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The Bottlenose Porpoise



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A SWIMMING MAMMAL

The porpoise, which is sometimes called a dolphin, looks like a fish but is not one. Although it lives in the water, it must breathe air. The ancestors of the porpoise lived on the land and breathed air. They were mammals, probably something like cows. Unlike fish, but like other mammals, they had a warm body temperature and made their own body heat. And like other mammals, a new infant grew in its mother's body until birth and then nursed from her milk. Some of these animals, for reasons no one is sure of, started living near the water and then in it. But can you imagine the body of a cow in the water?

Over tens of millions of years, the offspring of these animals gradually came to have a different shape. It was a shape well suited to a water environment. The porpoise, like the fish, is streamlined to glide through water quickly. No arms or legs stick out to slow it down.

The porpoise swims by moving its tail up and down. This gives it power to leap to the surface at least every five minutes for the air it needs, then dive quickly. (When a fish swims, it moves its tail from side to side.)

Most land animals that hunt for their food have eyes in front of their heads. But seeing is not too important to the porpoise, and its eyes are small and on the side. It has no sense of smell. In underwater darkness, the porpoise catches food by using sound. Porpoises' outer ears are tiny holes on the side of the head. They close with flaps as protection from water pressure. Yet sound comes in to the inner ear, carried by water, and the porpoise can tell exactly where the sound comes from.

One of the porpoise's favorite foods is mullet, a fish that jumps with a splash. On hearing a splash, the porpoise rushes in that direction. As the porpoise approaches, it moves its head from side to side and makes a fine clicking or buzzing sound. This is like a blind man tapping in front of him with his stick. By listening to the echoes of the clicks bouncing off the mullet, the porpoise can tell exactly where the fish is.

The bottlenose porpoise has long narrow jaws, almost a beak, which it uses like tongs for grabbing live food. Along the inside are about 90 small, pointed teeth, all the same size, that hold the slippery fish. The fish are swallowed whole, head first. The porpoise may catch and eat twenty pounds of fish a day. It takes a great deal of food to keep the body warm in the water and the porpoise has only a thin layer of blubber to keep the cold out and the warmth inside.

PORPOISE GROUPS

Porpoises like each other's company and live in groups, both in aquariums and in the ocean. One kind of group in the aquarium is made up of one adult male, two or three females and their young. It is called a family group. Porpoises in the ocean are much more difficult to study than porpoises in a glass tank at the aquarium, and much of what we read about ocean porpoises is guesswork. A good guess is that porpoises live in family groups in the ocean, too.

A family stays more or less together when awake, and they sleep together. There cannot be more than one male in a family without trouble. One male drives all other males away. But without a male, there is trouble, too, because females in a family fight among themselves.

Within the family group there is a regular order. The smaller members respect the larger ones by not bothering them. The male, or bull, has power over all the others. He keeps mostly to himself, except when he wants to mate with a female. The others soon learn that he will clap his jaws, or even bite, if disturbed.

The females usually stay together. Only when a female is about to give birth does she go off by herself. After the birth, the other females surround the mother and infant. One of the other females may help lift the infant to the surface

to breathe. The females also protect the mother and infant by keeping the sharks and bulls away. A bull might hurt an infant because he is interested in the mother and does not want other porpoises around.

If something frightens porpoises in the aquarium tank, such as a loud noise, they bunch together and swim hurriedly around, squealing constantly. The bull usually becomes a leader during the emergency. He now swims with the rest of the group and does not harm the young ones. A group of porpoises that behaves this way is called a school. When the danger is past, the school breaks up and the porpoises once again act like a family group.

In the ocean, where there are more porpoises than in an aquarium tank, several families may come together to form a school. One school may have as many as 500 members, or as few as five. There seems to be no single leader, but possibly each male has several females which he keeps together. A school gathers if the porpoises are frightened -- perhaps by a noise or an enemy swimming nearby. Or a very large school may gather because the area is particularly rich in fish food.

Usually porpoises swim somewhat apart. But in times of danger, the school in the ocean behaves very much like the school in the aquarium. If a shark or killer whale approaches, the school bunches together, with the youngest animals and their

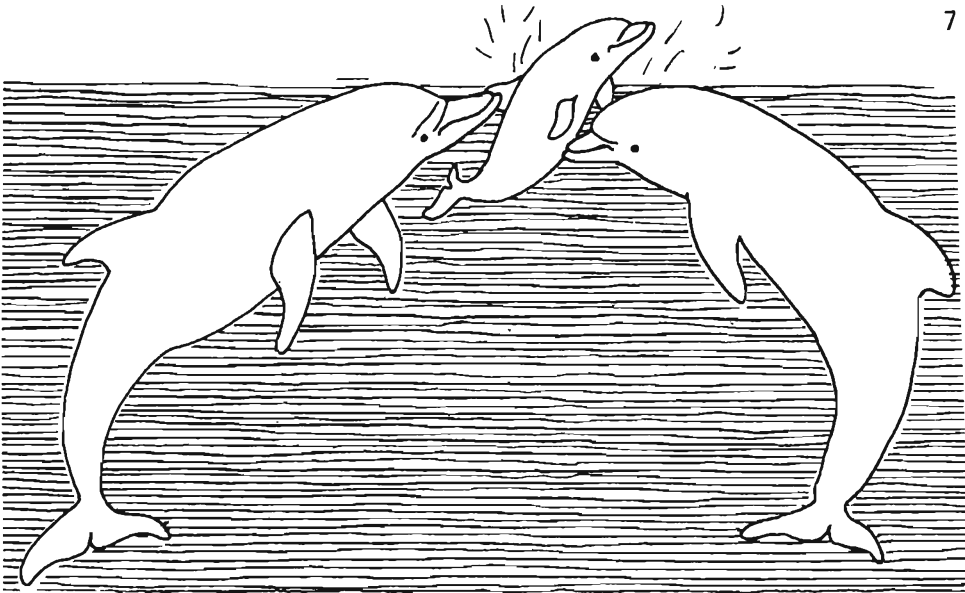
mothers in the center. Acting together, the group then attacks the enemy or flees. Possibly one of the adults has become a leader, and the behavior of this leader decided what the others do. Several porpoises can drive away a shark or kill it by ramming it in the gills with their snouts.

If a porpoise is hurt, others come to its aid. The injured animal is supported by a porpoise on each side. Usually it is the females that help the sick one to swim and raise it up to breathe. Females seem to have a very strong urge to lift things with their snout. One even killed a shark by carrying it so often to the surface that it suffocated. She let it go, and caught it again when it sank, lifting it to the surface each time.

THE LIFE CYCLE

Porpoises mate in the spring. A female mates one spring, the infant grows inside her body for nearly a year, and it is born the next spring. She mates again the third spring. Males mate every year. As far as we know, males and females can mate when they are six years old. They live to be twenty or twenty-five years old.

If a female lives to be twenty-two, she probably has eight offspring in her lifetime. She has her first infant when she is seven, and has one every other year after that. One to four of these offspring may die before they are a year old. They die from sickness, accidents, or attacks by killer whales.



The Infant

When a baby porpoise is born in a tank, and probably in the ocean, too, all the porpoises are very excited. They gather around the new mother, full of curiosity.

When the time of birth arrives, the mother strains her muscles and the infant is born, tail first. She whips around quickly and snaps the umbilical cord that still attaches the infant to her. The baby porpoise is born lively, with open eyes and a powerful, small body, one-third its mother's size. The baby goes at once to the surface to breathe, helped by the mother and her companion if necessary.

The newborn infant must rise to breathe every thirty seconds. At first it shoots its head out of water with almost a jump. Later it will learn to roll quickly at the surface, barely lifting its breathing hole out of water.

The infant is strong, but it depends entirely on its mother. Within twenty-four hours after birth, the infant starts to nurse. As the infant cannot stay underwater long, the mother's muscles squeeze a large amount of milk into the infant's mouth at once, and the meal is over quickly.

The mother does not allow the infant to stray more than about ten feet from her. It usually stays beside its mother's back fin. Often the female companion is nearby, too. But if the baby is swimming alone beside its mother, it sometimes keeps the eye away from her shut tight, as if to ignore everything in the world but her. The two keep up a constant squealing. If they are separated by other porpoises, by sharks or by fishermen, the infant stays in one place and squeals until its mother comes. If she cannot come, she calls until the infant finds her.

If the infant seems weak, the mother lifts it to the surface for air. She carries it on the front of her head or between her front flippers. Even if the baby dies, the mother often continues to lift up the body for several days.

Growing Up

The infant porpoise stays with its mother for one and a half or two years while it depends on her for food. By the time it is two months old, the infant leaves its mother at times to explore new objects. During this long time when the young

porpoise does not have to look after itself, it plays with other porpoises and learns about the world around it.

In one aquarium three young porpoises were observed playing games. In one game they stayed at each end of a rock tunnel and chased a fish back and forth. The young porpoises also copied a game played by the older ones. In this game a dead fish was held near some rocks to coax a live fish out and then snatched away at the last minute. Soon the older porpoises tired of this and ate the fish. But the young played with the fish, which they were not old enough to eat, for a long time. They took turns balancing it on their noses and throwing and catching it.

At the age of six months the young porpoise tries eating a little fish or squid. Its mother rubs its throat with her snout to help it swallow the fish. At first the infant may get sick on it, but gradually it learns to eat the solid food. Even so, it goes on drinking its mother's milk for another year.

By the time it is eighteen months the porpoise is spending most of its time with other young ones. But it returns to rest under its mother's tail until it is at least two years old. By then the female is probably ready to have a new infant and pushes the two-year-old away when it tries to nurse or to sleep next to her.

Males between one and five years old play most of the time and annoy the other porpoises in a tank. In the ocean, young males have more space for their activities and probably are not such a bother. In the tanks they sometimes try to mate with the older females, though they are not yet able to mate. Females between one and five also play, in a quieter way. They are interested in the younger porpoises and try to be close to them. The young porpoises seem to be learning and preparing for the adult porpoise world.

COMMUNICATION

Porpoises and other animals can communicate with their own kind. They can give each other information. When a dog growls or wags its tail it is giving information about how it feels. When a big male porpoise claps his jaws at a younger one who annoys him, the younger one gets the message.

People, too, communicate their feelings. If a Chinese boy yawns, or cries, or smiles, or yells, we know how he feels. A Chinese boy can also talk about how he feels, or about how he felt yesterday or would like to feel tomorrow. But an American boy who does not know Chinese would not understand. This kind of communication is, of course, language.

Porpoises make a great many clicks and squeals. Although it is possible to guess what a click or squeal means to a porpoise, no one knows for sure. How much can one porpoise communicate to another?

A few scientists are trying to find out if porpoises have a kind of language. They know that porpoises squeal a lot when they are excited or upset. But this is not necessarily language. They know porpoises can copy human speech, as parrots do, without understanding the words. This is not language either. A porpoise can also appear to understand words spoken to it. Flipper, a trained porpoise, learned to jump when his trainer said, "Jump," and he learned to throw the ring when his trainer said, "Throw the ring." But he could not think about a new message. When his trainer first said, "Jump through the ring," Flipper did not understand.

Porpoises have large brains and are quick to learn. Some scientists feel they may be intelligent enough to have a language. When a mother porpoise and her infant swim together squealing and clicking away, what is the meaning of all those sounds? No one, except a porpoise, knows for sure.