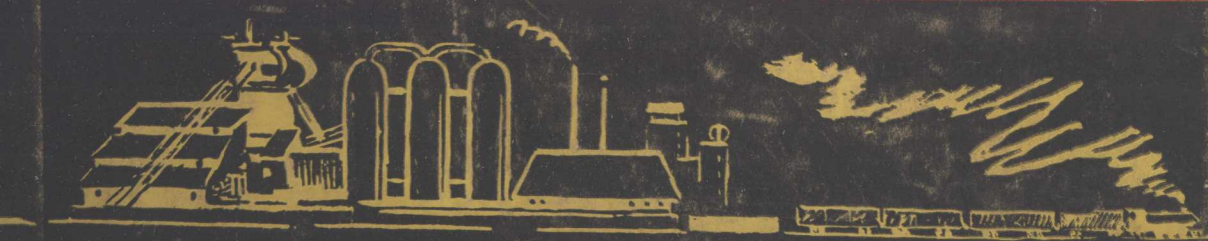


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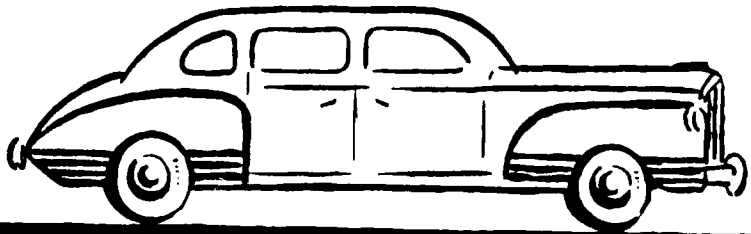
DO YOU

KNOW?



**SOVIET LITERATURE FOR YOUNG PEOPLE**

BOAT, CAR, AIRPLANE, TRUCK



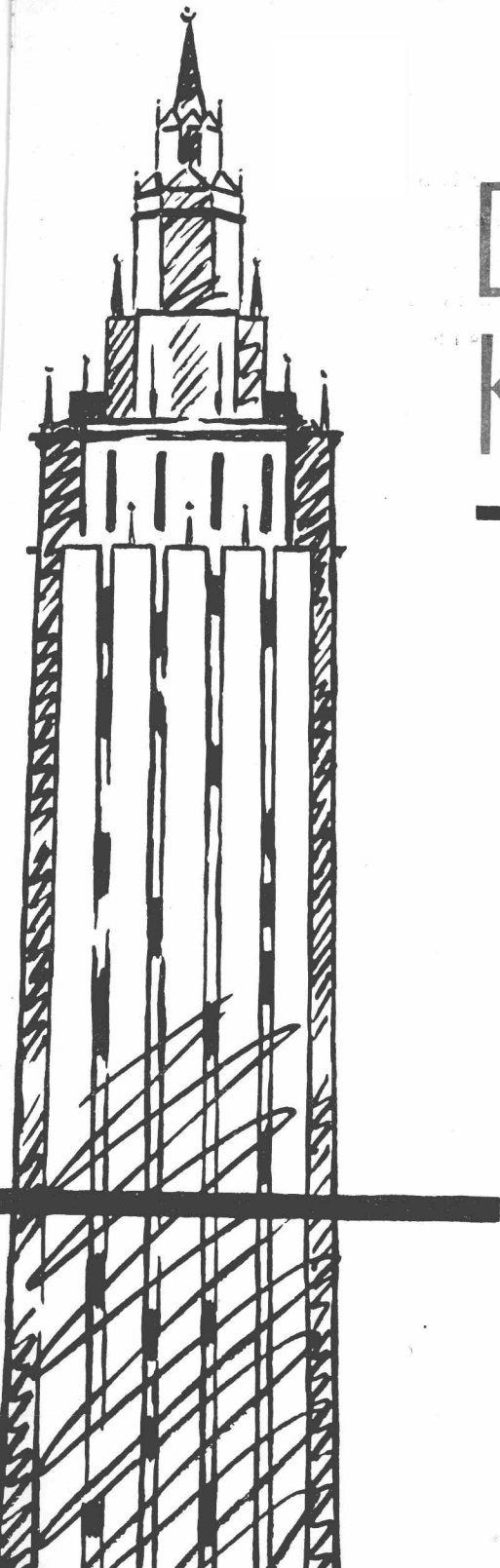
M. ILYIN, E. SEGAL

# DO YOU KNOW?

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FOREIGN LANGUAGES  
PUBLISHING HOUSE

M O S C O W



**TRANSLATED FROM THE RUSSIAN BY F. SOLASKO**  
**EDITED BY PH. ENGES**  
**ILLUSTRATED BY D. BOROVSKY, P. OSSOVSKY,**  
**A GODOV AND O. SHUKHVOSTOV**  
**DESIGNED BY D. BISTI**

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## WHAT THIS BOOK IS ABOUT

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**T**his is a book about the things you can find all around you.

Many of them are old friends of yours: a note-book and a pencil, a tea-cup and a knife, a shirt and a pair of shoes, a saw and a hammer, a watch and an electric bulb, the house you live in and the car that speeds down the street, past your house.

You've known all these things for a long time, and yet you don't really know them well.

You would probably be surprised if you were told that your note-book grew up in a forest and your shirt in a field, that your rubber boots are made of sawdust and your buttons of cottage cheese, that a delicate tea-cup and a clumsy great brick are close relations, that a small hail-stone can tell us which wind is blowing high up in the sky, that a toy tumbler can explain why ships don't keel over.

So you see, you really don't know your old friends after all. We wrote this book so that you can get to know them better.

When you hold a slice of bread in your hand, we want you to know how the grain was made into flour and the flour into bread. When you turn on a tap we want you to understand how the water got there.

In this book you will read about things that are close at hand, and about things that are very far away, too. We're going to take you on a boat which sails down a gigantic stairway, where the steps are made of water; we're going to steam across a man-made sea which didn't even exist a short time ago.

We're going to visit a collective farm and a city.

We're going to walk through a wonderful orchard filled with strange fruit; and then, as if someone had waved a magic wand, we shall see a mighty dam span a river.

Perhaps you'll ask who is responsible for all these wonders. And we shall tell you of the giants who built them. They look just like ordinary people, but their strength can move mountains and bring to a stand-still the waters of swift-flowing rivers.

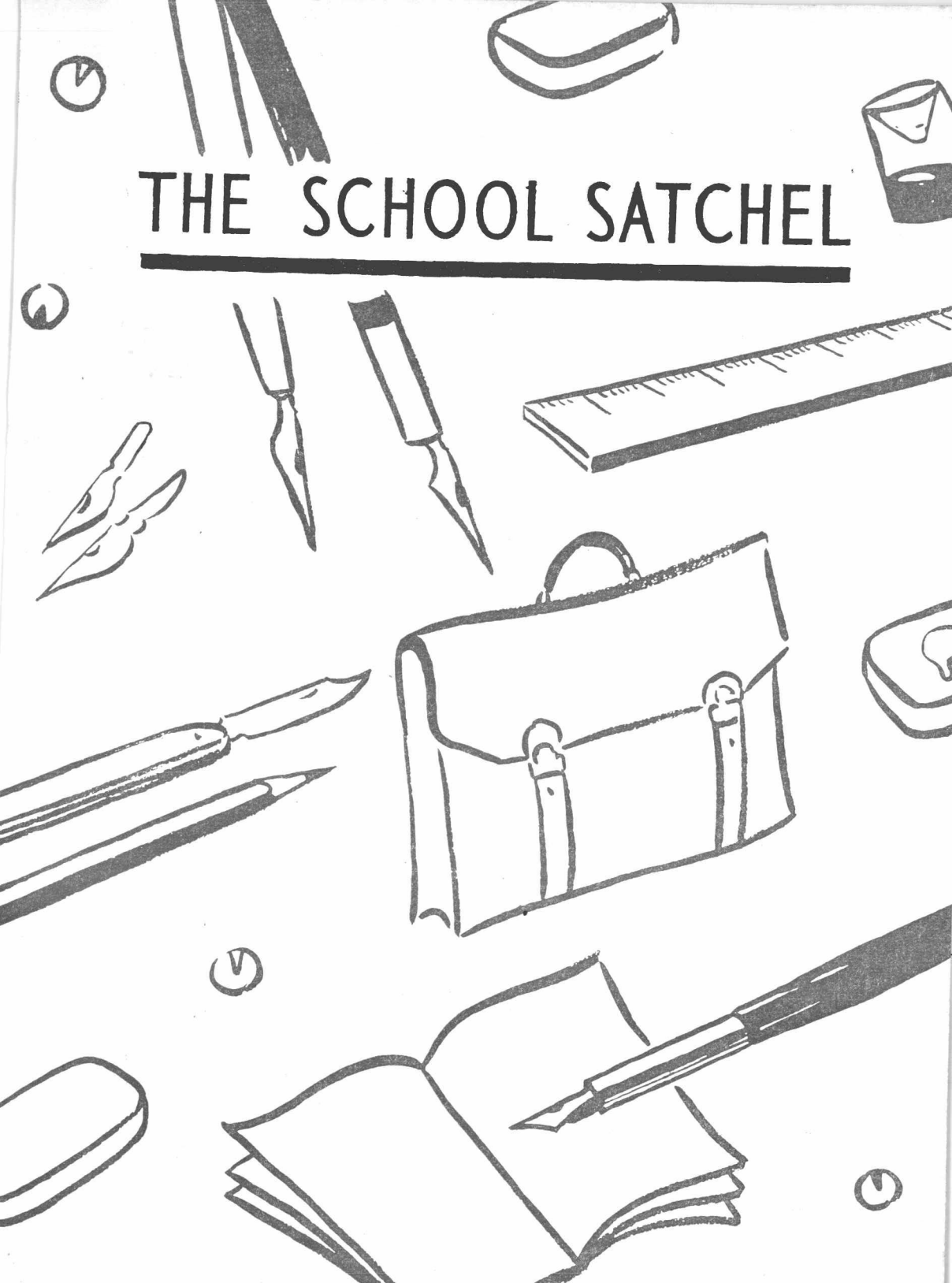
But we don't want to tell you the story beforehand. You had better read it for yourself. We only want to say that we could not write about everything we wanted to. We have only answered some of your questions. The others we had to leave out. But we shall try to make up for this in our next book.

Just a word about how to read these stories. Don't try to read them all in one evening. To understand them better read them one or two at a time.

Some books are easy, like eating ice-cream. You don't have to chew it at all, it melts away in your mouth. Then there are others which are more like nuts—but anyone with strong teeth can crack a nut. You like ice-cream and nuts, adventure stories and books about science. And, of course, you won't be discouraged when you see that you'll have to give a little thought to this book. But whatever seems difficult this year, will be very easy next year.

# THE SCHOOL SATCHEL

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# W

## THE STORY OF A PENCIL

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hen you were still very small you would often rummage in your older brother's satchel. You would pull out his reading-book and look at the pictures. But best of all you liked the little wooden house without windows. The front door wasn't where it should have been. Instead of being in one of the walls, it was in the roof. And it was always so hard for you to open that door.

There were two rooms inside the house: one was long and narrow, and the other was small and wide. Two friends lived in the long narrow

room, a pencil and a blue pen with a shiny point. The pencil's friend, an india-rubber, lived in the little room. It liked cleanliness and that is why it was always dirty itself. If the pencil made a mistake, its mate, the rubber, would go to work immediately and straighten things out, even if it meant getting dirty itself.

There were note-books in the satchel too, and you were very curious about them. You were impressed by the even and beautiful lines, circles, and flourishes your brother had made with his pen.

Now you yourself are a schoolboy. You have your own satchel, your own books and note-books, your own pencil-box with pencil, pen, and rubber. Every day in school you learn how to write with your pen, how to steer it across the white field of paper, along the blue paths of the lines. Your pen is not always obedient. Every now and then it breaks the traffic rules. And they are very strict: it's against the rules to wander off the paths.

Sometimes it's your own fault—if there's too much ink in the pen you'll get a blot. Then your blotter has to rush in and give first-aid.

When you were just learning how to write you had ink blots of all shapes and sizes in your note-book. There would be a black lake on one page and a whole black sea on another.

A pencil doesn't make blots, because it does not write with ink. However, you haven't yet learned the rules of using a pencil. When you sharpen it, it loses almost a quarter of its length at a time. Then you drop it on the floor and the sharp point breaks, so you have to sharpen it all over again.

One pencil serves your older brother for a long time, but in your hands it becomes a tiny old stub in a week. You are just as heartless towards your pen-nib. Look, it's lop-sided already. One side of the point is broken and shorter than the other, and you might as well throw it out.

But we promised to tell you a story about a pencil.

Before our pencil could be born, a beautiful tall pine-tree grew up in Siberia. Not just an ordinary pine, but a Siberian cedar. Have you ever eaten pine nuts? They taste so good, it's no wonder the squirrels love them. Actually, it's wrong to call them nuts, because they're really seeds and they come from the cones.

The wood of these trees is light and strong. Chests are made of it, and moths will never live in such chests, perhaps because they hate the smell of cedar wood.

But the pencils are what the Siberian cedar should be especially proud of, for they are made of its wood, and millions of school children write with them. Why is this tree so honoured? Because it's easy to cut and to plane it. If you cut a little stick of cedar wood with a knife the edges will not be rough and jagged, but smooth and even. However, a stick is not a pencil, and you can't very well write with a stick.

To change a stick into a pencil you have to put something into it which leaves a mark on paper. The best thing for this purpose is graphite. It's as black as coal—to which it is actually related. Graphite also comes from Siberia. The best and purest kind of graphite for pencils is found in places where fast rivers flow from the high mountains, over rapids, through forests and canyons. There's a ridge called Botogol in these mountains where, deep below the earth's surface, as if in an underground store-room, great quantities of shiny soft graphite lie hidden.

Trains speed from Siberia to Moscow, and they carry graphite and cedar sticks called chocks to the pencil factory. To make a pencil you need clay; not just any kind of clay, but the best there is. Such clay comes from the Ukraine. You might ask why clay is needed, since a pencil isn't a brick.

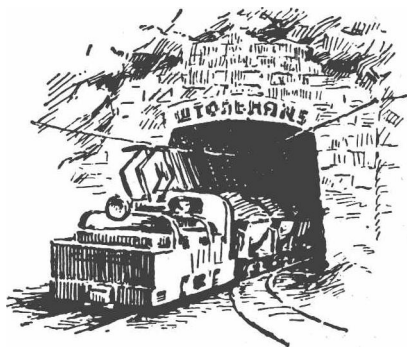
Clay is used to make the pencil's graphite centre harder and more durable. The more clay there is, the harder the pencil will write. That's why some pencils write harder than others. If there's a "B" on a pencil, it means it is soft or "black." But if there's an "H" on it, it means it



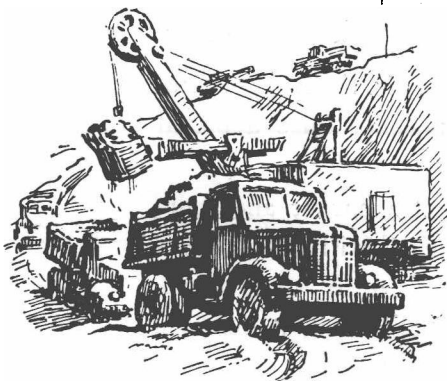


is hard. You only have to look at a pencil to know whether it is hard or soft, without even trying it out.

Wood, graphite, clay.... Do you think that's all? No, there's still more to come. In order to make a pencil you also need glue and grease. Glue is used to bind the particles of graphite together and prevent them from crumbling. Grease is used to make these particles come off the tip of the pencil on to the paper more easily. If the stick of graphite isn't saturated with grease it will write faintly and unevenly. And yet, this is not all. Coloured lacquer and a shiny metal called aluminium are needed. The lacquer is used to paint the pencil and the aluminium to stamp on the shiny lettering.



Finally, all this material has been delivered to the factory. How will all these things be made to take their right places? How will the wooden chocks be transformed into identical, smooth hexagonal sticks? How will the graphite mixed with clay and grease be put through the mill?



In order to get pencils from graphite, clay, wood, glue, grease, lacquer, and aluminium, people have to tackle the job and work hard at it, because things do not make themselves from raw materials without the help of human labour.

But how should they go about their work?