

Ranger Rick's nature magazine

Starts a young person thinking, doing, learning, questioning . . . and it's great fun, too!!!

Kids want to get their hands on the world. They want to turn it over, look at it, discover how things work, learn what makes everything tick. Ranger Rick is *designed* for the curious, the active, the adventure-loving kid who wants to know more, do more, understand more.



FOR
KIDS
6 to 12

When you give your child the love of nature, you're really giving a wonderful head start for school work, plus the excitement and knowledge of life itself!



Sue Drafaahl



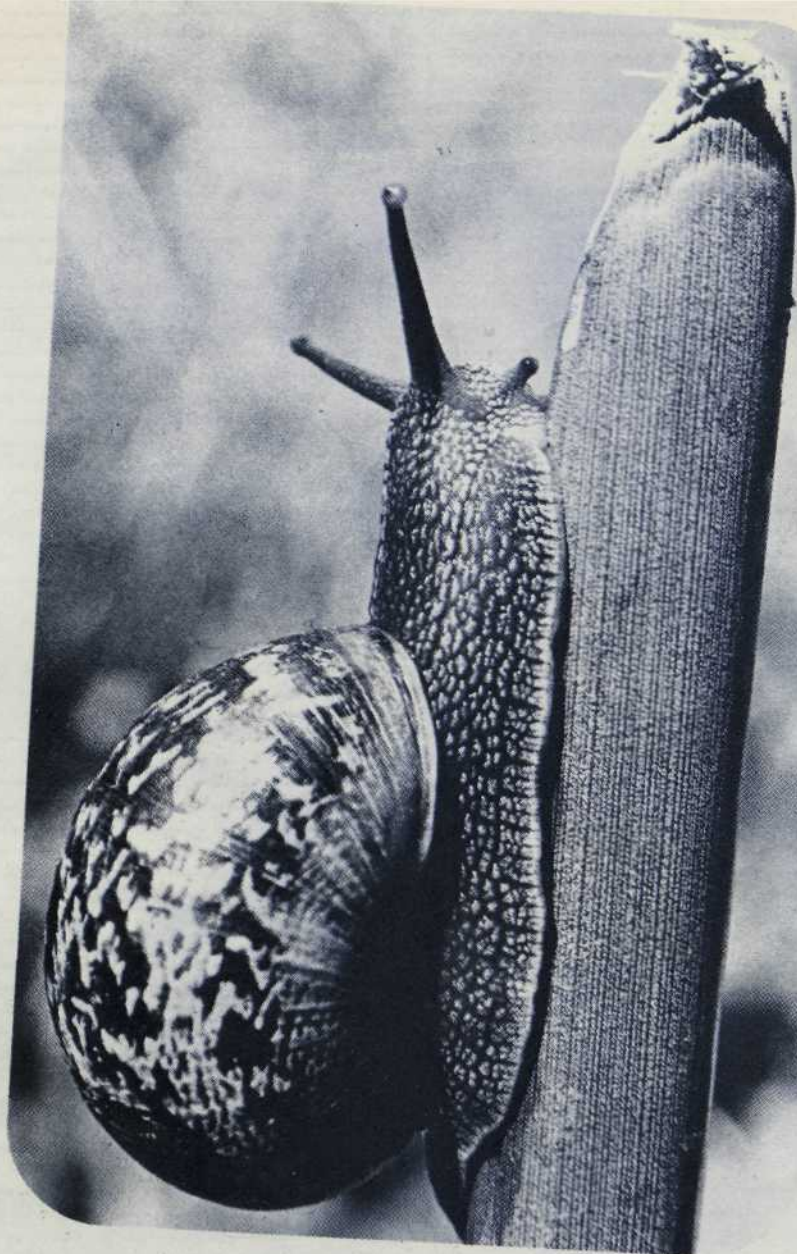
INSECT mothers are just about the same as reptiles. They are not interested in their young, except possibly to eat them. Here again, the natural instincts of the babies help them survive. Baby scorpions immediately climb up on mother's back and ride around until they are strong enough to scuttle out of mother's reach. The giant water bug mother puts her eggs on the father's back and lets him carry them around until they hatch. *The End*



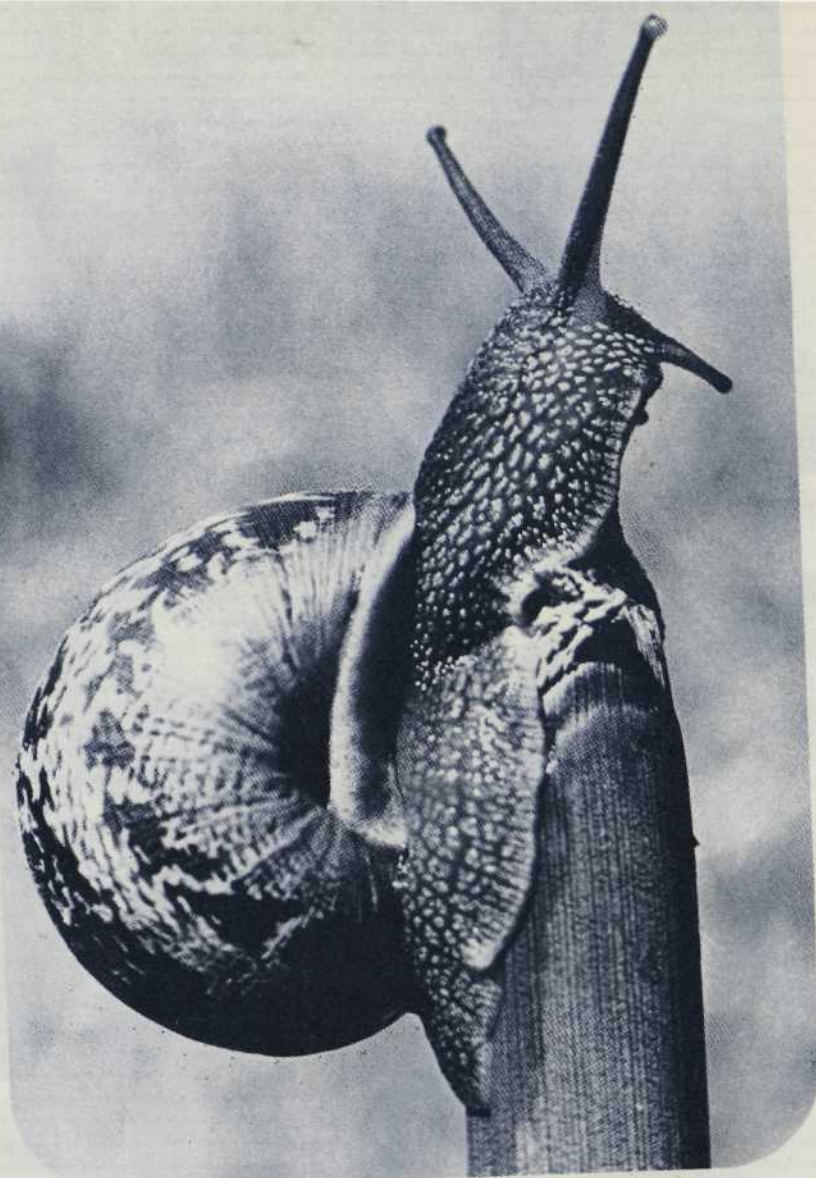
▲ Vejovis scorpions ▼ Plated lizards ▲ Giant water bugs

REPTILE mothers are quite different. Many lay their eggs and promptly go off and leave them. Some reptiles give birth to live babies and then ignore them or sometimes eat them. Reptile babies have an advantage over mammal babies. They are "grown up" the minute they are born. A newborn poisonous snake has venom and fangs and knows how to use them.

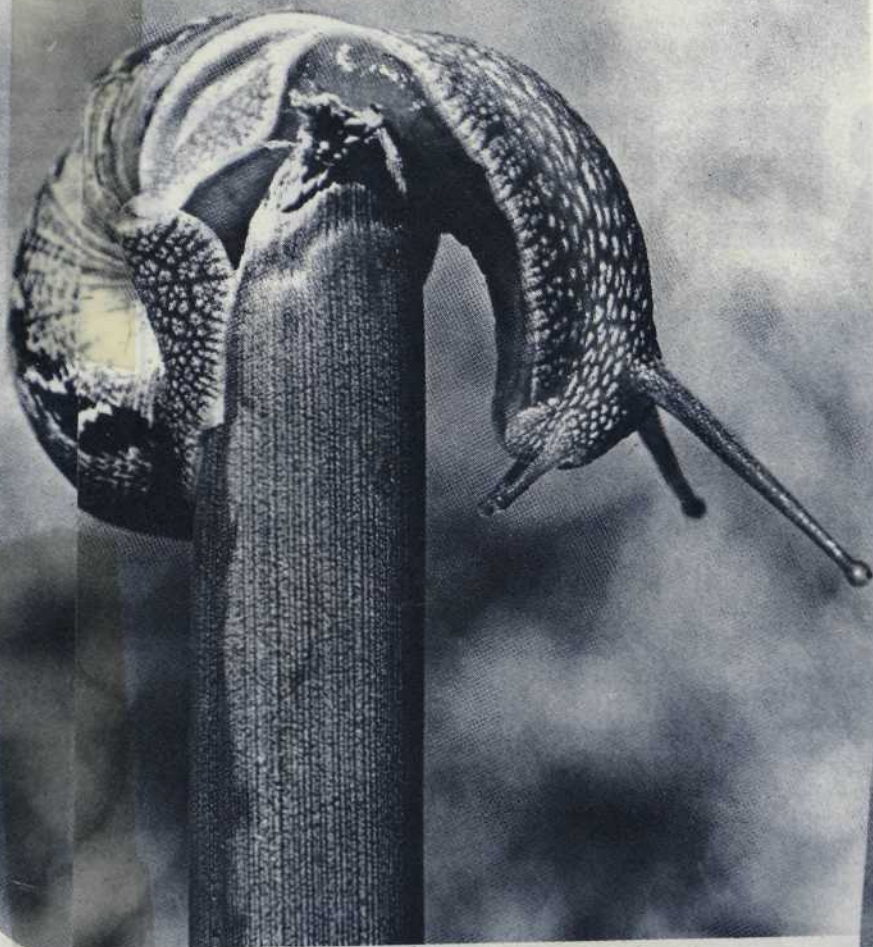




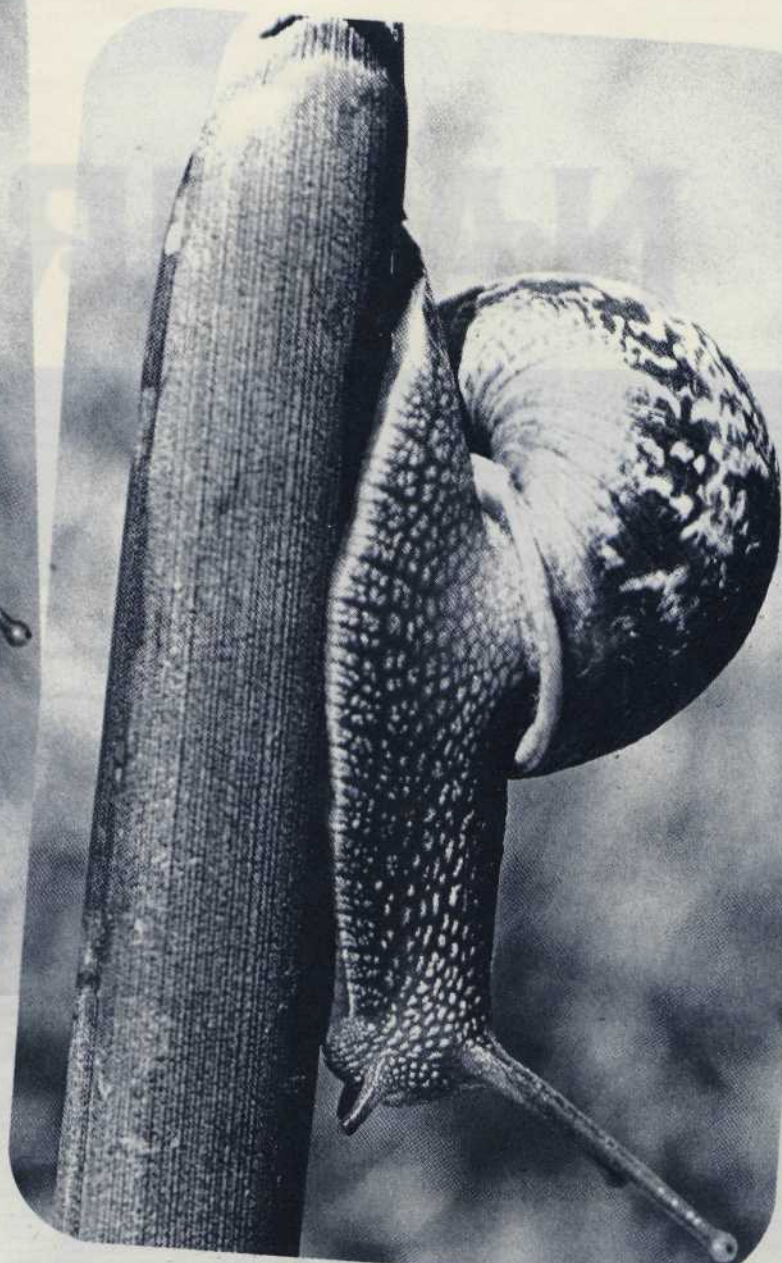
... Nothing like a straight path.



Look out! Where'd it go?
This doesn't show on the map.



Oh, here it is.
Same straight path,



but there's
something
different about it
H'm-m-m.

Photos by Jack W. Drafaht, Jr.



RANGERS, you can
see young elephant
seals like Blue at
Año Nuevo Point in
California, between
December and March.
The End

**A starfish is not a fish!
It is another kind of animal
that lives in the sea.**

**A tough skin covers the starfish.
It may be smooth or prickly.
This helps to protect the starfish.**

**A starfish moves very slowly.
It creeps and crawls over rocks
looking for a clam to eat or a place to hide.**



Sometimes a starfish meets another starfish!

The lobster is very unfriendly to other lobsters. It spends the day on the ocean floor under rocks, in seaweed or in burrows with its feelers out. The claws are always ready to grab prey or fight enemies, such as codfish, sharks, skates – and other lobsters. At night it walks the floor eating live and dead fish, crabs, clams, starfish, seaweed – and other lobsters.

The lobster is one of the toughest, meanest-tempered animals on earth. But the slightest bit of pollution – oil or pesticide – will kill it quickly.

The largest American lobster ever caught weighed over 40 pounds (18 kg) and may have been 50 years old! But most never live as long as that. Find out why on the next page.

The spiny lobster is the southern and western cousin of the American lobster. How does it defend itself without claws? It uses its hard, spiny antennae as swords!

Photos by Runk/Schoenberger from Grant Heilman (30), Jack Dratahl



Saucers of the Sea



Photo by Jack Drafahl



by Jane Scherer

Imagine a “flying saucer” moving through the sea—pale pink or blue or glowing white. Trailing behind you’d see a tangle of stringlike tentacles (TEN-ta-cals) and, hidden in among them, a mouth.

What a strange creature! It’s a jellyfish!

Jellyfish are not fish at all. They have no skeletons as fish do. Their bodies are made up of a firm jelly, sandwiched between two layers of living cells. You may have to look closely to see one because it may be transparent—you might even be able to look right through it! While fish have brains, hearts and many other organs, jellyfish are not much more than swimming stomachs.

These “saucers” glide through the sea by opening and closing like an umbrella, forcing water out from under them. When they stop opening and closing, they gently sink. Mostly they drift with the winds,

Please turn the page

Pacific Grove, California,
may be the only town in the world
that celebrates every year
with a . . .

Butterfly Parade





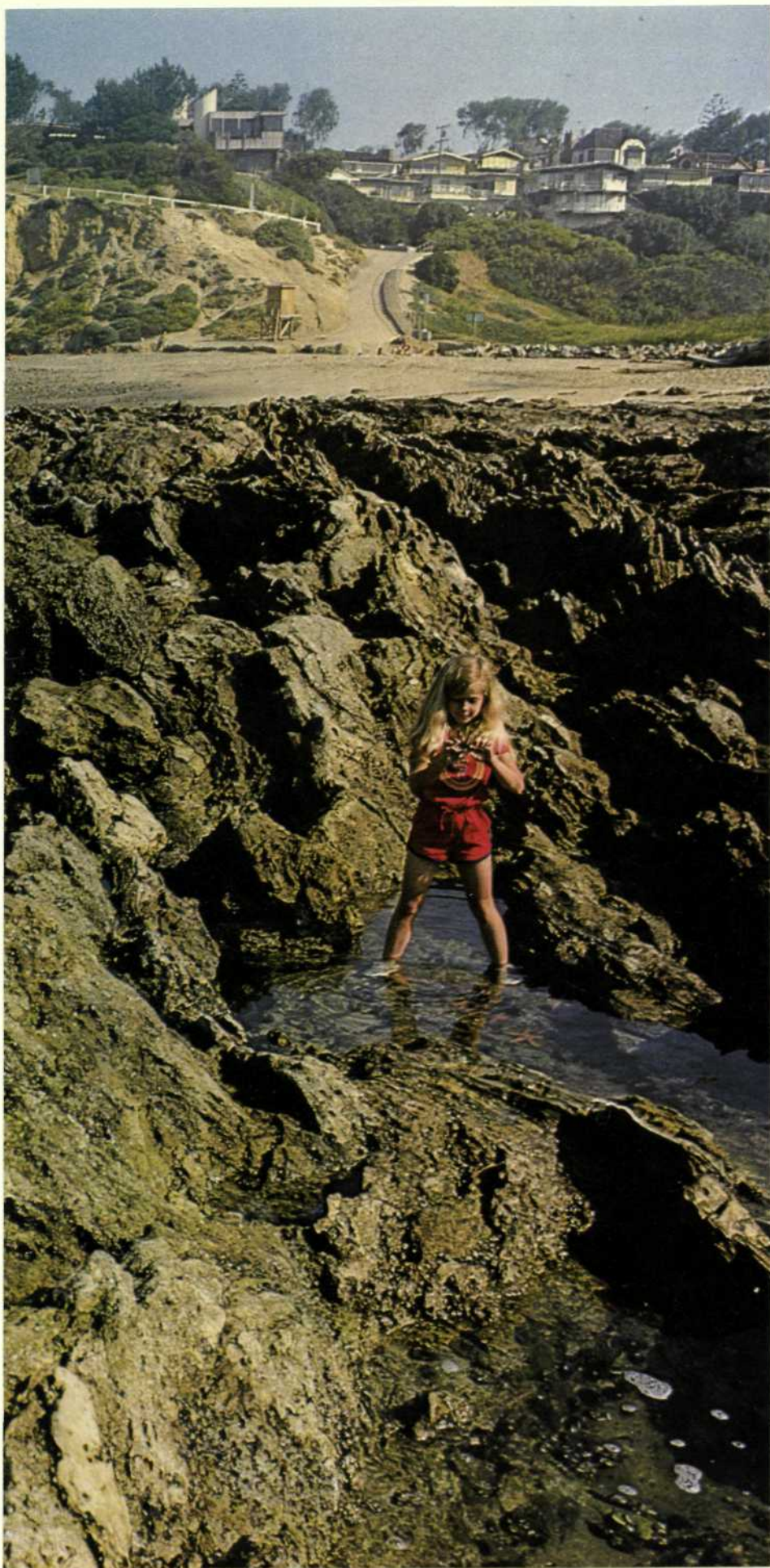
Photos by Tom Myers (Parade); Jack Drafahl, Jr. (44T, 47B); Dr. E. R. Degginger (45B, 46B)

Adult

The people of Pacific Grove like their butterflies so much that they call their city "Butterfly Town, U.S.A." They protect their winter visitors with a special law. There is a \$500.00 fine for anyone caught "molesting the butterflies." *The End*







THE BEACH is always a wonderful place but I like it here best when the day's just begun, when I'm still half asleep and in some funny way more wide awake than at noon. I go sloshing along with my friends and my dog, now and then picking up seaweed and shells. We seem to have the beach to ourselves, except for the ghost crabs and snails, a sandpiper and a few gulls. The sun's climbing slowly over the line where the sea meets the sky. It makes an orangey glow all around. Its path of light follows us, follows us, as if the sun's reaching out, saying, "Hey! I see that *you're* up too!" The waves offshore rumble and break, but softly, like sound-asleep snores. Little waves slap at our feet and I think the sea's whispering, *Shhh! Shhhhh! Shhhh!* In this earliest part of the day, we're looking and listening in a half-dreaming way. Even my dog stays close by, loping along, sniffing. Later, after our breakfast, when the whole world's awake, then we'll play. —*Danny*

THE ROCKY COAST is what I like most. That's where I climb and explore every day.

Please turn the page

SECRETS of the

by Jack and Sue Drafaht

Jenny ran ahead to the shore, where the Pacific Ocean crashed on the rocks. She couldn't wait to get to the secret hiding places of her favorite creatures — the strange and mysterious animals that live in *tidepools*.

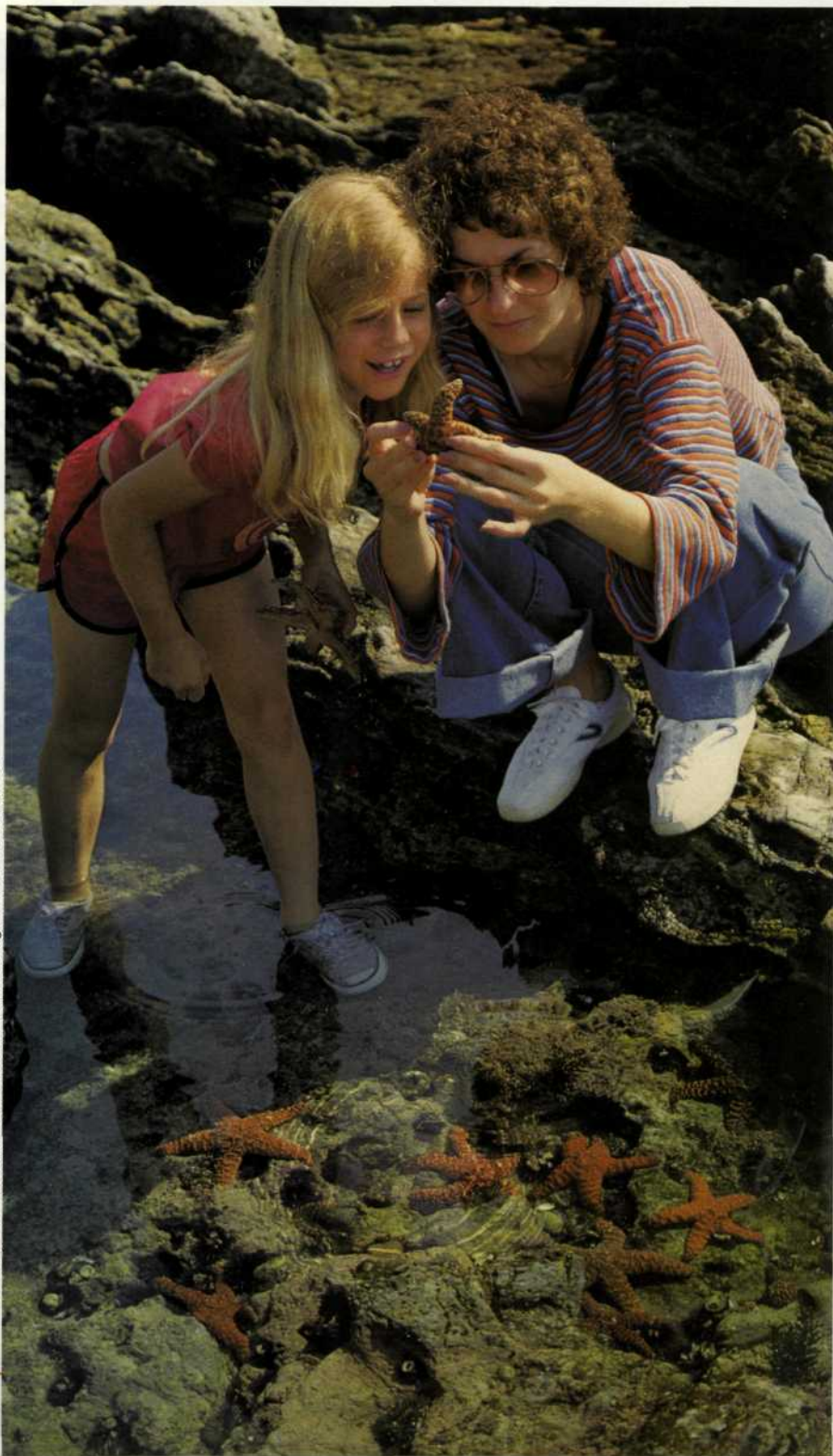
As the waves moved away from the shore at low tide, these pools of water were left behind among the rocks. Jenny would search the tidepools to find as many animals as she could. But the animals weren't really playing hide-and-seek (not with people, anyway). In fact, the shallow water in the tidepools made it easier to see the colorful plants and animals that lived there.

"Look, Mom — a starfish!" Jenny cried. Her mother was stepping slowly and carefully on the rocks behind her.

"Phew!" said Mrs. Beckman. "It's a good thing we wore our sneakers. These barnacles are sharp!" she exclaimed.

"Look down there," Jenny pointed. "See the starfish? Will it hurt me if I pick it up?" she asked.

"No, it won't hurt you," said Jenny's mother. "Just be careful that you don't hurt it. On the underside of each arm, a starfish — or sea star — has hundreds of tiny tubelike 'feet' with suckers," Mrs. Beckman explained. "The suckers help it



Photos by Sue Drafaht; Jack Drafaht; Tom McHugh/Photo Researchers

STARS

hold onto the rocks. Pick it up gently, so you won't rip it off the rock," she said.

Jenny reached down and slowly picked up the orange starfish.

"How come you call it a *sea star*, Mom?" Jenny asked. "Why don't you call it a *starfish*?"

"Well, Jenny, many starfish are shaped like stars and they live in the sea, so some people call them sea stars," Mrs. Beckman said.

"Starfish — or sea stars — belong to a group of sea animals called *echinoderms* (ee-KY-nuh-derms)," she added. "Sea urchins are also part of that group of animals. They're not fish either."

"Do you think we'll find a sea urchin today, Mom?" Jenny asked. "We found a really pretty purple one last time."

"Sure," said Mrs. Beckman. "Want to put that starfish back first?" she asked.

"In a minute," replied Jenny. "Why can't I find the head?" she asked. "Doesn't it have any eyes? How does it see?"

Jenny's mother gently took the starfish from her daughter. Then she pointed out the eyespots at the end of each arm. "There are its eyes," she said, "but it can see only light and dark — not objects. And a starfish's 'brain' is in the center of its body, so it doesn't really need a head."



"It still needs a head so it can eat," Jenny insisted.

Mrs. Beckman turned the starfish over and pointed to its center. "The mouth is at the center too," she explained. "It's hard for a starfish to get food into its body. So it pushes its stomach out through its mouth. Then the starfish surrounds its prey with its stomach and digests it outside its body."

"Pretty weird," said Jenny. She took the starfish from her mother and set it back in the tidepool. Then she held up a bigger one.

"Look at *this* one!" Jenny exclaimed. "I bet this is the biggest starfish in the whole Pacific Ocean!"

Please turn the page

Tiny tube-shaped "feet" with suckers ▲ help a starfish hold onto rocks. A starfish pushes its stomach out through its mouth to take in food ▼.





Photos by Jack Drafa

A starfish that has lost an arm or two can grow them back — slowly ▲ . These two starfish can “see” each other only with their eyespots, which are at the end of each arm ▼ .

“Not really,” said Mrs. Beckman with a smile. “Some are two or three feet (60 to 90 cm) across. People call them *sunflower starfish*. They have so many arms that they look like a sunflower.”

“How many arms?” Jenny wanted to know.

“About 20,” said her mother.

“Wow!” said Jenny. “When can we see one of those?”

“Well, they usually live in deeper water,” Mrs. Beckman explained, “not in a small tidepool like this. But if we get lucky, we may see a sunflower starfish on the shore at low tide sometime.”

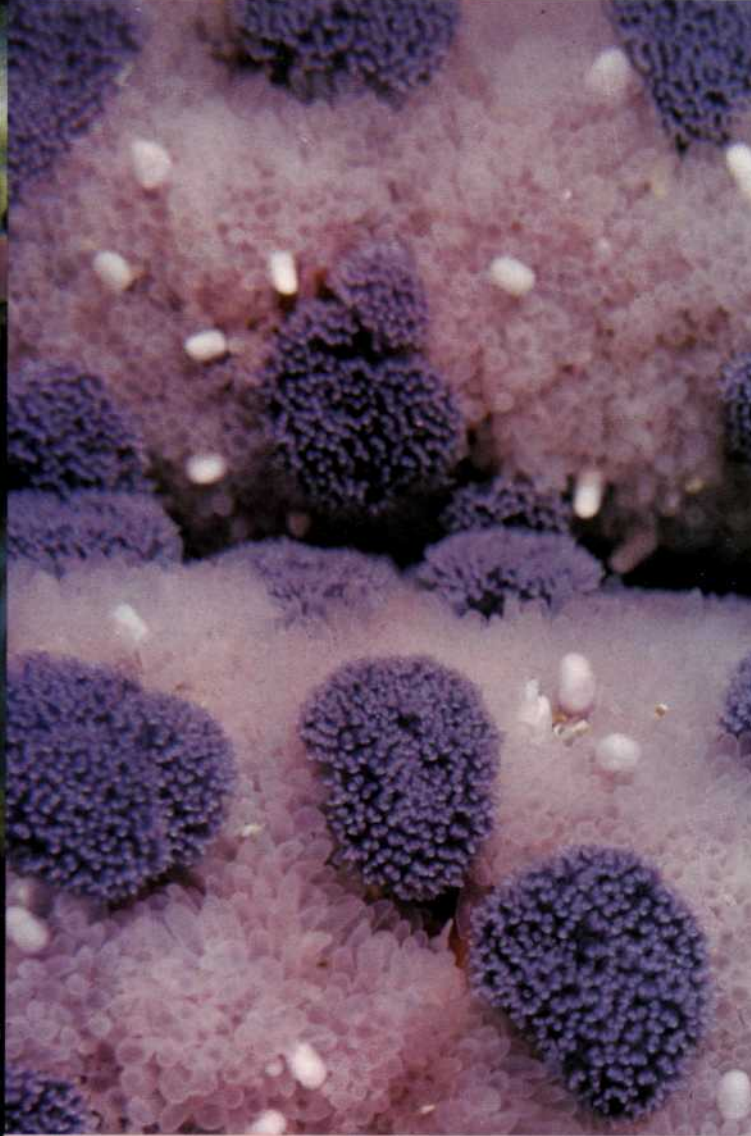
Jenny pointed to the first starfish she had put back. It was slowly moving away from her. “Where’s it going?” she asked.

“It’s probably looking for food or maybe a better hiding place. We saw it and picked it up, so a bird could come along and do the same thing. But a bird wouldn’t put it back,” said Mrs. Beckman.

“You mean it would eat it?” asked Jenny.

Photos 45, 46, 47 by Dr. E. R. Degginger, Jack Drafa, Douglas Faulkner, Keith Gillett, Zig Leszczynski/Animals, Animals, Heather Angel





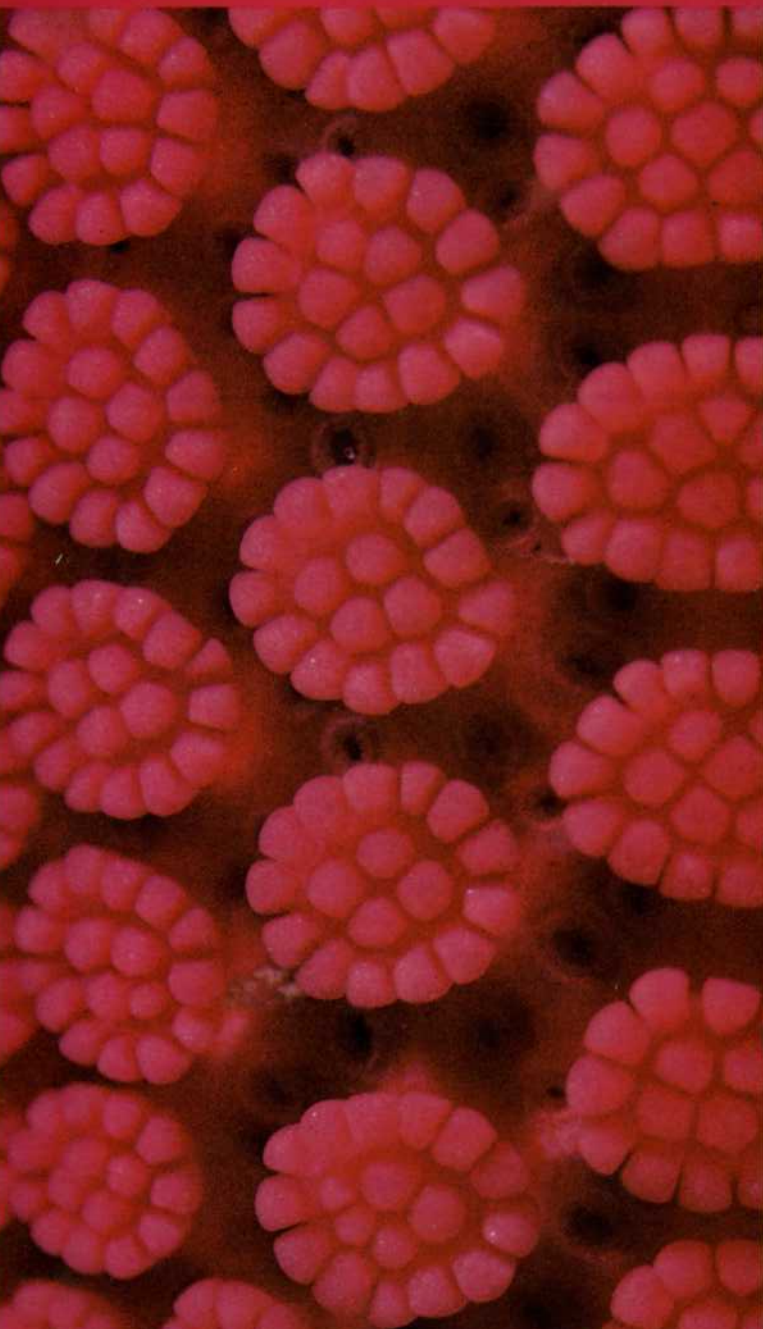
Clues

1. They live in the oceans.
2. Their scientific name, *echinoderms*, comes from two Greek words meaning hedgehog and skin.
3. They turn their stomachs inside out to eat shellfish.
4. Tiny sucking "feet" help them move.
5. Most of them have five "arms."
6. If they lose an "arm," another one grows in its place.

Have you guessed their name? Turn to page 39 for the answer.

These are close-up photos
of the skins of living animals
that have the same name!

Guess What?



“Could be,” her mother said. “See this arm that’s shorter than all the rest? This starfish may have been attacked by a bird or some animal offshore, like a sea otter,” she said, “or maybe it got hurt in a storm. After it lost its arm,” she went on, “it started to grow a new one. But the new arm isn’t as long as the others yet.”

“Poor starfish,” said Jenny.

“Actually it was very lucky that it got away,” said Mrs. Beckman with a smile.

“Can we take it home, Mom?” Jenny asked. “Please?”

“No,” her mother replied, “this is where it belongs. Starfish are an important part of life in the tide-pool. They eat little animals like shellfish and barnacles, and other animals eat them,” Mrs. Beckman explained. “Besides,” she added, “if everyone took home starfish there wouldn’t be any left for other people to see.”

“OK, Mom,” said Jenny as she set the starfish back in the tidepool with a sigh.

“We’ll come back to these tide-pools next week,” said Mrs. Beckman. “I’ll check the tide tables so we’ll know when these rocks will be uncovered.”

Jenny and her mother started back toward the car.

Jenny hopped carefully from one wet rock to the next. “Too bad we don’t have suckers on our feet the way a starfish does.”

The End



STARS of the SEAS

Colorful sea stars “sparkle” in every ocean of the world.



SEA STAMPS

Story and photos by Sue and Jack Drafahl

How would you like to look at strange and beautiful undersea animals whenever you felt like it? It's fun and easy to do if you collect colorful pictures of these underwater creatures on postage stamps.

Many countries print pictures of under-

water creatures on their stamps. When used on mail, the stamps help people learn about the animals that live underwater. Some countries also have stamps that show animals found along the coast of that region. Others show underwater animals found in other parts of the world.



Blood sea bass



Lionfish or turkeyfish



These colorful fish are much admired for their striking beauty. They may be a very familiar sight in the countries where the stamps were printed. Some of the fish that "swim" onto stamps have special meaning for the people who use them.

Please turn the page

Spotted rock crab



Crabs, lobsters and whales can be important for food or for income. But if people hunt and fish for too many of the animals, they may end up with none at all. Here they are, reminding us to conserve all forms of wildlife.

Spiny lobster





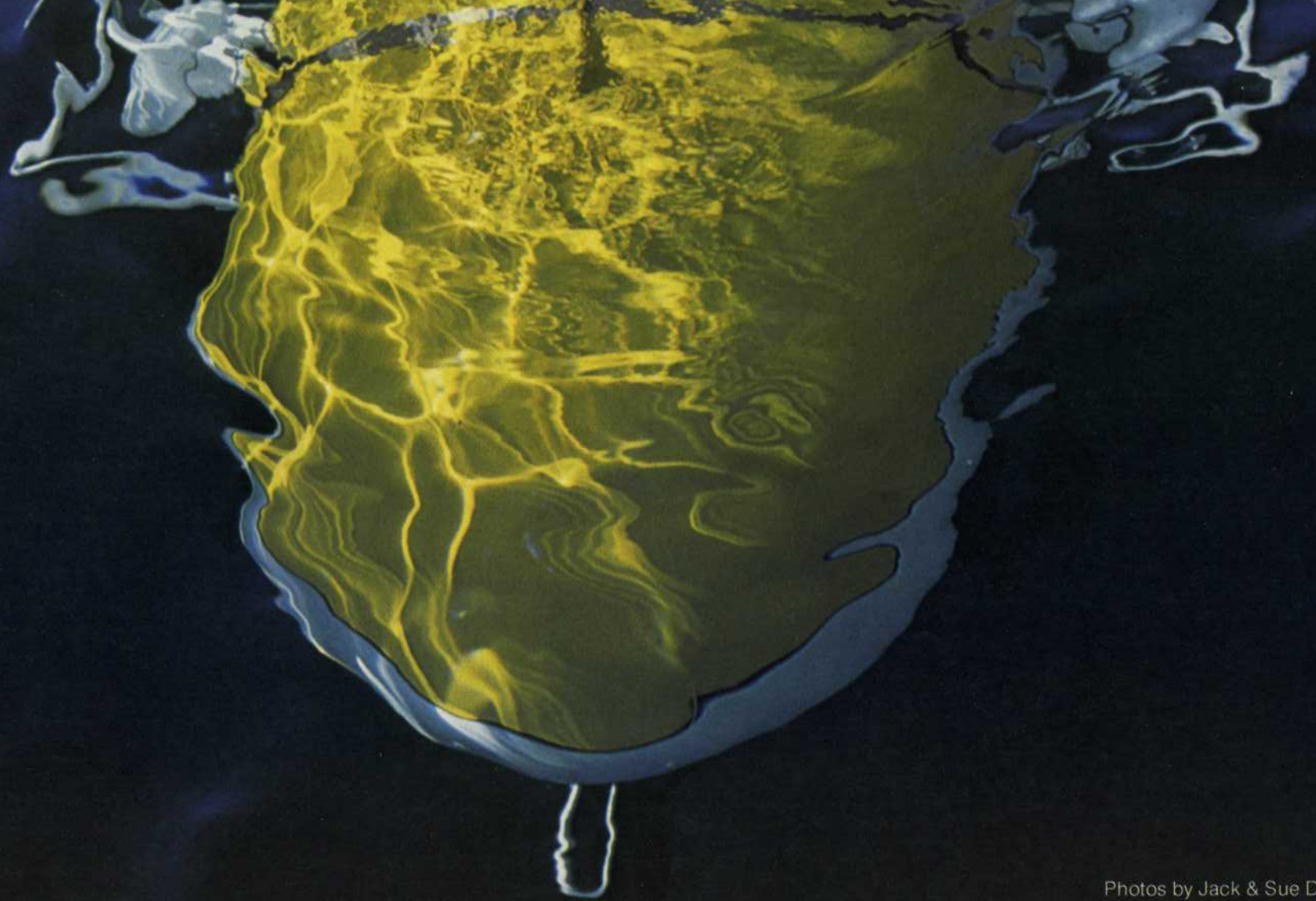
As told to Jack and Sue Drafahl
by Denise Brooks, Age 9

Imagine being able to find out what it looks like underneath the ocean without even getting your feet wet! Well, that's just what I did. Recently my dad bought a one-man submarine to use for underwater research.

One day he took me on a special trip. We explored the ocean floor in our yellow submarine! I was really excited! And you know what? When we climbed into the submarine I was a little nervous too. I sat in Dad's lap as he closed the hatch. All I could see as we started to go down were bubbles everywhere. Once we were completely underwater, the bubbles cleared.

Please turn the page





Photos by Jack & Sue Drafahl

Our Yellow Submarine

All around I could see tree-like stuff. Dad told me it was called kelp. Many animals eat kelp. Others use it as hiding places to escape larger animals.

Suddenly there was a slight bump! We were resting on the ocean floor. Dad stopped the motor. As I looked out at some curious sea creatures, they looked in at me.

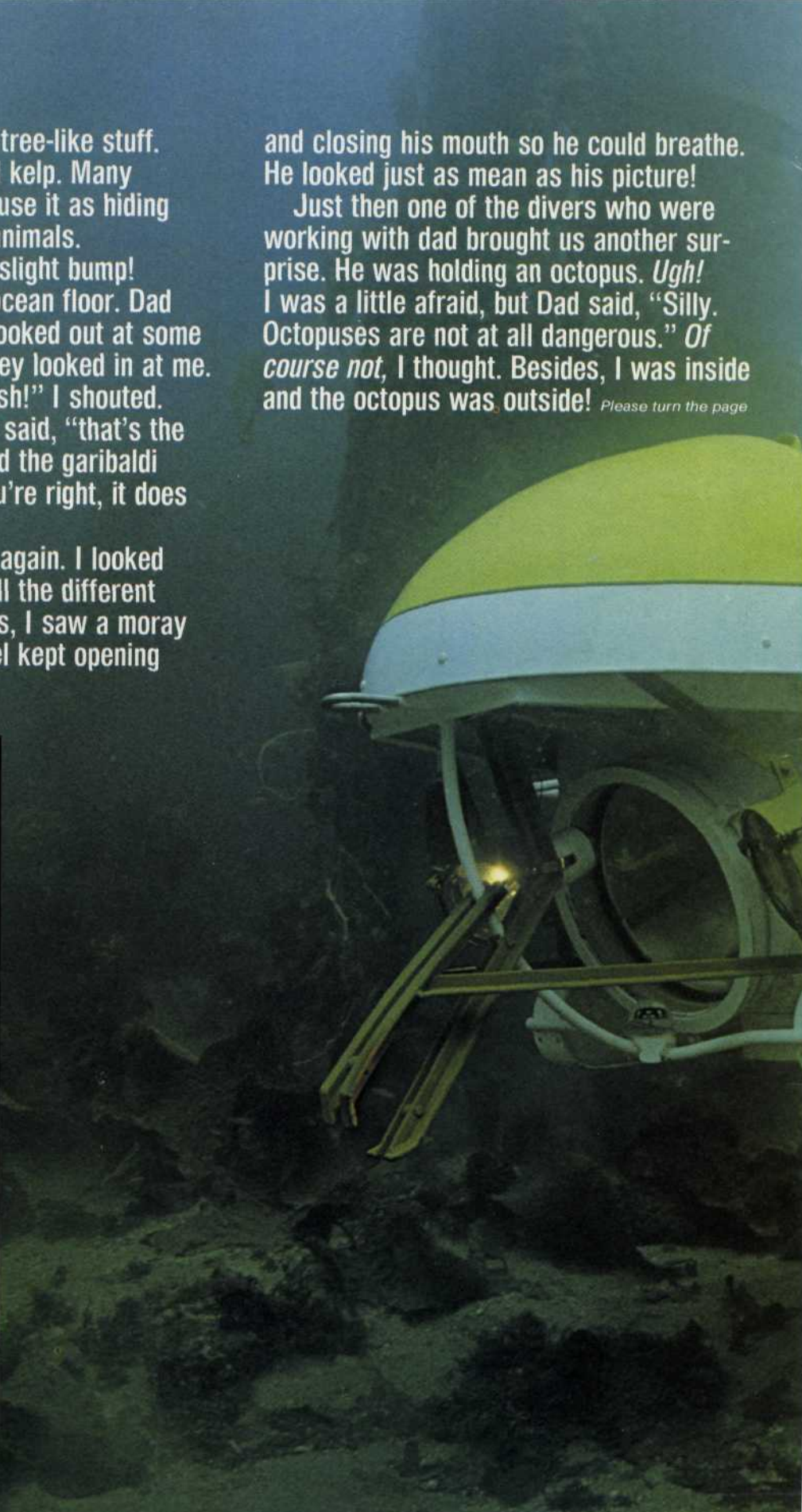
"There's a huge goldfish!" I shouted.

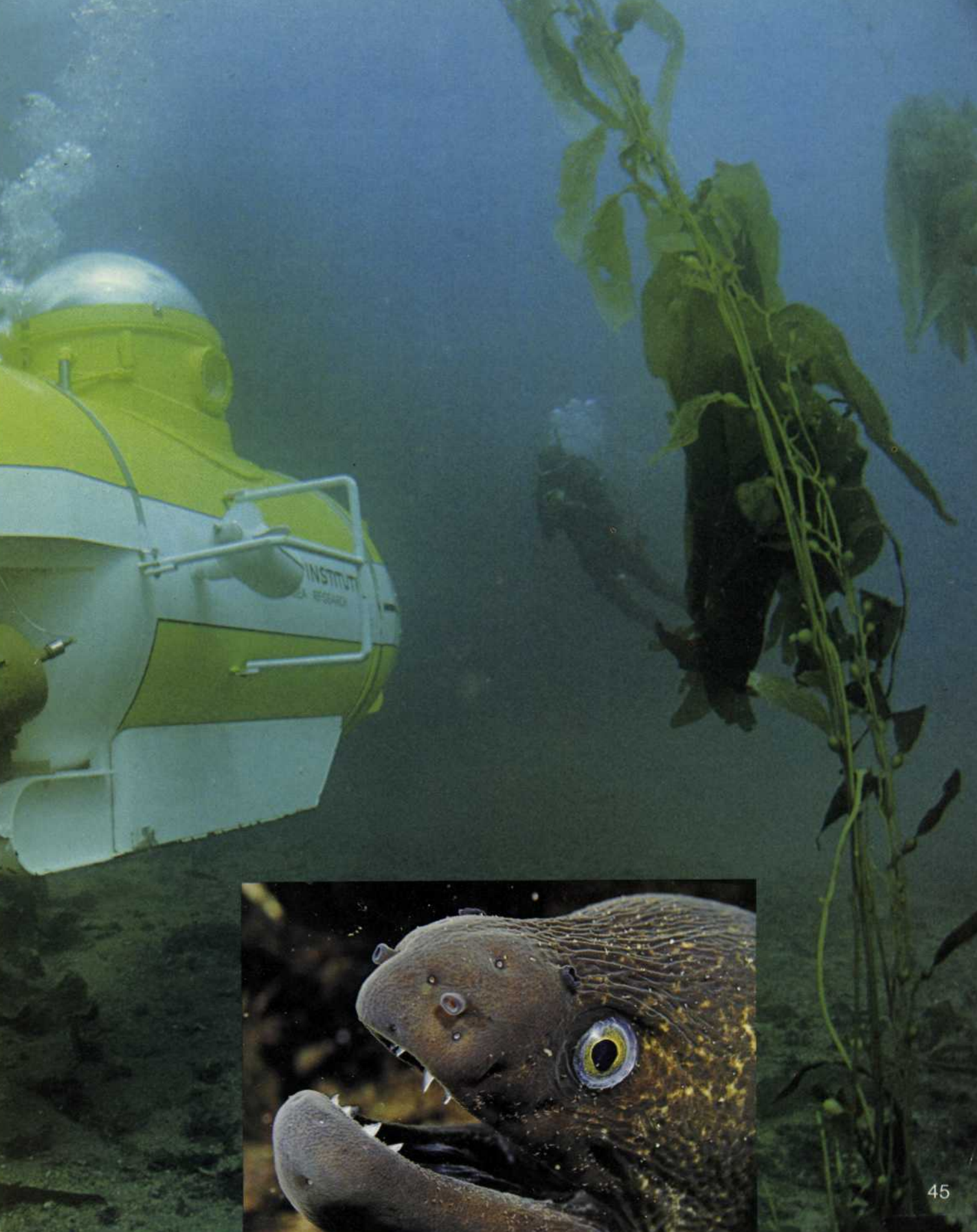
Dad laughed. "No," he said, "that's the California state fish called the garibaldi (gar-uh-BOL-dee). But you're right, it does look like a goldfish."

Dad started the motor again. I looked around carefully to see all the different animals. Near some rocks, I saw a moray eel peering at me. The eel kept opening

and closing his mouth so he could breathe. He looked just as mean as his picture!

Just then one of the divers who were working with dad brought us another surprise. He was holding an octopus. *Ugh!* I was a little afraid, but Dad said, "Silly. Octopuses are not at all dangerous." *Of course not*, I thought. Besides, I was inside and the octopus was outside! Please turn the page







After he let the octopus go, the diver swam over to some kelp. Dad told me this kind was called bull kelp. It is one of the largest plants in the ocean. The diver looked awfully small next to one of these huge underwater plants.

Suddenly another diver swam toward us holding a giant starfish! He put it on the plastic dome and it almost covered the whole window. Dad told me it was a sun star with 20 legs. *Wow!*

A little farther on I saw what I thought was an interesting plant. But Dad said it was an *animal*, called soft coral. It was a beautiful bright pink and swayed slowly in the water.





Dad said we were running low on air and should surface. I thought about the good time I'd had exploring the ocean floor. I hoped we could come back soon.

"Dad," I asked, "can we go up *full blast*?" And we did!

The End