

Dry Bones and Other Fossils

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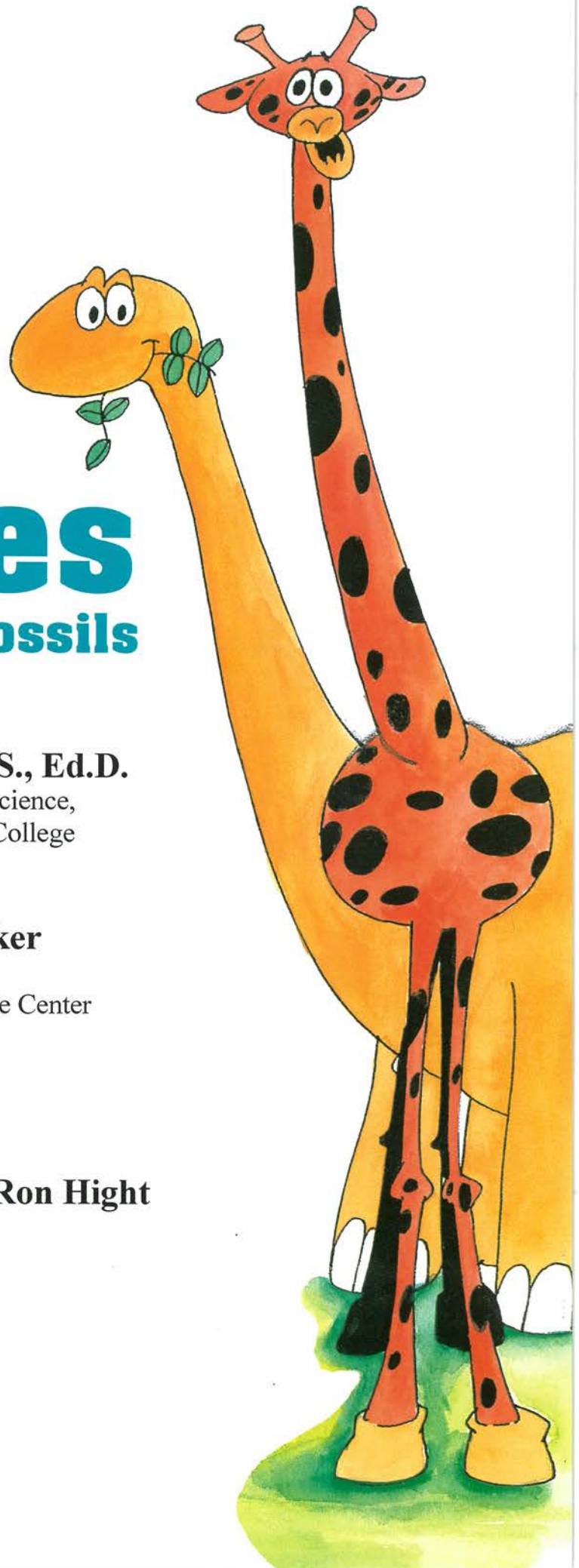
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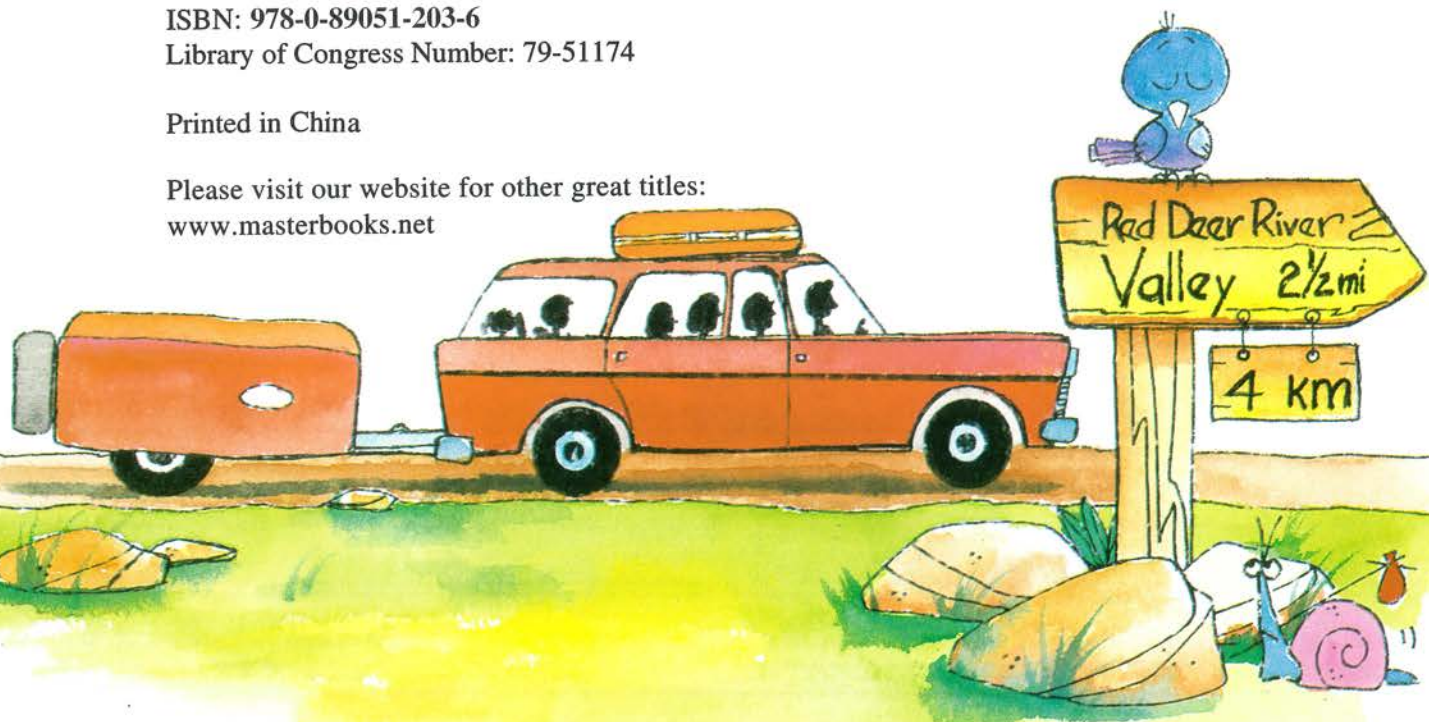
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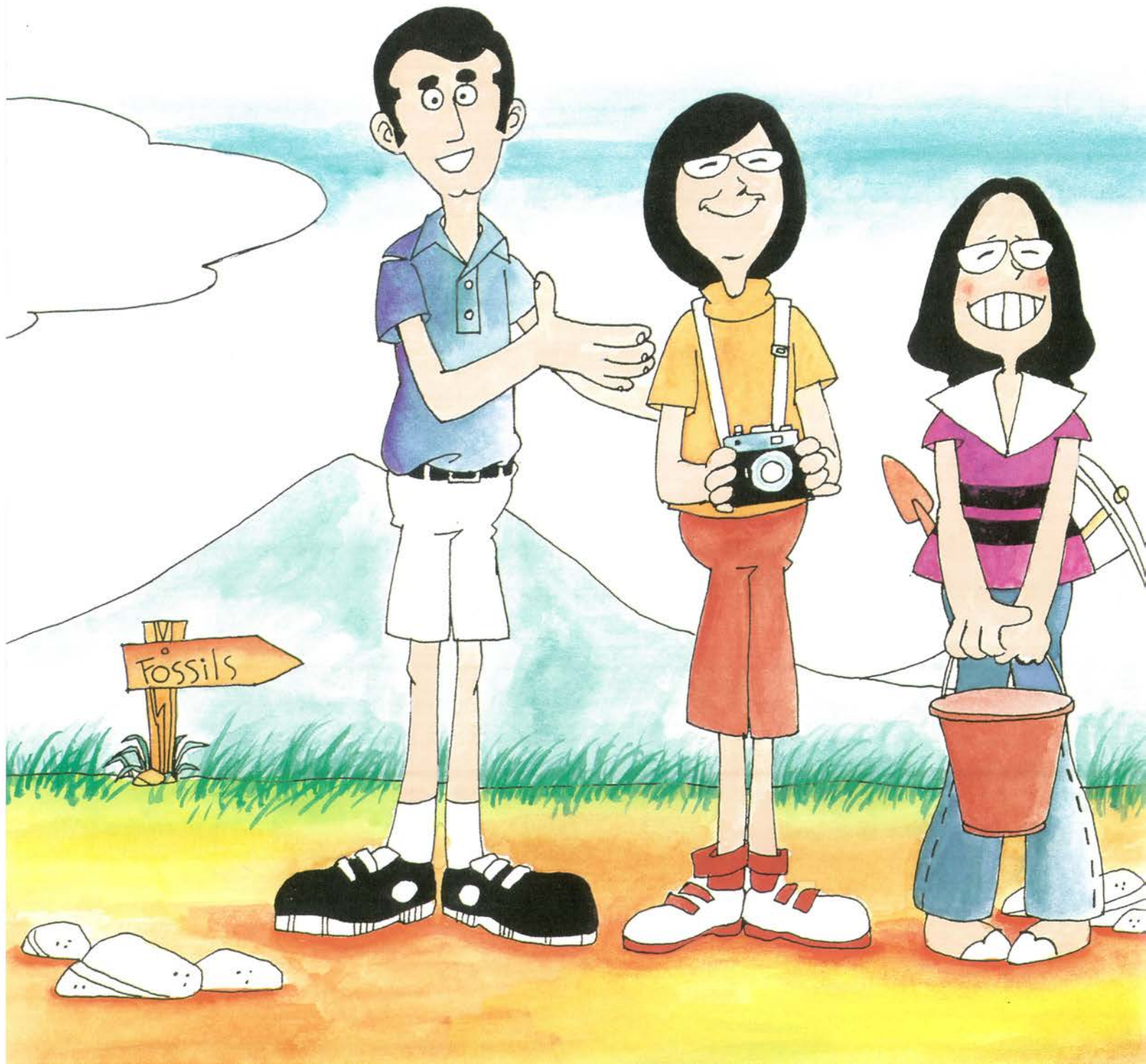
Dedication

To the Lord Jesus Christ, who blessed me with my wife, Mary,
and our four children, Dana, Debbie, David, and Diane.

Introduction

Did you ever dream that you were hunting dinosaurs? Or that you found a lost valley full of all kinds of strange creatures, such as flying lizards and giant beavers?

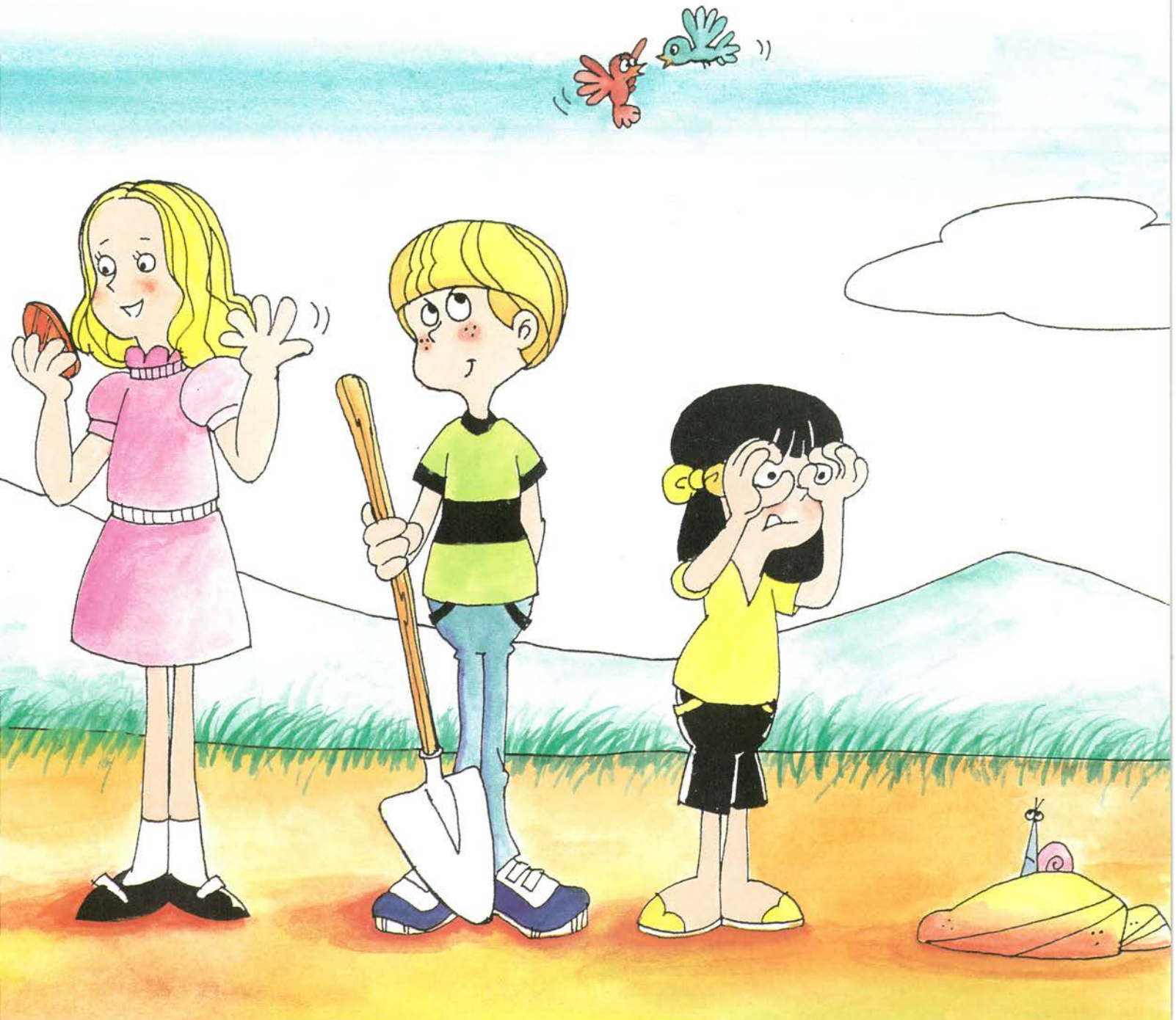
Well, you can do it for real! Dinosaurs and giant sea scorpions and all kinds of creatures from the past are still out there just waiting to be found—as fossils! Fossils are parts of plants and animals preserved in rock. All you need to find them is a sharp eye, a small pick hammer, a sack, and a little background information.



To give you a little more background, I would like to use this book to take you fossil hunting with my family and me. I am Dr. Gary Parker, a scientist with training in fossil study (paleontology: pay lee on 'tol o gee). My wife's name is Mary, and our four children are Dana, Debbie, David, and Diane.

We have found more than a ton of fossils from all over North America and parts of Australia, Europe, and Asia. We would like to share our adventures and our thoughts about fossils with you.

So crank up your imagination, and we will take you on a fossil hunting trip with us! Ready? We have just stepped out of the car where the road cuts through a hill in southern Indiana. . .



Chapter 1

What Are Fossils? How Are They Formed?

Hey, Dad, what is this?

What does it look like, Dave?

It looks like a snail.

That's what it is.

Why is it so hard, just like a rock?

Actually, Dave, it's a fossil.



A fossil?

What is a fossil?

A fossil is a plant or animal preserved in rock. A very few were trapped in ice or tar, but most were trapped in lime, mud, or sand that turned into rock.



How did it get trapped, Dad?

Probably a flood did it. That's how most fossils were started.

What about this snail in my hand, Dad?

It was probably crawling around, just minding its own business. Then all of a sudden, "whoosh," mud from a river flood or from a big underwater landslide swept up the snail. So it was buried with all the other snails and clams you see around here.

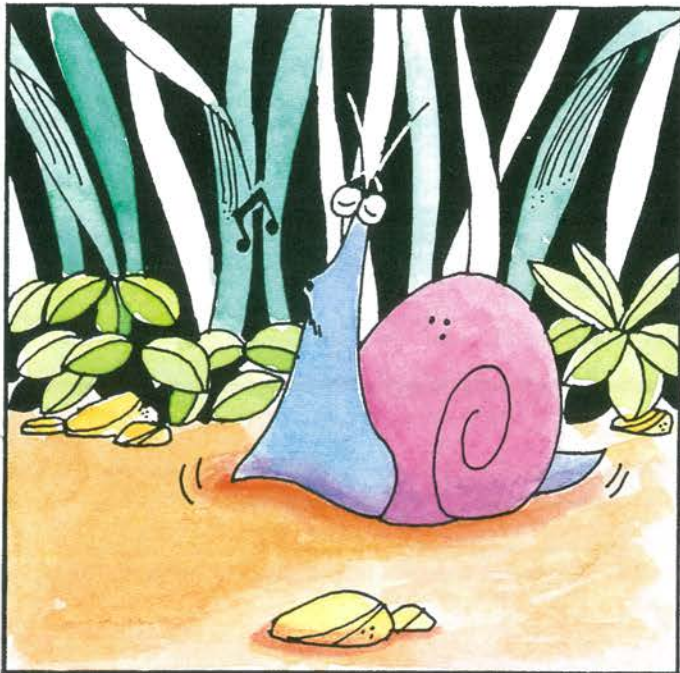
Why didn't the snail just crawl out of the mud?

Good point, Dave. That's why it takes a **big** flood to start forming fossils. Mud or sand just settling out of a lake or ocean would never stop a snail, that's for sure.

What if the snail were already dead?

If the snail died and just fell to the bottom, the waves would break it apart, or it would rot or be eaten by other animals. The buffaloes shot by the cowboys and Indians never turned into fossils. The parts that were left just rotted away on top of the ground.

I get it, Dad. It takes something like a flood to start forming a fossil. The animal gets buried too deeply to crawl out, and the heavy layer of sand or mud keeps the waves or other animals from tearing it up.



Right, Dave.

But what made the fossil snail become hard like a rock?

You have watched people mix concrete, haven't you?

Sure.

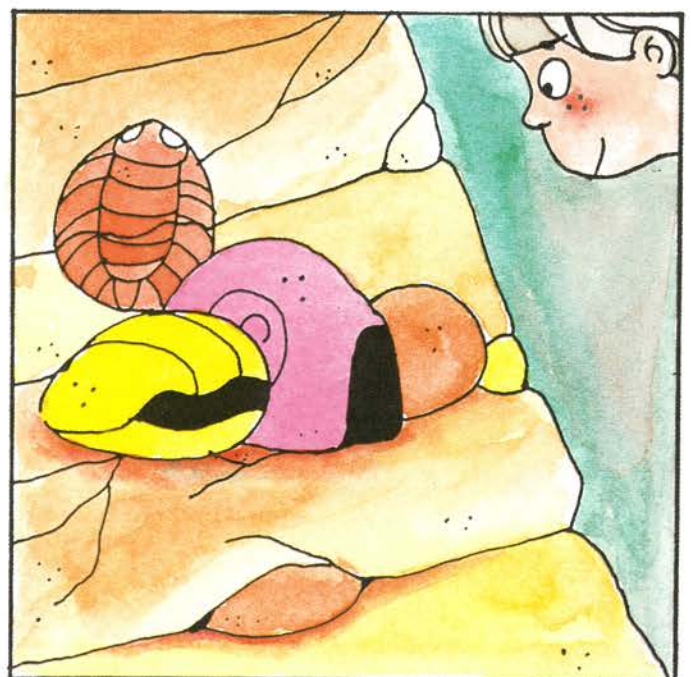
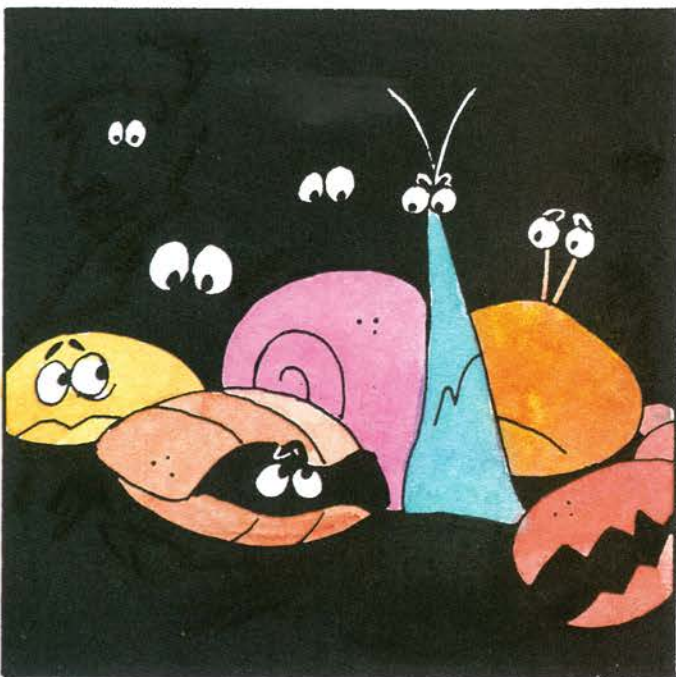
What happens?

It starts off slushy when you mix the sand and cement and water. Then it dries out and turns hard.

Almost. Actually, the concrete cures, instead of drying out. The water helps the cement minerals stick together, and they lock up the sand particles to form a hard, man-made rock.

Okay, Dad. I know about concrete. But why is this fossil snail so hard?

First, the snail was trapped in the mud. Next the minerals in the mud started to stick together, as they do in concrete, and the mud turned into rock. Then, in this case, the snail shell dissolved away as the extra water was squeezed out. What is left is that rock in your hand, which is formed in the shape of a snail.

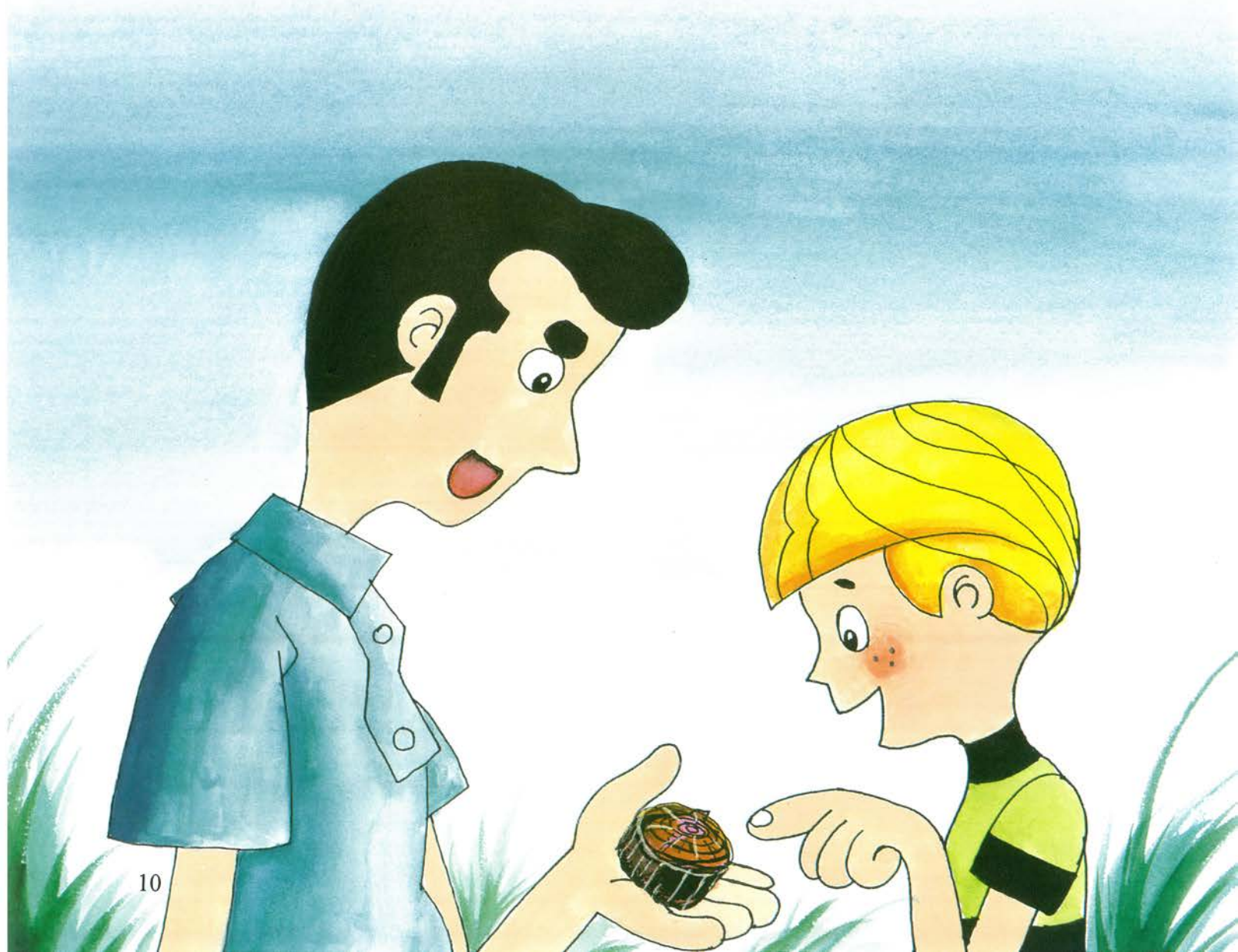


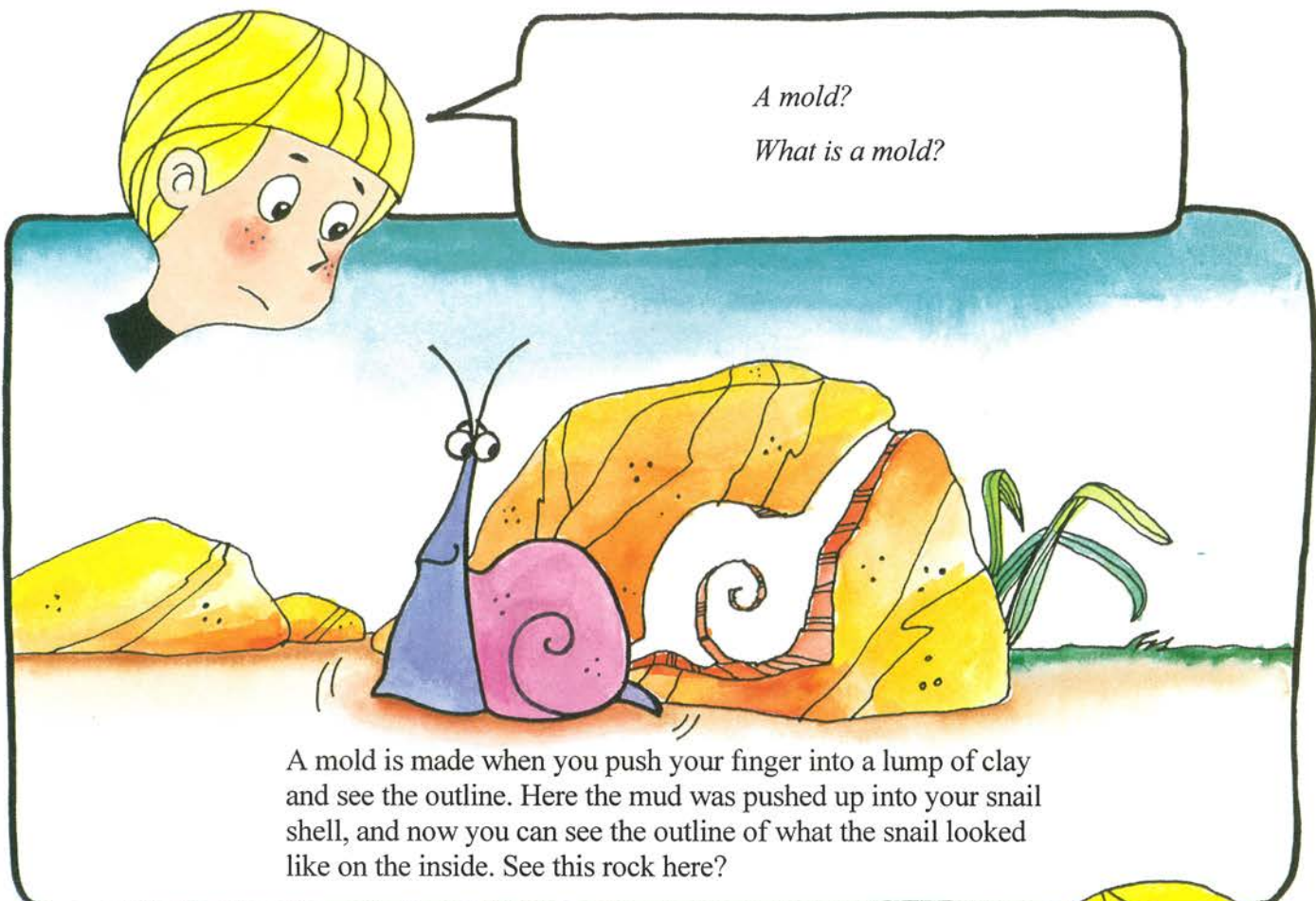
Is this a petrified snail?

Almost, but not quite. In a petrified fossil, the rock minerals fill in the exact place of some part of the plant or animal. In petrified wood, the minerals fill in all the spaces as the mud turns into rock. Look at all the details in this piece of petrified wood I have here in my pocket.


Wow! You can even see the rings!

You can see a lot on your snail, too. You can see the twists, and the hole where the animal came out. But none of the snail is really there. You have just a mold.






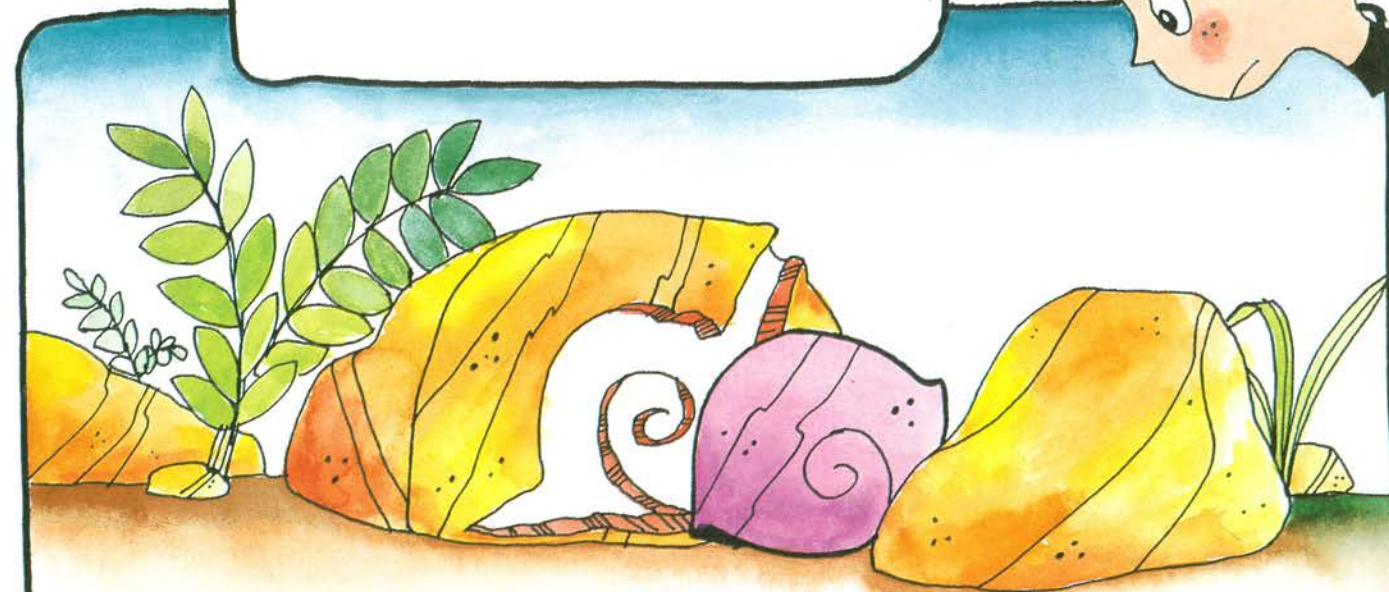
A mold?
What is a mold?



A mold is made when you push your finger into a lump of clay and see the outline. Here the mud was pushed up into your snail shell, and now you can see the outline of what the snail looked like on the inside. See this rock here?



Oh, yes. It's just a dent in the rock, but it still looks like a snail.



Right. This is an "outside mold" of the snail. When the mud hardened around the old snail shell, it took on the shape of the snail. Then the old shell dissolved away. If that hole had filled in with some other mineral, then we would have a "cast" showing the shape of the snail. Molds and casts and petrified things are all different kinds of fossils.

Here is another kind of fossil I like to keep in my pocket, Dave.
What does that look like?

It looks to me like stuff that dogs drop in the yard, Dad.

You are almost right. Instead of dog dung, though, it's a fossil
dinosaur dropping.

Ugh! Take it back!

Don't worry. It's a special fossil called a "coprolite" ('ko pro
lite). It doesn't smell, and it can't come off on your hand. It has
already turned into rock.

*How about that! So a fossil starts when living things get
trapped in mud or sand from a flood. Then when the rock
hardens, the plants and animals that were trapped turn into
fossils. Right?*

That's right, Dave.



Here's another fossil, Dad. What kind is it?

That's a piece of coral.

Coral? I thought corals lived only in the ocean.

That's right. But all these other things lived in the ocean, too. That snail you had is an ocean snail. This is an ocean clam, and this is an ocean lampshell. Over there is a piece of squid shell from the ocean. This is part of an ocean animal in the starfish group.



How did all these ocean animals get to Indiana? Indiana is in the middle part of America, a very long way from the ocean!

Well, most fossils start out as plants and animals trapped in sediment ('sed i ment). Sediment is the mud or sand that settles from flood waters. Do you know of any flood big enough to wash ocean life hundreds of miles (kilometers) to Indiana?

Noah's Flood?

Sure, why not? The Bible tells us that the Flood covered the whole earth! Stories from tribes all over the world also tell about the Flood.

Did the Flood really cover the whole earth?

It surely looks like it. Flood sediment covers over three-fourths of all the land on earth. You can even find fossils of ocean life on top of high mountains. First, all the land was covered. Then, the Bible tells us, the mountains rose up, and the valleys sank down at the end of the Flood.

Did Noah's Flood make all the fossils?

The Bible doesn't tell us for sure. But the Flood would surely help us explain much of what we see. After all, fossils start as plants and animals which have been trapped in flood sediment. Then as the land rises and dries out after the Flood, all the mud and sand would begin turning into rock. And the plants and animals trapped in the sediment would turn into fossils.

Are any fossils forming today?

Any time a plant or animal gets buried under enough mud or sand, it could start becoming a fossil—if the mud or sand had the right minerals and conditions to turn into rock. But the rock layers with fossils we are standing on cover a big part of Indiana, Ohio, and Kentucky. There is no place in the world today where fossils are forming that way! This would take something like Noah's Flood for sure!





Why did God send the Flood that killed all those plants and animals?

That's one of the saddest stories in the Bible. It started with the sin of our first parents, Adam and Eve. Their selfishness and disobedience ruined the world God had created "all very good." Soon the earth was filled with violence. All this violence and wickedness grieved God's heart. The Bible even says He was sorry He made the world.

What did God do?

God sent the great Flood to destroy evil and give the world a fresh start with Noah and his family, as well as the animals they took on the Ark.

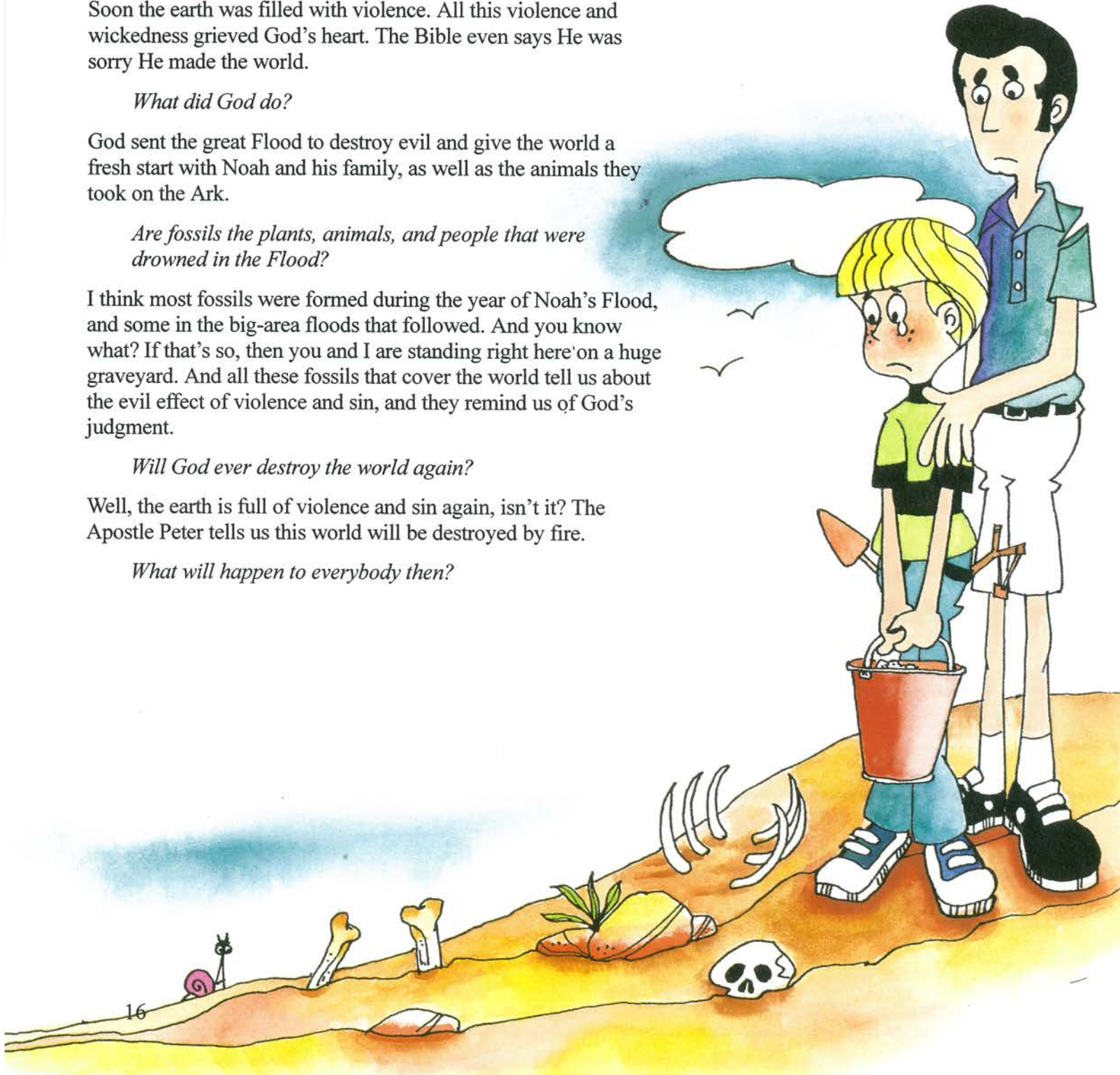
Are fossils the plants, animals, and people that were drowned in the Flood?

I think most fossils were formed during the year of Noah's Flood, and some in the big-area floods that followed. And you know what? If that's so, then you and I are standing right here on a huge graveyard. And all these fossils that cover the world tell us about the evil effect of violence and sin, and they remind us of God's judgment.

Will God ever destroy the world again?

Well, the earth is full of violence and sin again, isn't it? The Apostle Peter tells us this world will be destroyed by fire.

What will happen to everybody then?



That depends. The people who hate God will go on living in hate forever. But we can turn to God's Son, Jesus Christ, for forgiveness and new life. God has something very special for the people who are sorry for their sins and turn to Jesus.

What's that, Dad?

A new heaven and new earth, where God will live with His people, and where there will be no more sin and violence, no more pain and death. So, think of that the next time we go fossil hunting, Dave.

What do you mean?

All the fossils buried in the earth remind us how God hates sin and how powerful His judgment is.

But if God can keep His promise to punish sin, then God in Christ can save us from sin. And God will keep His promise of a wonderful new heavens and a new earth for people who love Him. Right?

Right, Dave. Fossils tell us about the same things we read in the Bible: a wonderful world created by God, ruined by man, destroyed by the Flood, and restored by Christ!

