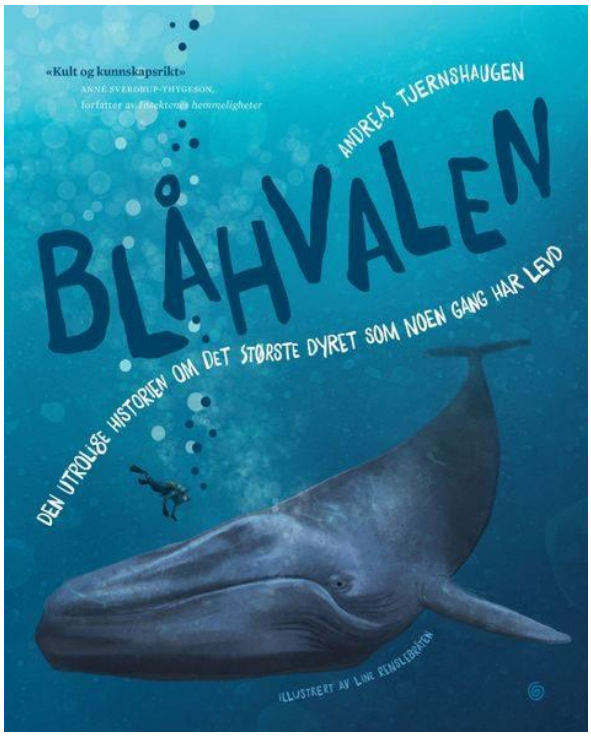
OSLO LITERARY AGENCY
**Evy Tillman**
Literary Agent
Children and Young Adult
evy@osloliteraryagency.no




# THE BLUE WHALE

## THE INCREDIBLE STORY OF THE BIGGEST ANIMAL THAT HAS EVER LIVED

by
Andreas Tjernshaugen

Illustrated by Line Renslebråten

Original title: Blåhvalen. Den utrolige historien om det største dyret som noen gang har levd
Non-fiction age 8 and up
88 pages
Format 21 cm x 26 cm
Publisher: Kagge Forlag, 2020

English excerpt
Translated from the Norwegian by Lucy Moffatt

**INDEX**

## THE GIANTS OF THE OCEAN

This book is about the world's biggest animal. And that's not all: the blue whale is the biggest animal that has *ever* lived. It is bigger than all the dinosaurs. Okay, so there were some dinosaurs that were longer if you measured them from the end of their nose to the tip of their tail, but they had very long, thin necks, and very long, thin tails. The blue whale is much fatter and much heavier.

Since we're lucky enough to be alive at the same time as the biggest animal that has ever existed, I think we ought to get to know it a bit better. That's why I've written this book. On the pages that follow, you'll meet a blue whale baby (or calf) and his mother. His mother is 27 metres long. That's as long as the very longest trucks you'll find on the roads in Europe. And she weighs so much that, if she were a truck, the police would stop it and refuse to let it drive any further because it had such a heavy load. The newborn whale is already as long as four grown humans laid top to tail.

What is it like to be so big? It's hard to say. On the one hand, blue whales have to eat and breathe and keep an eye out for danger, so in some ways their lives are like our own. But they are always vanishing into the depths of the ocean and swim a long way away from the land where nobody can see them, so there is plenty we don't know. Even so, scientists have managed to find out an awful lot about the mysterious giants of the ocean.

Come under the water and take a look.

All the best

Andreas

[P. 9]

A SEVEN-METRE LONG BABY

[P. 11]

The blue whale calf was born a few hours ago. Yet he's already seven whole metres long. He is a huge, helpless baby and if he were alone, he would starve to death. Or maybe he would end up as shark food. Luckily, his mother looks after him; she makes sure he is safe and comes up to the surface to breathe. The newborn baby looks around. Everything is new to him. The sounds. The light. The taste of the seawater.

[p. 13]

BREATHE OUT, BREATHE IN

When the blue whale mother comes up to the surface and breathes out, it sounds like a gigantic whoosh. Her spout looks like a cloud. That is because the air she blows straight up in the air is full of tiny drops of water. The cloud reaches a height of ten metres and hangs there for a moment before being swept away by the wind.

The calf surfaces beside her. He gives a little whoosh, too, and makes a smaller cloud.

Blue whales breathe through two holes right on top of their head, and in front of the breathing holes they have what looks like a nose. But it's kind of back to front. The nostrils are at the back and the rest of the nose is at the front, so the breathing holes are protected against water spray when the whale is swimming.

The breathing holes on top of the head are actually the blue whale's nostrils, but they can be sealed shut so that the blue whale won't get water in its nose when it dives. When the blue whale calf and its mother stick their heads under the water again, the breathing holes look like narrow slits.

Whales have lungs and breathe air, just like us. They're just much better than we are at holding their breath. If she needs to, the blue whale mother can stay under water for more than half an hour.

The air the whales breathe in is pretty warm. The water they are swimming in is also nice and warm. The blue whale mother has headed far south to give birth to her baby, to a place where it never gets cold. The waves are bright blue. They are far out on the open Atlantic Ocean, somewhere south of the Canary Islands, and there is no sign of land in any direction. But now and then, the wind carries along grains of sand that have been blown here from the Sahara, the biggest desert in the world.

In a few weeks' time, the blue whale mother and her calf will set off on the long journey north, towards colder seas. It is winter there now. But when summer comes, there is plenty to eat up there in the north.

[p. 13]

MILK

Just like human babies, the blue whale calf gets milk from its mother. She has two mammary glands, each of which is hidden in a slit far back on the underside of her body. That's where the baby swims to get milk.

Blue whale milk is thick, a bit like yoghurt. It contains more fat than cream. The calf drinks maybe 200 litres of mother's milk a day. Imagine 200 ordinary milk cartons and you'll get an idea of how much milk he needs.

It's hardly surprising the blue whale calf is hungry – he's meant to grow around four centimetres a day. In just over half a year, he needs to grow big enough to survive in the ocean all on his own.

[p. 16]

## FOOD FOR A GROWNUP BLUE WHALE

The blue whale calf gets bigger day by day. At the same time, his mother gets thinner and thinner. The whole of her body is covered in a thick layer of blubber, a kind of fat that lies just beneath the skin, and now her body is using up the blubber to make all the milk her baby needs.

She is hungry. So she's on the lookout for the food grownup blue whales eat: krill. What she needs is a huge shoal – hundreds of thousands of these tiny sea creatures that look a bit like shrimps.

The mother swims towards a place where she has found krill before. Her calf stays close to her. He almost seems to be riding on her back when she swims, even though he has no hands to hold on with. When she swims, his mother sets the water around her in motion and he gets carried along with it.

At last they arrive in a place where the ocean is full of krill. The krill's body is transparent and looks as if it is made of glass, and it has a few red dots. When the krill gets scared or excited, its body gets redder.

As long as there is daylight, the shoals of krill stay deep in the ocean where it is always dark. The little creatures hide from birds, fish and other animals that want to eat them. But they have a trick that helps them see each other in the dark: along its body, the krill has tiny lights. Down in the depths, they send each other blue flashes of light, and that makes it easier for them to stick together in a dense shoal. That helps them not to get eaten by a bird or a fish. If a blue whale turns up, on the other hand, gathering in a dense shoal is actually the worst thing the krill can do.

[p. 19]

## HUNTING IN THE DEPTHS

The blue whale mother draws in a breath. She turns her head downwards, lifts her tail in the air and sinks below the surface, then swims further into the depths.

When she finds the shoal of krill, she thrashes her tail hard to pick up speed. She needs to get there before the little creatures notice her and swim off.

When she reaches the shoal, she opens up her mouth as wide as she possibly can. Her huge open jaws bring her to a sudden halt and at the same time, her long body is transformed. She has long stripes on the underside of her head and upper body, from the tip of her snout all the way back to her navel. These stripes are grooves made of a softer substance that can be stretched out. This is exactly what happens when seawater and krill stream in through her wide-open mouth. The underside of her body stretches and expands like a stripy water balloon.

She shuts her mouth again. For a moment, she looks like an a tadpole that has eaten way too much.

[p. 20]

## HOW DOES THE BLUE WHALE GET RID OF ALL THAT WATER?

Hundreds of thousands of unlucky krill are trapped inside the balloon on the underside of the blue whale mother. Great for her. But not so great for them!

Along with the krill she has swallowed enough water to fill a small swimming pool and she has to get rid of it without giving the krill a chance to escape. Luckily all the

equipment she needs is already there in her mouth. Instead of teeth she has something called baleen plates (you can see what they look like on page XX), which work like a sieve.

With her mouth slightly open, the blue whale mother pushes all the seawater out through the baleen. The poor krill get stuck fast. Once she has got rid of all the water, she can finally swallow the krill, and just like that there are many thousand fewer animals in the ocean.

As the mother hunts and eats, the blue whale calf waits to get some milk, because he isn't ready to eat krill yet. His baleen is still growing.

[p. 23]

DOLPHINS

One day, the blue whale calf meets dolphins for the first time. The dolphins are playful and curious. They come over to look at the blue whales, swim around with them for a while and constantly leap over the waves.

The dolphins and the blue whales are similar in many ways. All whales and dolphins belong to a group of similar animals called *cetaceans*. But dolphins have something in their mouths that the blue whales don't: teeth. And dolphins have only one breathing hole on top of their heads.

Those cetaceans that have teeth and only one breathing hole are called *odontocetes* or toothed whales. Cetaceans that have baleen and two breathing holes, like the blue whale, are called baleen whales.

Beneath the water, whistles and clicks can be heard from the dolphins. Toothed whales have a special sense called echolocation. Just like when you shout loudly and hear the echo of your voice bouncing back from a wall or a mountain, the dolphins can hear the

echo of their own voice. This echo tells them what is in the water around them. That helps them find fish and octopuses, which they catch with their teeth.

[p. 24]

THE HUMPBACK WHALE

is a peculiar baleen whale. It likes leaping up out of the water and makes a tremendous splash when it falls back down again.

[p. 25]

VOLCANOES AND WHALES

The blue whale calf and his mother have reached a group of islands called the Azores. Each of the islands here is an old volcano that rises up from the ocean bed, and lava still comes out in some places. Around the islands, there are underwater mountains, which are simply volcanoes that do not reach the surface.

There are many kinds of whales here. The blue whale calf learns what they look like and what kind of underwater sounds they make.

THE FIN WHALE

is a baleen whale that is bigger than a humpback. It looks like a blue whale but is a darker colour and it doesn't grow quite as big.

THE SPERM WHALE

is the world's biggest toothed whale. It eats octopus and fish.

[p. 26]

SCIENTISTS ON THE LOOKOUT

When the blue whale calf and his mother reach the Azores, some people are waiting there: whale scientists in a little motorboat. Blue whales are what they have come to see, and now they all stand in the boat looking out for them. They are impatient. The boat rolls in big waves far from the land. “We are right above an underwater mountain,” says one of the scientists. “The water here is green. That’s a good sign.”

All the volcanic mountains that stick up from the bottom of the ocean create obstacles for the ocean currents. That makes nutrients swirl up from the depths to the surface where the sun shines. Together, the nutrients and sunshine make tiny, green, plant-like living things grow in the water. These green things are called phytoplankton, and tplant plankton grow. Plant plankton are tiny green plants that float around in the water. They are food for krill. Krill are food for the world’s biggest animal.

“A spout!” shouts one of the scientists. Far off on the horizon she has seen the high cloud a whale makes when it breathes out. Everybody sits down and the captain fires up the powerful motor. They drive so fast across the waves that the boat shudders. But when they get closer, they slow down so they won’t scare the blue whales. Then they switch the motor off entirely and wait for the whales to come up for air.

[p. 28]

BLUE WHALES AREN’T BLUE

The scientists have found the blue whale mother and her calf and they cheer a little bit louder when they see a young whale. The blue whale is a rare animal. So it’s good news every time a new one is born.

When the two blue whales come up to breathe, you can see that their bodies are covered in patches, in two different shades of grey.

“They aren’t really blue,” one scientist says to the other, who is seeing whales for the first time. “Their skin is grey but it often looks blue under water.”

The scientists take pictures of both whales. That way they will be able to recognise them again later, because every blue whale has its own unique pattern of patches on its back, which is different to the pattern on the backs of all the other blue whales. So the pictures of their patches can be used to find out exactly which blue whale you’ve seen – it’s a bit like the police using people’s fingerprints to find out who committed a crime.

The whales swim off. The scientists decide not to follow them, to give the mother and baby some peace and quiet. “Soon they’ll be heading further north,” says one of the scientists on the boat. “Right now, in springtime, there’s most krill here. Later in the summer, there is more krill in the cold seas near the North Pole.”

[p. 31]

TUNA FISH – BUT NOT IN A TIN

After the blue whale calf and his mother have swum away from the Azores, they meet a shoal of bluefin tuna. The big silvery fish swim very fast. They are a kind of tuna fish that is often caught as food for humans.

Every one of the bluefin tuna fish is heavier and longer than a grown man. But they are still small compared with the blue whales. The blue whale calf is curious and wants to follow the speedy fish, but his mother doesn’t want him to swim away from her.

If you see fish like bluefin tuna with whales, you’ll see that they look a bit alike. The shape of their bodies helps them glide through the water easily. Instead of arms and legs, they have fins to steer through the water with, and a tailfin at the back that they flap to move forward. But whales are not fish. You’ll find differences too, if you look for them.

For example, they swim differently. Fish flap their tails from side to side. Whales, on the other hand, flap their tails up and down.

Fish also breathe in a totally different way. Whales have lungs and breathe in air, roughly like us. But fish have gills. These lie under the gill covers, which are like plates that you can see just behind the fish's eye. The gills draw the oxygen that all animals need from the water the fish swims in.

So whales aren't fish but mammals, just like dogs, cats, mice, horses, humans and all other animals that have fur or hair, and that feed on their mother's milk when they are small. Blue whales do, in fact, have a kind of hair, although it isn't very easy to see. They have tiny whiskers on their heads that they can use to find their way in the darkness.

Are you wondering how whales came to be enormous sea creatures that look a bit like fish? It's a long story that starts with some four-legged mammals that liked swimming. Now we're going to take a trip millions of years back in time to see how it happened, so we'll say goodbye for now to the blue whale calf and his mother. We'll meet them again towards the end of the book.

[p. 33]

HOW WHALES BECAME SEA CREATURES

[p. 34]

A long time ago, there were whales with four legs that could still walk on land. You can see one of them here. It has been given the name *Pakicetus*, which is pronounced paki-setus and means Pakistan whale. The animal used to live where the country of Pakistan is today.

*Pakicetus* was the size of a large dog but its snout and its tail were both longer than a dog's. Its sharp teeth show that *Pakicetus* was a hunter, which caught fish or other animals

for food. Its habitat, the place where it lived, was in or beside fresh water. *Pakicetus* probably used to wade around there because although it could certainly swim, it probably wasn't very good at it.

[p. 35]

Its eyes were high up on its head. Maybe *Pakicetus* liked standing where the water was deep enough to hide its body, leaving its eyes poking out – a bit like hippos and crocodiles today.

*Pakicetus* lived around 49 million years ago. That was long after the catastrophe that wiped out the great dinosaurs but many millions of years before humans came on the scene.

[p. 36]

FROM LAND TO WATER

Whales changed from being land creatures to water creatures because they started to spend time in the water. Maybe they were hiding from some animal that wanted to eat them. Or maybe they found food in the water. In any case, they started to adapt to life in water. Here are some of the extinct whales that show how this happened.

PAKICETUS

AROUND 49 MILLION YEARS AGO

Although it spent a lot of time in water, *Pakicetus* still looked a lot like a land animal.

AMBULOCETUS

AROUND 48 MILLION YEARS AGO

This whale was probably much better at swimming than *Pakicetus*. Scientists believe that *Ambulocetus* had webbing between its long toes, a bit like ducks, frogs and otters. But they could also walk on land. The name *Ambulocetus* actually means walking whale.

[p. 37]

DORUDON

AROUND 40 MILLION YEARS AGO

*Dorudon* was a proper sea creature. It spent its whole life in the ocean. On the rear of its body, it had small hind legs but they couldn't be used for walking. *Dorudon* swam by flapping its tail, roughly like whales do today.

JANJUCETUS

AROUND 25 MILLION YEARS AGO

This creature lived long after *Durudon* and looked even more like the whales of our times. *Janjucetus* was more closely related to baleen whales. Even so it had sharp teeth not baleen.

[p. 38]

FOSSILS

The fossil scientists are far out in the desert, but the remains they find belong to sea creatures.

This is because there was an ocean here a long time ago. Dead whales sank to the bottom. Then their skeletons got covered in sludge and their shape was preserved to the present day. The surface of the earth has altered over millions of years, so that the ancient seabed has risen high above the sea.

[p. 39]

“Careful,” says an experienced scientist to one of the new ones. What used to be sludge around the whale bones has turned into hard stone. So it is hard work freeing the fossils without destroying them.

It is because of fossils like this that we know roughly what the whales of the past looked like. But as a rule, only the bones and teeth of dead whales are preserved as fossils. The skin and flesh quickly get eaten up by fish and other sea creatures. That’s why nobody knows exactly what the extinct whales looked like on the outside and it takes a bit of guesswork to make drawings like those on the previous pages.

[p. 41]

BIG AND NEW

At the Natural History Museum in London, all the visitors’ heads are tipped back to look up at the biggest skeleton exhibited here. It hangs from the ceiling. The skeleton is not a fossil: it comes from a dead blue whale that was found on a beach.

None of the old fossils at the museum have bones as big as those of the blue whale – not the dinosaurs and not the extinct whale species either.

Whale scientists wonder about this a lot: why did the blue whale grow so big? Something new must have happened in the ocean over the past three or four million years. That’s when the blue whale grew much bigger. But that isn’t all: several other whale species grew bigger at the same time. What was it that made the whales grow bigger than before?

The reason seems to be that Earth grew colder. At around the same time as the whales grew massively big, ice formed on the sea around the North Pole. It also covered

most of the huge island of Greenland, to a thickness of up to three kilometres! What's more, glaciers appeared on the mountains in many countries in Europe. Now and then, there were ice ages, when much of Europe also became covered by inland ice, just like Greenland. But even when there wasn't an ice age, the world was colder than before.

Why is it better to be a big whale in a colder world? Maybe because there's more food to be found. Cold seas suit krill. Or perhaps the reason why the whales grew so big is that it became necessary for them to travel (or migrate) between north and south. It is easier for big whales to swim long distances. It is also easier for them to keep warm, which is a good thing, of course, when the water is cold.

[p. 43]

THE GIGANTIC WHALE

It is strange to think that there are bigger animals living on the planet now than at any other time. By chance the enormous blue whale is alive at the same time as us humans.

That's lucky for us. But not so lucky for the blue whale. When we learnt how to catch blue whales, things almost went wrong. We came very close to wiping out the biggest animal that has ever lived.