within. One molecules bore on themselves positive charges of electricity, others – negative, and many had both that and others. It were “neutral” molecules of gas.

Unexpectedly huge window occupying nearly a quarter of the sphere it is dazzling flashed. Now it seemed to similar to the real sun. This is Filinov sent a ray of light to a photo cell opening. The mass of light escaped from an opening, rushed through “an interplanetary scope” and began to fall meteorites on an opposite wall. Here also amusing began.

Fiery bombs fell to valleys and mountains, and over valleys and mountains anxiously began to fuss as if expecting a trouble, electrons. Light shells began to knock out these electrons – to tear off them from a surface, and electrons departed to an interplanetary scope, on the central ring – the anode. On the road they faced “neutral” gas molecules and knocked out from them electrons.

The stream of these electrons went to the center of the Universe – to a ring. It was also current. The photo cell began to work. The enormous interplanetary scope dividing the anode and the cathode was won. Under the influence of abyss light as if would disappear. Electrons – negatively loaded parts of electricity – flew to a positive pole.

But on it business did not come to an end. “Neutral” planetka – gas molecules – having lost an electron, became “a positive ion”. Such molecule has already only one satellite – a positive charge. The “earth” of caesium loaded with negative electricity began to attract it uncontrollably. And positive ions began to fall to “ground”. It was possible to think that there was a space disaster. The rain of positive electrons fell to “ground”, beat out new and new electrons each time. They soared up from a surface, rushed in an interplanetary scope on the central ring and fell. Other of them faced on the way neutral molecules, knocked out from them electrons which immediately fell to “ground”. And the stream of “meteorites” which broke from “earth” and flew to “the center of the Universe” grew as an avalanche – there was what is called increase in current.

Filinov, probably, still increased tension in a current chain to which the photo cell was attached, and gas molecules were suddenly lit. Now each of them became similar to the moon, and everything together they represented extremely beautiful show – thousands, millions of the moon which incessantly move.

– Gas luminescence? – Larichkin who did not forget about “terrestrial” names of the phenomena made in this world exclaimed. The sun window inflamed, grew dull. Filinov regulated luminous intensity. And when “window” shone stronger, the stream of electrons from a surface to the center of a sphere increased if “window” grew dull, also the current of electrons decreased – in other words, current fell. Harichkin and Larichkin saw what the scientist determines only by imagination, calculations given devices for observation own eyes. They could observe how the slightest increase or reduction of light increased or reduced quantity of the electrons falling on the central ring – that is current.

Harichkin and Larichkin were fascinated by an unprecedented show. They even forgot about danger and suddenly with horror saw that on their planetku-molecule the celestial body falls. They did not manage to scream from a fright as there was a collision and they fainted. And when recovered, saw that lie on a sofa near a cat of professor Filinov who had the usual sizes, as well as all around.

– There now – said Eagle owls – you also visited the world of a microcosm and now, probably, acquired much better all processes what are made in a photo cell. Light can give rise to electric current – you knew it earlier. Now you saw how he is born.

Photo cell! This new mighty weapon of the person. The current which is given rise or strengthened by light can set the mechanism in motion. Light can open and close doors, warn about the fires, stop trains, cars, to set huge cars in motion. Light of the star located at distance of hundreds of millions of kilometers from Earth can include an electric lighting, perform any task; the photo cell can sort cigars and consider development on the conveyor; the photo cell entered the industry, it will become usual soon and. The photo cell opens before inventors unlimited opportunities in all areas. Our photo cells are still weak as independent power sources, but that time when we learn to get directly from the sun the electric power of “industrial value” will come already soon. The roof of a body of the car will be a photo cell, and the car will move the solar energy turned into current. Roofs of houses will collect light in the afternoon to spend it at night. The polar summer will give so much photoelectric power that will get it for all long polar night. And night will stop being at night.

– You forgot to mention one important application of photo cells – in television – Harichkin told.

Larichkin pushed it sideways, however was already late. Filinov quickened and started talking:

– Yes, in television. Now I will explain you what role is played by a photo cell in television.

– We know – Larichkin answered.

– You know? – flew on it Eagle owls. – And I, guilty, not up to the end know. Also I want to understand, explaining to you.

It was its method: “to study, training”. Told about Filinov, as if he complained once: “What pupils, stupid at me! You will explain time – do not understand, you will explain two – do not understand. At last itself you begin to understand, and all of them do not understand yet”. And he liked to explain “known long ago”, assuring that in these explanations always and to itself (himself) you understand something that it seemed unclear and that unexpectedly you will understand more deeply and better.

– I know – Filinov became angry – so can tell only children like you. We, of course, know something, however in the field of radio, as well as in other areas, we still do not know a lot of things. Unless features of a layer of Hevisayd are known to us completely? Unless we are able to explain why the radio transmitter of bad home weak radio station reaches sometimes such distant reception and transfer what you will not always reach at powerful stations? We often grope the way in the dark. If we already “knew everything”, it would be awful. The youth on a share would have one cramming. Fortunately, for an inquisitive, innovative mind there is a work plenty. And for you including, my greyish pupils and assistants! – he added cockily. – The one who knows most, most modest.

By the way, about photo cells and television. Without photo cells also the television, of course, would be impossible. It is still imperfect also now. And therefore before going forward, “we will repeat passed”. I will tell only about the principles.

Larichkin breathed a sigh of relief.

– From your “travel” we learned that light can be turned into electric current. And vice versa: people learned to transform electric current to the public. All television is also based on these two facts. Here beam of light of a certain brightness. I pass it in a photo cell. Light excites current of the corresponding force. I give this current on wires or without wires. In the place of reception I turn electric current again to the public. And on the screen of the reception device there is a light spot,

exactly same as though the ray of light from the source fell directly on our screen, without being exposed to transformation and transfer...

– Not exactly – Larichkin corrected. It was evil on this lecture about things, long ago known. – The ray of light loses something in force. Besides...

– Well, of course – Filinov agreed – at any transmission of energy it is necessary to deal with losses. And our purpose – to minimize them. But you do not interrupt me. I set the task to understand to myself... that is to you, the basic. – And it continued: – Thus, the ray of light can be transferred to other place by means of electricity. It would seem, as transfer of images on radio is easy. Put the person facing a photo cell, light more feasibly a face, and light reflected from an appearance will get to a photo cell, will excite current, current will come to other place, there it will turn to the public – and here before you on the screen the image of the person. And actually what we have? Not the image of the person, but light spot, no more. Why? Already and it is not so easy to answer this, apparently, simple question. Here we should think of how we in general see how our sight is arranged.

Why we see? And under what conditions? We see objects only because on them there are treatments of light and shade. In darkness everything is covered by absolute “shadow”, everything is black, and we do not see. However and at bright light we would also see nothing if shadows disappeared. Everything is dazzling would shine, would stick together eyes. And only. Sometimes inexperienced photographers seat photographed against a strong light source. Shadows almost disappear, and on a card instead of the person “pancake” turns out. Features cannot almost be distinguished. And light was more, than it is necessary! If we, as well as on the Moon, had no atmospheres, then all objects standing in a shadow absolutely would disappear from the field of our sight, and the subject lit half would seem to us the photo cut in two. Our sight is adapted for terrestrial conditions where thanks to the atmosphere we have an incalculable set of shadows and penumbras. Let’s take the human face lit sideways. We see this person. However actually we see a huge number of variously lit points – and not therefore only that points are lit unevenly, but also because the person unequally absorbs and reflects rays of light.

The beam which fell on black as if by soot the drawn eyebrow, it is almost entirely absorbed, and the pale cheek will reflect light completely. But also on this cheek there will be many separate points which will unequally reflect light. Each point of the person sends to our eye a separate beam, and beams these different force. Some points do not send beams also at all. All beams meet in our eye “lens” – a pupil, and then, having refracted, again disperse – exactly as in a camera lens! But display arises not on “an opaque plate”, and on an eye retina. The last consists of huge number of separate flasks, and each flask has “wire” – the nerve transferring the image to a brain. Look in a microscope approximately of a fly. There it is visible more distinctly. An eye of a fly is similar to honeycombs. It is not one, but hundreds of six-sided eyes. And on each of them only one beam – strong or weak gets. Our retina represents something like a board for a mosaic with ready dimples into which it is possible to insert stones of the first color. Set of these “multi-colored” rather raznosvetny stones also creates an overall picture, be this person or any other subject.

And the photo cell has no “retina”. The photo cell is only one flask of our retina, it is only one cell of an eye of a fly. If the fly could close all cells of the eye, except one, then either one light point, or an arithmetic average of all beams would get to this cell. And the fly would see only one spot. Here the same arithmetic average of all beams receives also a photo cell from the lit human face. Also it reflects only one spot.

But how in that case to transfer the image of the person? You will not remake a human eye, and a photo cell if on it all beams reflected by a human face fall can transfer only a light spot. It is impossible! But the separate points on a face which are sharply lit can be transferred. If to cover the lit face with the screen and in the screen to make a small hole which, say, passes a light beam only from one point of the person, then this beam, without mixing up with others, gets on a photo cell and causes the corresponding current which can be transferred and again to turn into light point. If

we place this hole in the screen against brightly lit point on a nose, then the bright beam will cause also current of the corresponding force, so, and on the accepting screen brighter point will flash. If the hole appears against the shaded point of the person, then and it will be reflected in the screen more dark stain.

Thus, it is possible to transfer only separate “stones” of different coloring for our mosaic portrait. At the same time on our mosaic these “stones” will settle down in the same spatial ratio in what they were on a face. However how to make the finished mosaic portrait? We have an opportunity “to send” only one “stone” for once. Let’s say sent black – eyebrows – and it is necessary to send white “stone” – a forehead. But hardly we will move a screen hole from eyebrows on a forehead, black “stone” will disappear, and we will not receive a mosaic portrait. So it would also be if one feature of our sight did not come to the rescue. From the screen black “stone” disappears, but he still lives in our eye and some time keeps. Our sight is capable to keep what was seen during approximately seventh fraction of a second after the subject dropped out of sight. Thus, we will see still black “stone” on the screen when on it white appeared in other place. And not only these two. If in one seventh seconds we manage to send one by one hundreds and even thousands of “stones”, then on the screen we would see them at the same time everything. Needless to say that by what the smaller quantity of “stones” will be laid in our mosaic, that the portrait will “be more rough”. The task, leaves, in that for the shortest time it is possible to transfer more “stones” – light points. This task was solved by Nipkow’s disk. In this disk of a hole are placed on a spiral. Each point of the person sends a ray of light through a certain hole of a disk. And all points at the same time create full “portrait” – the image of the person who during transfer can even move, laugh, and all these movements will be repeated on the screen.

The problem of television was so solved.

However the decision nevertheless was incomplete. I already said that the more in our mosaic, the image is fuller and more expressive than “stones”. But we are limited to time. And if we give for a short time too many “stones”, then each of them will exist very short time. The more “stones”, the less time “burns” on the screen light point, the photo cell works more weakly, the less light is transferred to the screen, and the image appears dim. It was necessary to look for an exit in other design of a photo cell, and the right way of searches could be only one – to try to create the photo cell coming the device to a human eye with its “mosaic” of a photosensitive retina.

Such photo cell was also created. In it there is a transferring tube, on it a photosensitive mosaic on which the cathodic beam slides. Each element, each cell of this mosaic is as if a singular photo cell of the microscopic size like a flask of our eye. Each element receives a charge from a light beam. This charge is sent by the lamp amplifier. Each point of a new photo cell consists of the small silver ball covered with a caesium layer for photosensitivity. What did we reach? The image became expressive, clearer and lit. There was a possibility of increase in screens.

Whether the problem of ideal vision at distance is solved by it up to the end? It is clear, that does not decide. The wonderful eye of the TV still concedes to the most wonderful eye of the person. The task is in that on the TV screen we saw not worse, than on the screen of cinema. But also the cinema did not tell the last word yet. Why not to reach the color images which are ideally transferring nature why not to solve a problem of stereoscopy of the image? In a word, the screen of the TV is designed to give and will give ideal copies of reality. The image on the screen reaches full illusion. The person forgets that he sees the image on the flat screen, but not “an open window to the world”. The television connects to a sound broadcast. The person both sees and hears that he becomes in other place. The person creates to himself a teleeye and a teleear. Before it the whole world is open, and he becomes really the owner of the world. Its horizons extend to boundlessness. Its knowledge of the world increases. He becomes the new person in comparison with the ancestors – the person giant. Ancestors heard only at the distance available to an ear, and saw only with the naked eye.

Yes, the person will undergo wonderful transformation, will rise by the highest step, will gain “divine” properties of an omniscience and vseslyshaniye.

Eternal glory to that who worked on creation of these new tools of human knowledge of the world – “superears” and “a wonderful eye”!”

– Well? How? – Mischa asked, having finished reading.

Ginzburg moved lips.

– Anything, interestingly. You did not understand something, something is inexact lit. And in general it is interesting. About a cat tiger – it at you well left.

Mischa was a little disappointed. The cat is so, for humour, and here what scientific inaccuracies? But Ginzburg hurried.

– Reach! You will study more deeply, you will correct itself. Then you will read to me once again.

– But you go soon!

Ginzburg a broad gesture showed on the screen, a loud-speaker and theatrically recited:

– There is no separation any more. We will see and speak here is how now.

At last there came also day of departure of an expedition. Ginzburg warmly said goodbye to Mischa.

– Good-bye, and, I hope, to fast – he told. – You will see me on the screen as soon as I arrive to Murmansk and I will enter a radio cabin. On our trawler I will place TVs so that you will be able to see almost everything and by steamship, and around. We not for nothing worked with your father!

Mischa strong shook hands with Ginzburg, and they left.

The engineer Borin left to see off the guest.

When Mischa remained one, he looked at the white screen with the size in square meter, as on the page of the book where the text of the fascinating novel will appear soon.

## MISCHA THE BARIN GOES TO THE TELEEXPEDITION

In the evening of the same day Mischa heard Ginzburg’s voice from a loud-speaker:

– Hallo, Mischa! I fly over Petrozavodsk. Over the Petrozavodsk airfield a beacon in two million candles. Bumpiness. Night flight over Karelia. Aero beacons specify the direction of flight... Just came back from salon restaurant. Ate tasty fish – a salmon. At supper – a concert from Madrid. I go to bed soon. Good night! In the morning, I hope, we will meet.

The voice ceased. The father entered.

– Who with you spoke? – he asked.

– Motya – Mischa answered and sighed.

This night he slept is disturbing. It dreamed flight over Karelia. The plane fell in dark. Bears ran together and began to jump near the broken car. Mischa drove away them the burning golovny. Then it flew again, and again the plane fell. Mischa bailed out and broke a leg. Leg of a zanyl. He moaned and woke up. Windows of an office were densely closed, the lamp shone, and it was impossible to define, morning now or night. The nurse came, washed Mischa and gave hot tea. There was ninth o’clock in the morning. Suddenly Mischa heard Ginzburg’s voice again:

– Hallo, Mischa! Turn off light.

Mischa forgot about tea and clicked the switch. The screen recovered. Ginzburg, smiling, stood on the deck of the trawler and nodded. For Ginzburg were seen the boat and near port – an arrow and the winch for a trawl raising. Mischa already knew that this winch will lift the underwater TV. Behind a board dark waters of Kola Bay were seen.

Ginzburg made a sign a hand, and the screen darkened. In a few minutes Mischa heard Ginzburg’s voice again:

– Microphones are not installed on the deck yet. You will see soon and will hear me. In an hour we will move to the sea.

So the screen of the TV turned for Mischa into the original fascinating novel. A lack of this book was that Mischa could not overturn the read pages. However Ginzburg consoled him in the fact that as soon as the trawler comes to the place, continuous transfer of everything will begin that will occur.

Pages turned over one by one. Mischa saw how Sergo took to the open sea and began to rock on gray-haired waves as high-speed Perseus caught up with the trawler “Sergo” and went forward... There passed shkhers of Finland, the cape Nordkap, Lofoten Islands, coast of Norway, Sweden.

Days went behind days, and on the screen of the TV the new picture – the Leningrad port appeared. The big motor ship lifted anchors and went to swimming. All three ships had to meet in the Atlantic Ocean.

Nikolay Petrovich Borin established a two-way radio communication with all three steamships. Mischa could now several times in day speak with the friend Motya. Got acquainted with the captain Makovsky, still the young man, with swarty Azores who also went to a travel, and, at last, with the diver Protchev. Protchev interested Mischa. If the captain Makovsky had a typical face of the Englishman, then the shaved face of Protchev had obviously Mongolian lines. It could be taken for the Mongol or the Chinese. Once Mischa asked Protchev why he is similar to the Chinese, and that answered that he was born in Vladivostok. Mother his Mongol.

Protchev grew up on ocean coasts and since the childhood fell in love with diving business. Now it was the person of years under forty, very strong. The round head, a very broad breast, to Pomor widely placed legs, heavy fists. He called himself the diver on calling. Still the young man he “set up records” long stay under water without diving suit. Protchev already fell by a bottom of five Soviet seas and now with impatience expected when it is possible to look that he is created at the bottom of the Atlantic Ocean.

During swimming the screen lit up not really often. Mischa saw the deck of Perseus, the captain’s cabin of Sergo, a cabin of the big motor ship.

The ships headed for twenty degrees of the western longitude and thirty seven degrees of northern latitude – exactly here, on the great ocean way from Buenos Aires to London and Hamburg, “Leviathan” died. Moscow shone electric fires for a long time, and on the TV screen Makovsky’s face with the English profile was still filled in with the evening sun. And what tone! This golden light of the sun, an ocean blue, yellow with black strips of a pipe of the steamship, white shirts of seamen – what clearness! Yes, it is better, than on the screen of cinema.

Captains of three ships reported on Barkovsky. Weather favored to an expedition. The ocean was quiet. Mischa himself could observe a rhythmical kolykhaniye of a surface of the water, and sometimes it seemed to it that he inhales “aroma of the ocean”. But, perhaps, this aroma was brought by ep-ronovets Kirillov if only aroma of strong “kepsten” [57] could remind a sea smell.

Sometimes on the edge of the screen steamships with overseas flags were seen. Passed them on a great way between Europe and America much. The Soviet flotilla from three vessels could draw, of course, attention. But as the Soviet vessels often crossed at this time the ocean, a talk on a flotilla was carried on meanwhile only among teams of foreign vessels. Some more days, and a flotilla will come to the place.

## IN ATLANTIC

Makovsky sat in a captain's cabin, having inclined over the card.

– So – he told and put a pencil the end to a skreshcheniye of the twenty ninth degree of the western longitude and the thirty seventh northern latitude.

– Profits? – Azores asked, releasing dense puffs of the Manila cigar from a mouth.

– As if – the captain answered. – The place of death of “Leviathan” is designated quite precisely. We, probably, should probe a bottom on the square about a quarter of square mile, no more. It is necessary to report to the headquarters that we arrived to the place. – Makovsky gave a hand to phone.

– A billeting – Azores stopped it – I will pass in a radio cabin.

Mischa Borin re-read history of ice campaigns.

– Hallo! – he heard Azores's voice. – Who is on duty in the headquarters?

Mischa jumped up on a bed. He could already sit, but did not allow go to him yet.

– Ya. Mischa. It you, Azores? What new? You arrived to the place?

– Yes. Tell about it by phone to the father and companion Barkovsky. The captain Makovsky waits for orders of the headquarters.

– Now! – Azores heard an uneasy voice of Mischa and grinned. Azores knew with what impatience the inquisitive teenager expected when the flotilla arrives to the place. While Mischa called by telephone to members of the headquarters, Azores came back to a cabin of the captain and told:

– One is not absolutely clear to me: you, Makovsky, say that the place of death of “Leviathan” is known quite precisely; depths of the Atlantic Ocean are precisely known too why our scientists and technicians, designing the underwater TV, counted on depth about one thousand meters? Perhaps, such depth is also not necessary.

– Yes. Depths of the Atlantic Ocean are rather known – Makovsky answered. – Measurements of ocean depths established existence of the greatest underwater plateau which begins to the south of the British Isles, lasts on the West along the African coast and at an angle approaches South America. However this underwater plateau not flat. In 1898 laid the cable line from Europe to North America. For nine hundred kilometers to the north from the Azores the cable broke and fell to a bottom. To lift the end, it was necessary to look for several days it on a bottom steel cats. And that's when it became clear that the bottom in this place reminded a mountain chain: everywhere high rocky tops, steep slopes, gorges, deep valleys met. Sami Azorskiye and the Canary Islands – only tops of these underwater mountains. The sunk “Leviathan” could lay down on top of the underwater mountain, and then to us, perhaps, it will be possible to lower to him even the diver. But it could dive also into the deep gorge, and into the underwater valley. Then who knows whether we will be able to lower even the television transmitter. Should we redesign it counting upon a deep water, so, and bigger pressure. We are over very uneven underwater relief now. Calculations were conducted on average depths of these places.

– What we will begin with? – Azores asked.

– As the headquarters will order – the captain answered. – I think, from a measurement of depths.

Makovsky was not mistaken. The headquarters ordered to begin careful measurements of depths on the radius of five hundred meters from that point where died as assumed, “Leviathan”.

“The reconnoitered circle” as it was called on the card, was divided into three sectors. In each of them one of expedition steamships had to conduct works. All data were marked on the map of big scale and broadcast to the headquarters.

For Mischa interesting days and hours came: it also got the card and designated on it depths, character of soil and so forth. Soon the piece of a bottom of the Atlantic Ocean became known

to it, probably, better, than topography of streets of Moscow. What it was the marvelous underwater country! Around death of “Leviathan” from a bottom of the sea the mountain peak which hollow fell by the southwest rose. In the northwest there passed the deepest gorge of one thousand four hundred meters in depth. Now all question was in where “Leviathan” fell.

But the most interesting was ahead. People will lower “an underwater eye” in ocean depth, and Mischa will see hiding places of the underwater world. Oh, as slowly there is time!

Sergo, Perseus and Martie worked several days until finished measurements.

The radio communication worked almost continuously. The difficult question was considered: how to give to steamships perhaps big stability in the open ocean. The extended anchor chains hardly reached tops of the underwater mountain. One steamship still could drop an anchor, but for three over peak there was no place. Waves and wind could lead to collision of steamships and accident. And “Leviathan” could lie on a considerable distance from underwater peak. The floating anchor only slowed down drift of the steamships carried by a sea current and wind. Meanwhile almost full immovability of vessels was necessary for work with a TV eye. It was necessary to lower a teleeye on the bottom, and it extremely uneven. The device will trudge on a bottom and can crash against ledges of sharp rocks. It was necessary to hold cars under steam and to maneuver the screw.

– And unless it is impossible to extend an anchor chain? – Azores asked.

– Of course, it is possible – Makovsky answered. – But you represent what weight of a one and a half kilometer long chain will be?

– Means, it is impossible?

– Up to the certain depth it is possible. For big depths we should build special steamships, special winches, arrows, special decks or pontoon bridges for folding of a chain. Depth is a stronghold which is not so easy for overcoming.

At that time when steamships prepared for descent of a teleeye, in Moscow, at institute of telemechanics, three new offices of underwater television were prepared. With the first there could be an accident. Besides and searches will be quicker conducted if each steamship has the TV. TVs will be delivered to the ships gidrostratoplany which creation is just finished by the new plant of jet superhigh-rise transport.



## UNDERWATER TRAVEL

Mischa has just breakfast and “laid down on watch”. Ginzburg promised for today a lot of interesting.

The radio telephone and televizorny installation worked smoothly. Let behind a window the Moscow trams ring and cars, and here, in a spacious office – Atlantic Ocean hoot.

At last on the screen there was a cheerful face of Motya. As he sunbathed!

– The session begins! – the voice was heard, and Mischa saw narrow boards of the deck on the screen, is dazzling lit with the sun. Someone’s bare feet ran on the deck, the white bucket with the blue inscription “Sergo” flashed, the excited voices were heard, for some reason a low shmeliney bass the beep of the steamship shortly hooted, to it another responded.

Trawler board. On an arrow – two sailors strengthen a cradle, the hook-on platform on four ropes. Probably, will paint the trawler case. In foreign swimming seamen like to brag of purity and beauty of the vessel. Near the winch – the compressor, near it – a diving suit, a helmet, the curtailed hose. All equipment of the diver.

Popykhiv a tube and straightening out a woolen jersey, there is Protchev. On his head – a woolen hat tarboosh.

– Protchev, you are going to dive? – Mischa asked. And his words, sounds of its voice, having undergone difficult transformations, already sound on the deck of the trawler. Protchev involuntarily turns the head to a loud-speaker and speaks:

– Yes, I want to go down, look that here under water.

Kirillov enters Borin’s office. On the run he welcomes Mischa and gives the order in the microphone:

– To prepare for descent! One on the compressor, one on a signal, one on a hose, one on the manometer, one for hours!

Protchev beats out a tube – under water will not smoke – and already orders:

– Shirt! Galoshes! Shirtfront! Helmet! Cables!

Begin to dress the diver. Protchev gets into a diving shirt – the green rubberized suit from a strong canvas; to it help to put on heavy boots with strong socks and lead soles, tighten thongs, through the head put on a heavy shirtfront, screw an air hose on a copper branch pipe.

While Protchev prepares for descent, Mischa quietly asks Kirillov: why it gave the team “one on a signal”, that is to watch an alarm rope – in a helmet there is phone.

– And at the railroad do not forget a two-wheeled cart – Kirillov answers with Kozma Prutkov’s aphorism.

Sailors fastened on a breast and Protchev’s back diving heavyweights in forty kilograms, stretched from a back under Protchev’s legs “podkhvatnik” and fixed it in front.

At last, put on the heavy “copper head” Protchev’s head and began to screw it on a shirtfront. At the same time earned the compressor giving air. In beams of the sun a copper helmet and its glass it is dazzling shone. Protchev stood on the deck, but was already “a water inhabitant”. What monster he seemed to Mischa!

Old companion Protcheva epronovets Grey clapped a hand on a helmet: it is possible to go down. The cradle was fastened near the board. Protchev moved on the deck, booming knocking lead soles.

– What athlete! What force! – Mischa was surprised.

Here Protchev sat down in a cradle as he in a swing, grasped with hands a rope.

– Lower! – Kirillov’s team in Moscow and in the Atlantic Ocean was heard.

The winch began to work. Protchev plunged into water. The teleeye slipped on a board, and Mischa saw the second winch, and about it Ginzburg. That fussed among sailors who helped to lower a teleeye on a bottom. The big black sphere with konusopodobny ledges slowly went to water.

Kirillov lit a cigarette. Azores on the deck of the trawler also. The Spaniard stood near a board. Ginzburg bent over a board and looked in water. On the trawler the call rang out. Kirillov approached Borin's table and began to write. Mishina the aunt entered and gave it an envelope. The letter was sent by the companion who went to Pamir.

Probably, the interesting letter, but there is no time to read. Sounds of the Atlantic Ocean as if failed in a silence abyss. And at once incessant noise of Moscow became more heard. On the screen the smoke of a cigar of Azores blinked. Also the screen went out...

What there happened?

And suddenly Mischa saw Protchev. He sat in the cradle which hung in a greenish haze of the ocean. Ropes left up.

Now Protchev, probably, does not feel weight of the suit. Perfectly! Flies "between heaven and earth" and admires the underwater world. In beams of an underwater searchlight it is clearly visible how from an air branch pipe on the copper head the air bubbles similar to mercury droplets rise. This is Protchev "poisons air", pressing the head "a head zolotnik".

– Protchev, you hear me? – with emotion Mischa asked.

– I hear – Protchev's bass sounds.

– Why you went down under water?

– The needle was lost, I look for it.

– And teleeye, what for?

– One eye – is good, two – it is better, and three – it is even better. Unless not so? – Protchev answers. – My field of vision is wider, but an eye is habitual. Still to study a teleeye it is necessary to look in a diving way – Protchev jokes.

In this joke Mischa hears a certain mistrust to novelties.

– What do you see?

– Meanwhile crucians, I do not know how in a local way they are called. Now and you will see the same, as I. Well, where your bubble? – This phrase concerns already Ginzburg.

– I bring, look more to the left! – Motya answers.

A copper helmet of Protchev slepyashche shines. Mischa sees through the wide Mongolian face of the diver flew down. Probably, searchlight absolutely close. Protchev gives the left hand and something catches. His hand approaches the screen, grows, closes all field of vision... Green dregs... A strong sheaf of light, and in it – herd of fishes. Slowly the big beautiful jellyfish floats... The gold sheaf goes to depth of the ocean, gradually weakening, dissipating. And there, below, vague outlines of mountains are visible. Yes, it is mountains, and even covered with vegetation.

The mountain top as if grows and meets halfway... There is no more Moscow, an office, a bed. Whether not Mischa hangs in a cradle and looks at the underwater world? No, it lies in a gondola of underwater "balloon" over the mountain country. The underwater Caucasus, but without glaciers, the mountain rivers and falls. There are no rivers in the region where "airspace" – water.

Again the deck, it is dazzling lit with the sun. The winch rattles. It is heard as waves rustle, hitting against a trawler board. Ginzburg turned back. White teeth flashed...

– Well that there? – the voice is heard. Whose?

Mischa guessed not at once. Ah, it "is told by Moscow".

Kirillov departs from a table and looks at the screen.

The deck disappeared. Dregs... Mischa lives in "three plans": under water, on the deck of the trawler and in Moscow.

You will sort nothing... Dregs! Some shadows crawl on the screen...

– Seaweed – Mischa hears a voice of the captain Makovsky.

The dark cloudlet floated. Perhaps, the shark or a killer whale nearby floated. The huge fin, a white belly flashed... And again dregs...

And suddenly via the screen the sparkling line from below spread. It was more and more thickened, took the round form.

– Mast! A mast of the sunk ship! – Mischa exclaimed.

– Yes, it is obvious, it is a mast – Ginzburg answered. – It is well visible to you, Mischa? – he asked.

– Now will clear up – Nikolay Petrovich said.

Mischa did not notice when the father approached. Whether it is a dream?

Mischa, the father, Ginzburg, Barkovsky, Moscow, the Atlantic Ocean – everything crowded in one room. Yes, now Mischa felt like the participant of an expedition. And Ginzburg sees there the same as Mischa.

The mast descended from the screen, the device, probably, turned in other party. The school of large fishes floated in a distance, measuredly waving fins and gleaming silvery bodies. Very long body was thrown, coiling as a snake. Somewhere very far the fosforichesky spark flashed.

“Marvelous, bewitching world of underwater depths! – Mischa thought. – There are no storms, there are no changes of temperature, there is no weather. Always gloom, cold, silence... And there – life, fight, the pleasures and the grief...”

## **Конец ознакомительного фрагмента.**

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