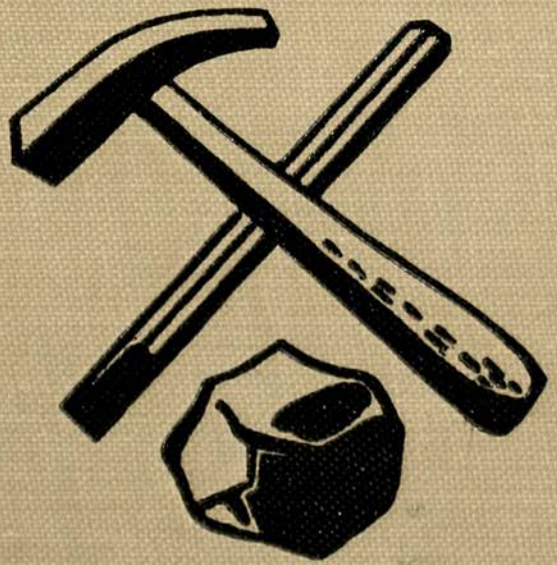
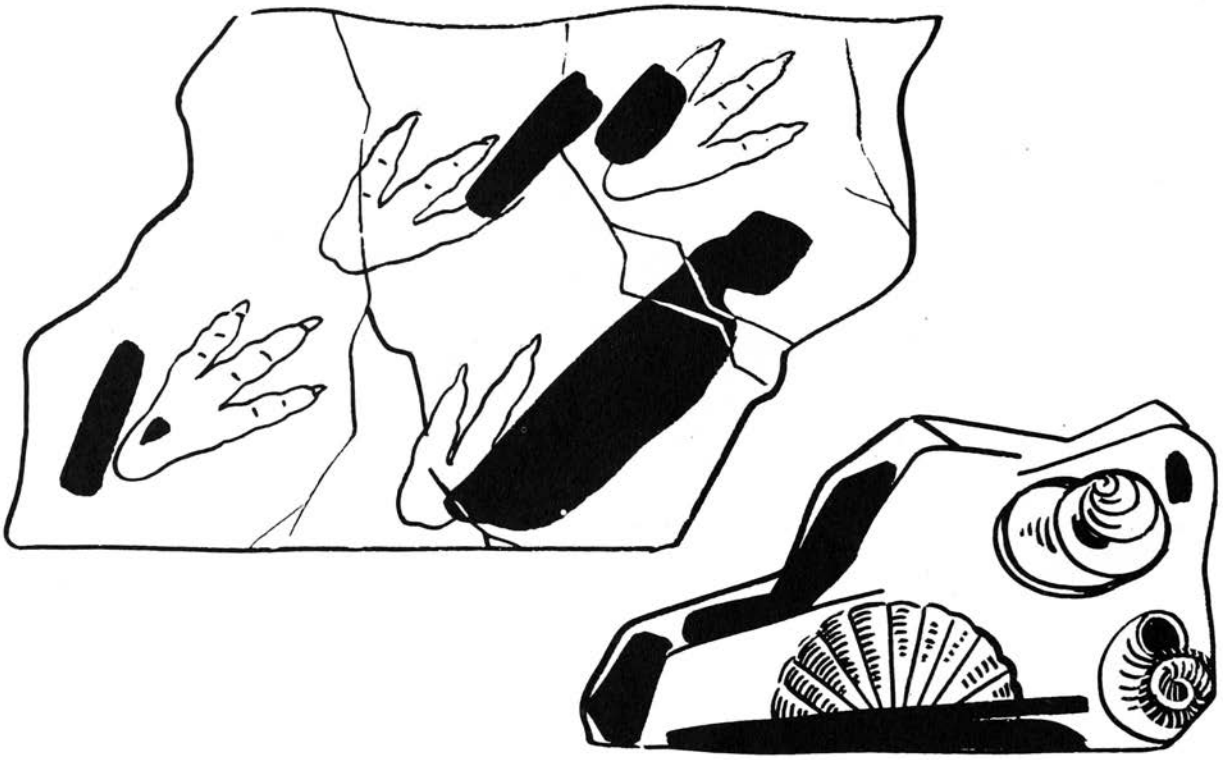
THE FIRST BOOK OF
STONES





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THE FIRST BOOK OF

STONES

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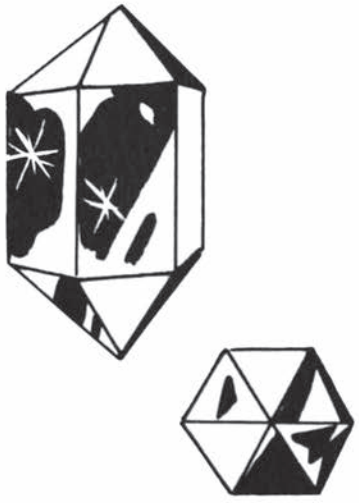

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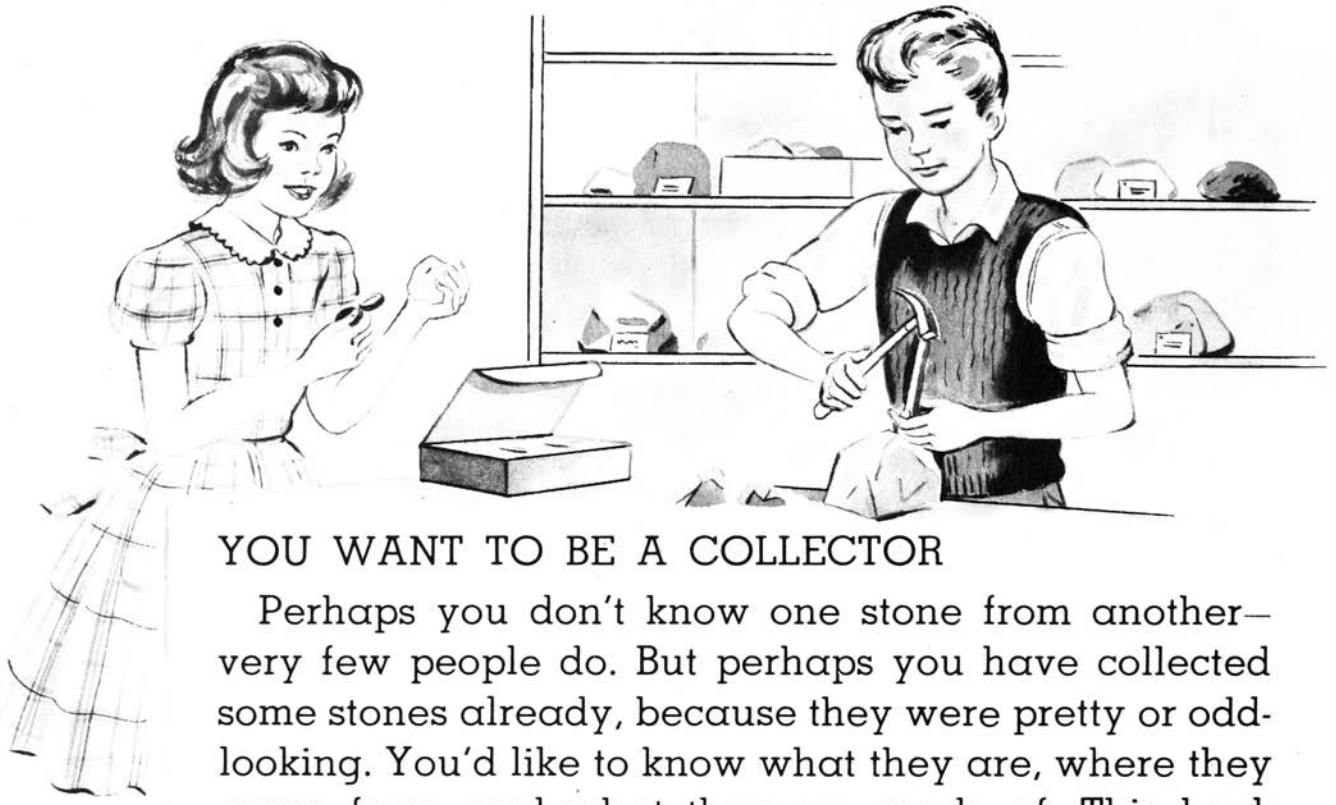


YOU WANT TO BE A COLLECTOR

Perhaps you don't know one stone from another—very few people do. But perhaps you have collected some stones already, because they were pretty or odd-looking. You'd like to know what they are, where they came from, and what they are made of. This book answers your questions.

When you make a real stone collection, you have to be a detective. You have to hunt for clues that will answer the questions: What is it? What is it made of? How was it made?

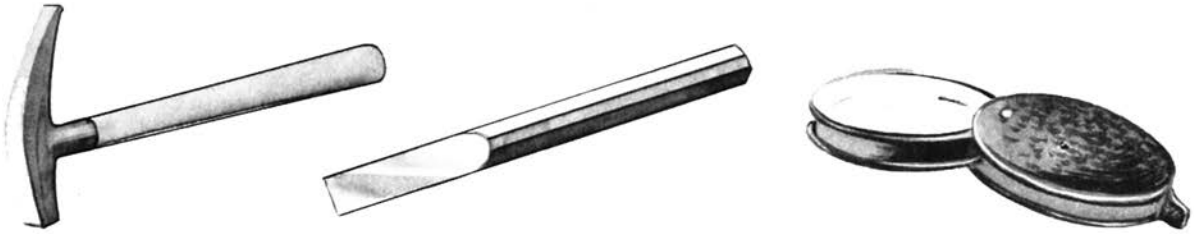
You can't always tell, just by looking at a stone, what it is. But you can make tests that will give you clues.

YOUR DETECTIVE KIT

Every stone detective needs these things to work with:

A knife or a steel file for scratching the stones

A piece of glass to make scratches on—get a piece



with smooth edges so that you won't cut your fingers.

A magnifying glass for examining the stones closely

An ordinary copper penny

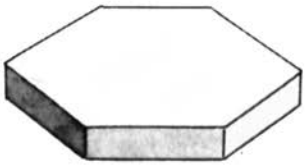
A piece of white tile—the kind that is used on bathroom walls or the kind that is put under hot dishes on the table

A small bottle of plain fizzy soda water—(or ginger ale or any soda pop will do)

You will also need these tools:

A *hammer* for breaking your rocks open. Very often the outside of a rock has been stained or colored from lying around in the earth. You can tell what it's like inside only by breaking it open. Many hammers are not strong enough to break stones, so collectors try to use a special hammer that has a flat end for breaking stones and a sharp one like a chisel for splitting them.

A *chisel* for chipping small pieces of stone from bigger ones. This should be a rock chisel and not a wood chisel from your tool chest. Wood chisels will be spoiled if you use them on stones.



YOUR FIRST TEST

Now you are ready to make your first test.

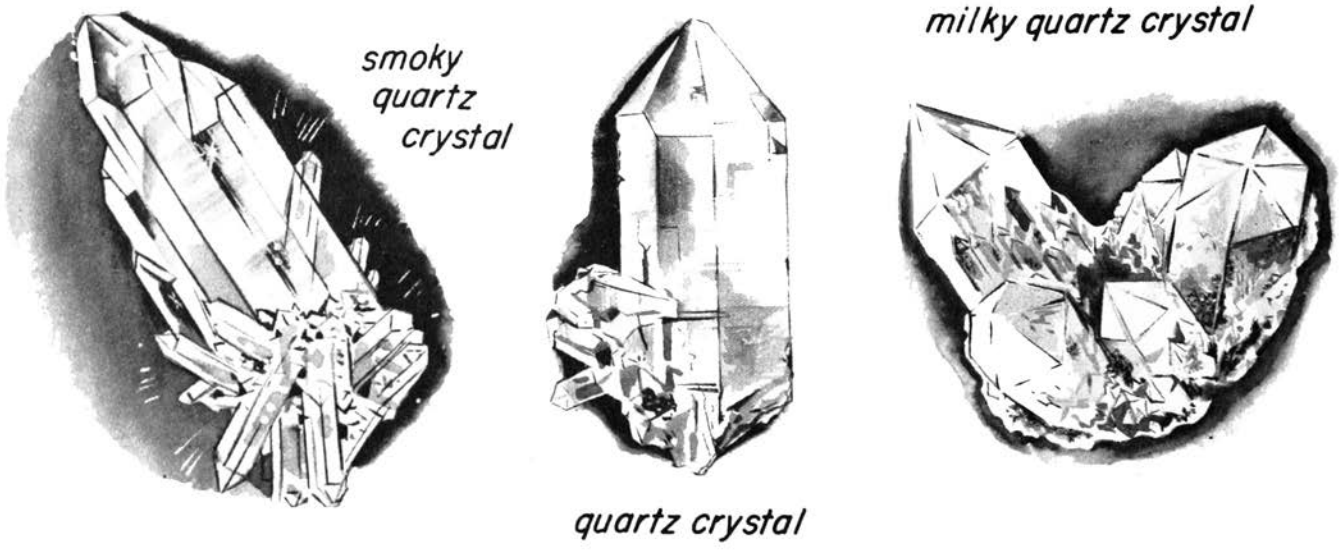
Look over your stones and see if you have one that has a dull shine and is almost pure milky white. It may be a large, polished-looking pebble from a beach or from the edge of a stream. Or it may come from a graveled road or even from a graveled parking lot in town.

Break the stone with your hammer -- you will have to hit it quite hard. See if it is all milky white inside.

Hold a piece of it up to the light. Can you see through the thin edges? Then perhaps your stone is *milky quartz.*

Next, take the penny, the knife and the piece of glass from your testing kit. Rub a rough edge of the stone over the penny. The stone should scratch the penny.

Try to scratch the stone with the knife. Quartz is very hard, and steel can't scratch it.

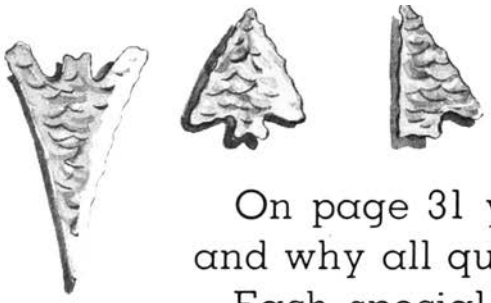


Now take the piece of glass and rub the stone across it. Press down about as hard as you do when you are rubbing out marks with an eraser. Does the stone scratch the glass? If it does, you almost certainly have quartz. The only stones harder than quartz are valuable stones and gems – diamonds, rubies, emeralds and some others—and you probably won't find any of these lying about in the road to pick up.

Quartz is called a stone, but it has another name, too. It is a *mineral*. Later on you'll find out more about minerals.

Quartz is not always milky white. It comes in almost every color. This is because little bits of other minerals are mixed in with it. The minerals that color quartz act like dyes. No matter how you dye cloth, it is still cloth. So, quartz of any color is still the mineral, quartz.

Usually you find quartz in rough chunks called *massive quartz*, but quite often you can find *quartz crystals*. They often occur in little pockets in other rocks. Quartz crystals have six smooth flat sides. They come to a neat point on top. Once in a while you may even find a double-ender! The sides always meet at the same angle, no matter what size the crystal is. Some quartz crystals are very tiny and there are giant ones almost as large as you are.



On page 31 you will find out what makes crystals and why all quartz doesn't come in crystal form.

Each special kind and color of quartz has its own special name. You will be surprised to find how many common stones are varieties of quartz.

flint arrowhead

There is *agate*—real agate, not the imitation kind you find in toy marbles.

There is *amethyst,* which often comes in beautiful large crystals. Its usual color is deep purple but around the iron mines of Lake Superior it is often a deep blood red.

There is *flint.* Indians used it to make their arrowheads.

There are *opals* and *onyx* and *carnelian* and *jasper* —all used in jewelry.

But no matter what its color, each of these specimens is quartz, and each one is hard enough to scratch glass.

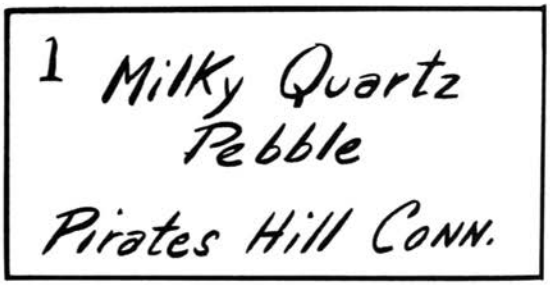
agate

YOUR COLLECTION IS STARTED

Now you have tracked down your first stone.

Next you should number and label it. A good collector does this the moment he finds out what it is. On the label he writes the number, the name of the stone, and the place where it was found.

Cut out a small square of adhesive tape. On it in dark ink write the number 1, and stick the adhesive on the stone. Then make a neat paper or cardboard label with the information you have about your specimen:



Set the stone on the label, place it on a shelf or in a box, and your collection is begun.

On page 77 you will find the best ways to keep your collection so that you can work with it and show it to your friends. You will find ideas for making the work easy and lots of fun.

YOUR SECOND TEST

Suppose you break a piece of white glossy rock that seems very hard. It will scratch a penny. A knife won't scratch it. But, when you rub it over the piece of glass in your kit, the stone will *not* scratch the glass!

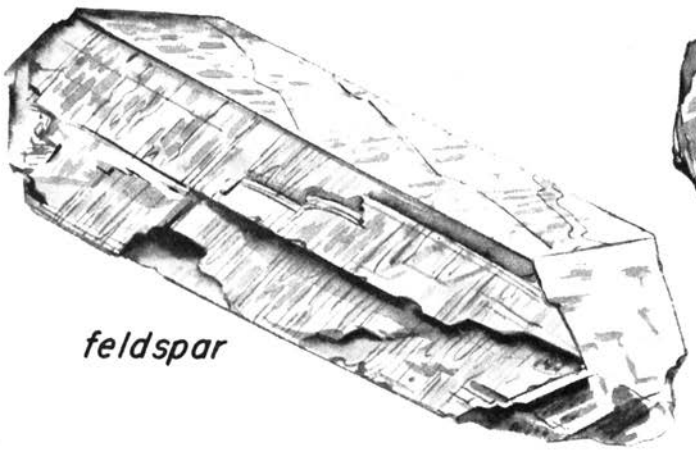
You thought you had a piece of quartz, but the test proves you haven't. Quartz will always scratch glass easily.

Now try bearing down a lot harder as you rub the stone on the glass. Press about as hard as you do when you try to cut a very tough piece of beefsteak with a dull knife. Now can you make a little scratch?

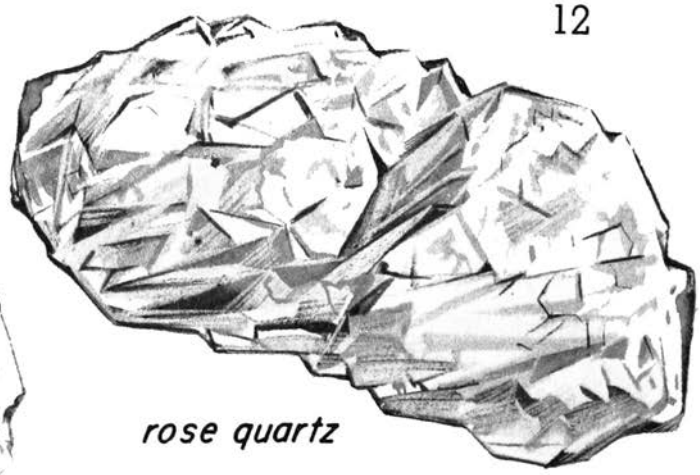
If you can, you probably have a stone called *feldspar*. Its name means "field stone."

Feldspar will also scratch the flat blade of your knife.

It won't be long before you can tell feldspar from a chunk of quartz just at a glance. They do not shine in the same way. Feldspar shines like a polished china plate. Quartz shines more like glass.



feldspar



rose quartz

Meantime you can make another test. Take a hammer and strike a spare piece of feldspar. It breaks clean in two directions and almost clean in a third. It breaks into little slanting bricks, like matchboxes that have been blown a little bit askew by the wind. The angles at the corners aren't quite right angles. The sides of the bricks lean.

But quartz never breaks clean in any direction. Take a hammer and try it. The breaks are jagged and rough, with no good, flat surfaces.

When a stone breaks clean, with one or more flat surfaces, we say it has cleavage. Feldspar breaks easily.

Feldspar may be pink or white or even bright green. Beautiful green feldspar called *Amazon stone* comes from Pikes Peak, Colorado. White and pink feldspar are common almost everywhere. The colors are caused by bits of other minerals that have dyed the feldspar.

Make a label and you have the second specimen for your collection: