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## SOUTHERN OCEAN

The Southern Ocean surrounds the continent of Antarctica. More than half of this ocean freezes over each winter. Icebergs, which break off from the Antarctic icecap, float amongst the sea ice.

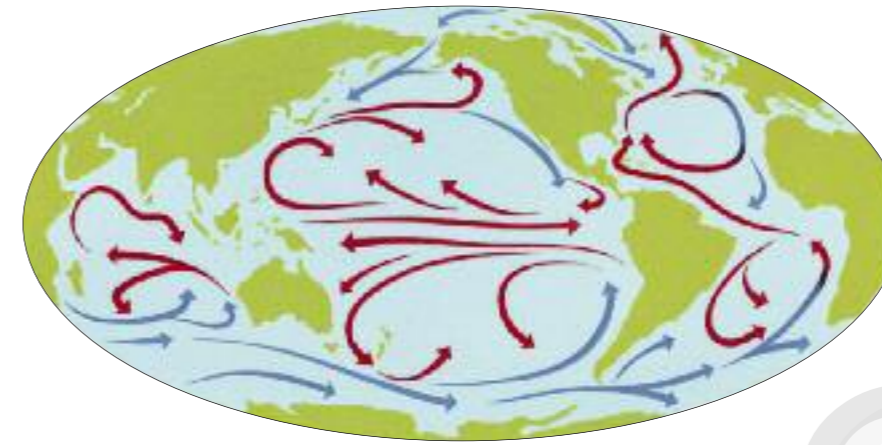
# THE OCEANS

**O**CEAN WATERS cover nearly three-quarters of our planet's surface. There are five great oceans: in order of size, the Pacific, Atlantic, Indian, Southern and Arctic Oceans.



## OCEAN CURRENTS

The ocean waters swirl around the Earth. Heated by the sun, surface waters flow from the warm tropics towards the icy polar regions. As they do so, colder currents move in to take their place. Winds that blow over these ocean currents carry their warm or cool temperatures to the nearby lands. The Gulf Stream, which flows north from the Gulf of Mexico, brings mild, wet weather to northwestern Europe.



# SURFACE WATERS

**M**ANY BIRDS catch their food from the surface waters of the ocean. The tropic-bird and booby plunge into the water itself. Air trapped in the feathers of these diving birds enables them to rise to the surface quickly and fly away with their catch. Other ocean birds, such as the albatross, snatch fish from the surface with their beak or claws.

Some creatures live half above and half below the water. The upper part of a Portuguese man-of-war is like a sac of air. It floats on the surface, dragging its tentacles below the water, trapping small fish.

RED-TAILED TROPIC-BIRD

MAGNIFICENT FRIGATEBIRD

PORTUGUESE MAN-OF-WAR

BOTTLENOSE DOLPHIN

WANDERING ALBATROSS

FLYING FISH

BROWN BOOBY

ZOOPLANKTON

# OCEAN FLYERS AND LEAPERS

Flying fish skim the surface of the water, gliding for distances of up to 100 metres. Their "wings" are actually long, taut fins. They fly to escape predators in the water, making them a target for birds.

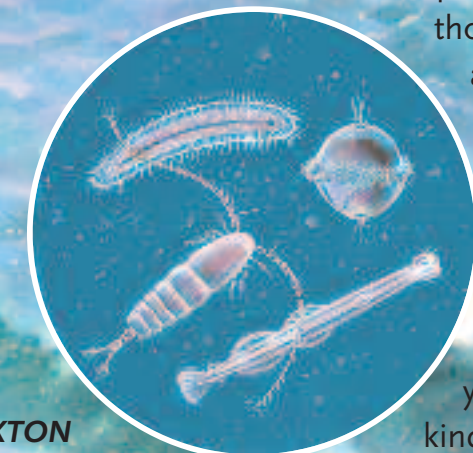
Many whales and dolphins leap out of the water. This is known as breaching. Some smaller kinds can go very high and often perform somersaults while they are in the air.

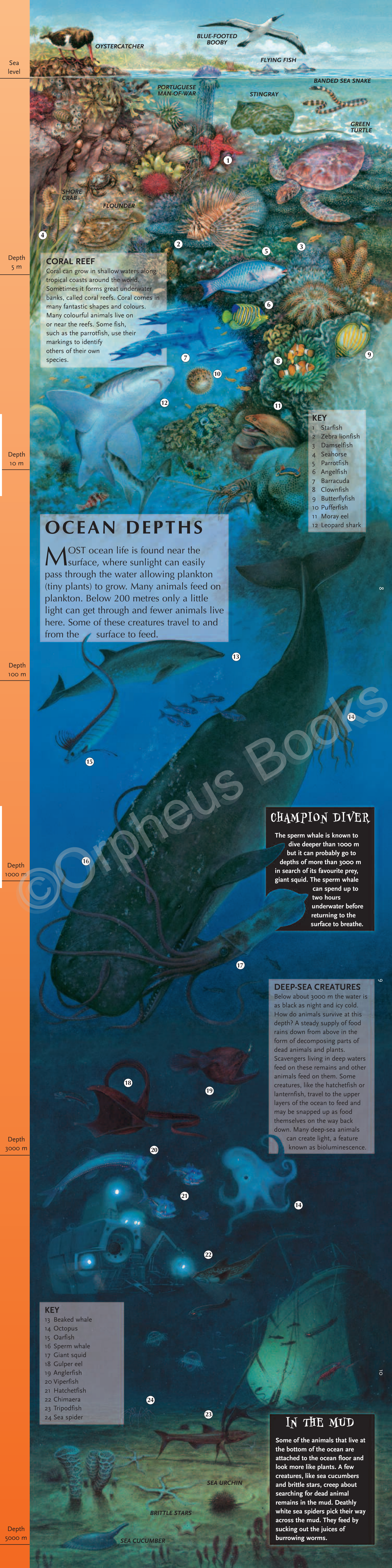
PLANKTON



## PLANKTON

The plants of the ocean are not like those on land. Called plankton, they are microscopic in size and float around in the sunlit waters. Microscopic animals, called zooplankton, feed on them. The most common kind of zooplankton are tiny shrimp-like animals called copepods. The young of fish and crabs are also kinds of zooplankton.





Sea level

Depth 5 m

Depth 10 m

Depth 100 m

Depth 1000 m

Depth 3000 m

Depth 5000 m

OYSTERCATCHER

BLUE-FOOTED BOOBY

FLYING FISH

PORTUGUESE MAN-OF-WAR

STINGRAY

BANDED SEA SNAKE

GREEN TURTLE

SHORE CRAB

FLOUNDER

**CORAL REEF**

Coral can grow in shallow waters along tropical coasts around the world. Sometimes it forms great underwater banks, called coral reefs. Coral comes in many fantastic shapes and colours. Many colourful animals live on or near the reefs. Some fish, such as the parrotfish, use their markings to identify others of their own species.

**KEY**

- 1 Starfish
- 2 Zebra lionfish
- 3 Damselfish
- 4 Seahorse
- 5 Parrotfish
- 6 Angelfish
- 7 Barracuda
- 8 Clownfish
- 9 Butterflyfish
- 10 Pufferfish
- 11 Moray eel
- 12 Leopard shark

**OCEAN DEPTHS**

**M**OST ocean life is found near the surface, where sunlight can easily pass through the water allowing plankton (tiny plants) to grow. Many animals feed on plankton. Below 200 metres only a little light can get through and fewer animals live here. Some of these creatures travel to and from the surface to feed.

**CHAMPION DIVER**

The sperm whale is known to dive deeper than 1000 m but it can probably go to depths of more than 3000 m in search of its favourite prey, giant squid. The sperm whale can spend up to two hours underwater before returning to the surface to breathe.

**DEEP-SEA CREATURES**

Below about 3000 m the water is as black as night and icy cold. How do animals survive at this depth? A steady supply of food rains down from above in the form of decomposing parts of dead animals and plants. Scavengers living in deep waters feed on these remains and other animals feed on them. Some creatures, like the hatchetfish or lanternfish, travel to the upper layers of the ocean to feed and may be snapped up as food themselves on the way back down. Many deep-sea animals can create light, a feature known as bioluminescence.

**KEY**

- 13 Beaked whale
- 14 Octopus
- 15 Oarfish
- 16 Sperm whale
- 17 Giant squid
- 18 Gulper eel
- 19 Anglerfish
- 20 Viperfish
- 21 Hatchetfish
- 22 Chimaera
- 23 Tripodfish
- 24 Sea spider

**IN THE MUD**

Some of the animals that live at the bottom of the ocean are and look more like plants. A few creatures, like sea cucumbers and brittle stars, creep about searching for dead animal remains in the mud. Deathly white sea spiders pick their way across the mud. They feed by sucking out the juices of burrowing worms.

SEA URCHIN

BRITTLE STARS

SEA CUCUMBER