

# Aura Koivisto

## A MAN AND A SEA COW

### THE FATEFUL EXPLORATION OF NATURALIST GEORG STELLER

**A stunning memoir and story  
of a fateful exploration in the  
north.**



Georg Steller, a passionate German scientist, sailed to Alaska in the 1740s as a member of the legendary expedition of Vitus Bering. During the journey, he discovered multiple new animal and plant species, including Steller's sea cow, which was never seen by another scientist. The species went extinct only 27 years later.

Bering and Steller shipwrecked on Bering Island, where Bering as well as many other members of the crew died. Steller survived his grand adventure, and he had the time to research Kamchatka and Siberia during his unfortunate trip until he passed away in Russia.

A man and a Sea Cow tells Steller's incomparable story while captivatingly studying the world and worldview of the naturalists of the past.

Author **Aura Koivisto** had an exceptional childhood. She lived at the Helsinki Zoo, as her father was its director. Koivisto has published twenty books in total and written both fiction and non-fiction.

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***The man and the sea cow. Naturalist Georg Steller's fatal expedition***

**by Aura Koivisto**

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*I often think about the lonely moments I spent on that island in the Arctic Ocean. I rarely give as much thought to any other time of my life. Is it because our lives were so uncertain, and so intense, back then?*

*Despite all of the everyday chores and the hardships we endured, it was an incredibly strange time; a strange and surreal time. We cooked meat stew and chopped wood; repaired our clothes; got diarrhoea; sustained various aches and pains, and yet we lived as though we were on our own little planet, in some kind of uninhabited space between the sky and the sea where nobody could possibly know about us. To the rest of the world we were already dead and, truthfully, we had experienced a lot of death first hand.*

*Even basic survival required hard work and we often had to take huge risks. We didn't have time to stop and think about what was happening to us. We just had to keep the hunger and cold at bay and concentrate on surviving. We had no choice but to keep faith that one day, God willing, we'd make it to the mainland.*

*The hardest thing to deal with was the lack of natural light, which gave us very little time to dedicate to our work and chores—and forced idleness certainly didn't help anyone. Even before the storm had washed us up on the island, it felt as though a heavy darkness had descended over us and that the cloudy, misty, grey days would last for weeks on end—as though the only two states we witnessed were twilight and darkness, which took it in turns to linger over us. I only saw the Northern Lights once.*

*When winter finally arrived, the wind brought ice and snow with it and, soon enough, everything was covered. The gales blew for days on end, making it difficult to stand up outside, let alone walk in the right direction, an action that required a gargantuan effort. The snow brought by the gale was sharp enough to hurt and blind us, and the snow fall was so heavy that our footprints filled with snow before we even had a chance to turn around and see them. The wind whistled and howled in the cracks between the rocks: it almost sounded as though a huge, evil spirit had been let loose and was unrestrainedly raging. The sea was equally furious, violently bashing against the shore as though it intended to tear our island to shreds. When our island was hit by an earthquake in February, it finally seemed like the end was in sight. At first it felt like a huge noise was rolling over us—one that lasted for many minutes—then ground started to shake. I was inside our ground bunker when the hut's foundations started to move. I immediately ran outside to see what was going on. I couldn't see any movement at sea... in fact, the weather was rather pleasant...*

*There were three earthquakes in total. The last one happened in the summer, reminding us that humans beings are very fragile and that, in this area, nature can be unpredictable all year round. It was then that I realised the meaning of life doesn't come from nature, but from God—and that there are moments when God seemingly turns his attention elsewhere, leaving humans at nature's mercy. The best we can do is to survive these moments without breaking.*

*That's where I am in my memories. In a place ruled by the endlessly moving sea, the limitless sky and a distinct lack of anything else. Everything is vast and open. A skyline of purple-coloured mountains, whose outlines are as sharp and uneven as the rocks that stick out of the sea, is just about visible in the distance. Shorelines, shallow water, grass, pebbles and sandy beaches spread across the island and combine to make peaceful, unchanging landscapes. But there are also places which change dramatically on a daily basis: some spots are only accessible when the tide is low, before the sea gets restless and starts to move, before it reaches the rocks.*

*Our island's beaches are full of magnificent basalt stone formations, which resemble the ruins of ancient towns. In the mist, and beneath the murky storm clouds, these wonderful towers, columns and archways are incredibly impressive.*

*There are plenty of stones on the island, even though the water has been breaking them down and smoothing them over since the beginning of time.*

*Time, which I still have plenty of on the island, doesn't reveal itself. In their agelessness, the sea and the mountains don't give anything away—and there are no other human settlements to be seen. There's just our camp, which was hastily put together in an emergency and has been maintained using only scarce materials. It is so basic that you wouldn't be able to determine when it was made, within a decade here or there... our shelters, which were built partially above the ground and partially below it, were made from driftwood, planks from shipwrecks, animals skins and sails. We call them our graves, even though they helped us survive, and despite the fact that the nearby meadows, which are filled with buttercups and dock leaves, contain real graves.*

*Our lieutenant commander Vitus Bering, who died on the eighth of December in 1741, was in one of those graves. We named our island after the lieutenant commander, in his memory.*

*We had been his expedition group and this was his American voyage, even though he'd never return. St Peter, the handsome, two-mast vessel, had departed in June 1741 and it was shipwrecked in November, later that year.*

*Lieutenant commander Vitus Bering declared me, Georg Wilhelm Steller, the expedition geologist. It was a modest title, considering that my duties included all manner of nature exploration. I was interested in everything: the sea otters' games, the uses of various herbs and the salmon that leapt up the river, not to mention the salmon-pink raspberries, oystercatchers and rollers... And I was equally fascinated by my own species: the natives and their day-to-day lives formed a key part of my explorations.*

*Finding something that was previously undiscovered—that was what I considered my calling, my passion and my obsession, on top of everything else. I had left my home in Germany behind, becoming a servant of imperial Russia, an adjunct of The Saint Petersburg Academy of Sciences. I was sent on my first expedition to Siberia, which is where I met my fellow countrymen, professors Gerhard Friedrich Müller and Johann Georg Gmelin, who sent me even further, to Kamchatka. It was there that I received an invitation from lieutenant commander Vitus Bering.*

*I say that I was “sent” and “invited”, but really I wanted to go there myself. It was my life, I wasn't just serving imperial Russia and The Saint Petersburg Academy of Science; I was serving science and God.*

*When I was in Siberia, Kamchatka and America, I was able to photograph previously undiscovered animals and plants, which were later named after me.*

*Steller's sea cow. *Hydrodamalis gigas*. The most famous of them all. The giants of the sea who rode the waves and often weighed many tonnes. They resembled unbelievably large seals, although they belonged to the sea cow family rather than the seal family.*

*They were round animals with small heads and very thick skin, like the bark of an oak tree, which protected them from ice and rocks. Their blunt, whiskered snouts were always digging through the algae that had washed up on the shores, munching on it for nourishment. Families of sea cows always moved as a group; partners were faithful to each other. They were naturally sociable and surprisingly gentle-natured creatures. If one member of the family was wounded, the others gathered around it to show concern, without realising that they were in danger of being hunted.*

*We killed and ate thirteen of them in total.*

*Now I know that the coasts of the Commander Islands, on the east side of Kamchatka, were the only place in the entire world where they could be found. Others arrived on the island after us: new explorers arrived every year, new men who hunted. They hunted animals for fur, but they killed the sea cows for food, just like we had. They killed these gentle animals with such ruthless abandon that, soon enough, they started to disappear—eventually becoming extinct.*

*We believe that they were last observed around twenty-seven years after we first discovered them.*

*Steller's sea cows have disappeared from this world, and so have I. Even if the sea cows' bones have been preserved in some museum or other, there's not much left of mine. My grave, which was on the banks of the Tura River in Siberia, is long gone: the river flooded in the spring, it flooded again the following spring, and year after year the water wore down the beaches, until eventually the whole bank collapsed into the river.*

## **I. Big plans**

### **The restless explorer**

How could someone who has died long ago tell the story of his life, including what happened after his death? He cannot. When a person loses their consciousness, it disappears for all eternity. In the history of mankind, evidence suggesting otherwise has never been found. Every individual can be proud, or regretful, of their uniqueness, which is of course transient. Whether we like it or not, the world continues after we have gone, regardless of who we are, our intelligence, our memories and, to an extent, our personalities.

People can pass down their genes to their descendants, but for mankind to continue we must also pass down our stories, knowledge, skills, morals, thoughts and feelings. We don't all have blood relatives, but presumably each of us has, or has had, a soul mate.

This is why, with every new life that comes into this world, a special thing can happen, and that thing can happen again and again. That thing is borne out of the legacy that people, along with their peers, leave behind—in writing, in pictures or in something else—something that contains the history of that person, and can affect the lives of those who come after them. This is exactly what we all need: to be touched and to establish a sense of connection, a sense of belonging. That's how we live our lives—and the lives of others—many lives, in many different times and places, and that is how those who have lived well before us can live on within us.

Yes, we will all die eventually and we will all lose consciousness. But many of us leave traces of ourselves behind and, at least for the time being, the human species continues to survive. Perhaps our species—not to mention other species—would survive even longer if we were more able, and more willing, to live with each other's fates than we are now.

But why did Georg Wilhelm Steller, the historic traveller, start haunting my thoughts? What was it about him that fascinated me?

This book was inspired by something that happened to me over thirty years ago:

I'm in Northern Norway, on the shoreline of the Arctic Ocean, with friends. We're sitting in a small rowing boat, that belongs to a merchant called Erling Sundve, in a village called Hamningberg. We've spent the day riding the waves as they splattered and crashed, and now we're resting on the mighty rocky banks of Syltefjordstauran.

The rocks rise sharply and uniformly out of the sea—and they're jam-packed full of birds. My friends and I are keen birdwatchers, but the sheer quantity of birds flapping their wings in the air goes beyond anything we have ever seen before. It's incomprehensible, almost indescribable. Their sound is deafening as tens of thousands of birds gather on the rocks—kittiwakes, guillemots, auks and European shags—, as though they are announcing their existence and declaring their breeding rights. Constant movement accompanies the cacophony of noise: the birds are dipping and diving in the air, plummeting and flying past us. The sheer volume of birds makes it feel as though the air is thick with mosquitos, except they're birds and the air is filled with the stench of their droppings, mixed with seaweed and saltwater. The northern gannets, with their smooth lines, have taken over the tower-like rock formations and the whole thing seems incredibly exotic to us—they have the same kind of grand majesty as albatrosses.

Here, among the birds and the mountains, the world feels mysterious, as though we've travelled back in time. If only it were possible to see the world as it once was—at a time when man was still relatively insignificant and when the natural world was so rich and diverse that we cannot even imagine it today.

As well as the huge flocks of birds I can remember a small, unusual plant. It embeds the rocks and stones in a luscious, thick, green carpet covered in white, spherical flowers. It is *Cochlearia officinalis*, an herbaceous and cruciferous flower. Erling Sundve told us that it was considered a very important herb among sailors who needed to treat scurvy. He explained that its flavour is pleasantly sharp and acidic: it literally tastes like vitamin C.

Steller also collected a bunch of these very flowers during his sailing expedition.

I don't know whether Erling Sundve was thinking about Steller when he told us about the flower, but he may well have read Steller's story. He certainly knew a thing or two about the natural world. If nothing else, Steller's name would have been familiar to him. One of the bird species that Steller photographed was Steller's eider, *Polysticta stelleri*, which we had observed, through binoculars, on the shoreline of Northern Norway. A water bird, which breeds in the Russian Arctic and migrates to the Varanger Peninsula for winter until the start of spring. The males look grand and are breath-takingly beautiful. They're a dying species too...

Years later, I spent over ten years living on Estonia's Vormsi island, which had an entirely different kind of atmosphere. No tides or mountains. The beaches were filled with flowers, just like the gardens of the south; and the sea gently glittered underneath the sun... The explorers who sailed through storms, and their scurvy, had been long forgotten.

I returned to Varanger thirty years later. That's where Steller made an impression on my life.

The Arctic Ocean is, after all, an ocean. It's possible to see whales there and it's also possible, at least in principle, to travel almost anywhere with the Arctic Ocean as your starting point. Like Kamchatka and Alaska, for example. The sea and the sky's limitlessness prompt thoughts of infinity. Yes, some people feel incredibly small when they spend time by the sea, but I find myself feeling overwhelmed by its grandeur. Or rather, it makes me curious. The world is so vast that I feel consumed by wanting to know everything I possibly can about everything,—I had this realisation on the shore of the Arctic Ocean.

Georg Steller's life was defined by his overwhelming desire to learn. He was prepared to make huge sacrifices in order to learn new things. Information provided by others wasn't enough: the man wanted to explore and find things out for himself. That kind of thirst for knowledge is what creates an explorer.

As soon as I start to read about Steller, I want to know more. And more. I order book after book; I look online for pictures of Bering Island, Alaska, exotic looking birds and plants, drawings of Steller's sea cow and I examine maps of his travels at my table...

I'm overjoyed when, after weeks of waiting, the 600-page biography of Steller's life by Leonhard Stejneger that I have ordered from America finally arrives. Stejneger was a Norwegian biologist who was alive at the turn of the 19<sup>th</sup> and 20<sup>th</sup> centuries and ended up moving to America. Alongside various other interests, he was inspired by Steller and spent a lot of time exploring Bering Island's flora and fauna and looking for Steller's sea cows'



bones. Leonhard Stejneger: it's a name worth remembering because he'll be quoted a lot in this book.

*Georg Wilhelm Steller: The Pioneer of Alaskan Natural History*. The book was first published in 1936 but the copy I got, which was printed in 1970, came from an antiquarian bookstore and arrived brand new, seemingly unused, and inside a burgundy sleeve, which seemed somehow Biblical. Its first few pages feature stylish black-and-white drawings of the American blue jay (*Cyanocitta cristata*) and the Stellar jay (*Cyanocitta stelleri*)—as well as the words of the great biologist Carl von Linné, which were offered in condolence to Steller: *O bone deus, quod tantum virum eripuisti!* “Oh, gracious God, what kind of man have you taken away!”

I devoured the book. It was as though I was in love with a man from the 18<sup>th</sup> century! But why wouldn't I be? He is, after all, utterly fascinating. Brave, energetic and sharp. Easy-going and modest, restless and hot-headed. The man, who stood up for justice and equality, was outspoken and sarcastic, gentle and poetic. A wonderfully contradictory, warm-hearted, hilarious, sometimes grumpy, person...

If I'm being honest, he does have some features that are, well, less than pleasant. When I first came across Steller in my twenties, I was filled with disgust: he was cruel and an animal torturer. It was thirty years before I forgave him and allowed myself to develop a deeper understanding of him. The first step was coming to terms with the fact that people can only be judged by the standards of the time they lived in.

He was a true hero and his story is a real adventure, which is exciting to follow, despite the fact that its main points are well documented in history books: will he, or won't he, survive and how will the story pan out for everyone else involved? It involves many people taking various different paths that ultimately lead to many different fates.

But there's more. For nature enthusiasts, Steller's story is geographically rich and involves a huge number of previously undiscovered species. Impressive landscapes, beautiful plants and wonderful animals, each with their own story. Finally, this man's rich history raises questions: what was the nature of the relationship between people and nature three hundred years ago, and what is it now? What has changed, and what hasn't?

In this book I consider Steller's personality, his choices and the way he saw the world. What did he see and experience, what did he think and feel? What would he say about our lives today? As I think about the answers to these questions, I go on an imaginary journey. I jump into to a different time and take on the perspectives of another person, to the extent that

my own day-to-day life almost disappears... Until I step back into the present day and return to reality—enjoying, for a change, the joys of speculation and hindsight.

History remembers Steller Vitus Bering as the world's most infamous American sailor. In reality, from the perspective of the expedition's late survivors, it was more Steller's journey than Bering's; it is Steller's notes that we have been left with, not Bering's.

Steller was officially named the adjunct of the Saint Petersburg Academy of Sciences, a title universities no longer use and which is perhaps closest to some kind of assistant role. An adjunct ranked higher than a research assistant and lower than a professor.

The Academy of Sciences was established by Tsar Peter the Great in 1724, but it was left in the care of his spouse and successor, Catherine I, when the tsar died. The new institute aimed to ensure that Russia's scientific achievements were on a par with those being made in Western Europe, preferably even bettering them. Of course, the rules of the empire dictated that studying science would also serve economic, administrative and social purposes.

In the early days, however, a shortage of Russian scholars made it necessary to seek reinforcement from abroad. The academy's scholars were mostly twentysomething men from Germany who were just starting out in academia and to whom Russia offered exciting opportunities.

Steller was from Germany. He was born in Bad Windsheim, a small town in Franconia, on 10 March 1709. His father was a cantor and it is believed that there were as many as ten children in the family. Steller studied and built his reputation at the Universities of Wittenberg and Halle, spending time in Leipzig and Jena, both places he didn't seem to take to. Steller started out studying theology, but he soon moved on from learning about spirituality to learning about the body, which involved attending anatomy lectures and getting to grips with the basics of zoology and botany. He was most interested in plants and the young man was so enthusiastic and determined in his studies that his tutor Friedrich Hoffmann started to mentor him with a view to awarding him a Halle professorship.

Seventy-year-old Hoffmann, who was the king's court doctor, was a well-respected professor of medicine who also had a side job working in botany as well as all sorts of other areas, which he somehow mustered the time and energy to do. He pushed Steller to get all of the qualifications he needed to become a professor of botany at the university in Berlin but, by the time Steller was ready, the situation at Halle had reached a standstill. Creating a new professorship would have required royal approval, which they didn't get it due to King

Frederick falling ill and requiring doctor Hoffmann to immediately rush off to take care of him. Steller's university post was becoming less and less certain.

Besides, the young man wanted to live his life, rather than wait for it to get started. Steller swept any hopes he had of a possible university career in the safety and familiarity of a Western country under the carpet—and decided to pursue a life in Russia.

Although Steller was just 25-years-old, living in a foreign country, getting used to speaking a new language and adapting to a new culture, he soon found his place. He even changed his name in honour of his new life: prior to the move he had been a Stöller, rather than a Steller. Presumably he changed the spelling so as not to confuse the Russians with the strange ö-letter in his name. Instead, he himself decided to learn the Cyrillic alphabet. On top of everything else he had to learn to adjust to a new, or rather an old, way of life; Russia was still using the Julian calendar, which ran eleven days behind the Gregorian calendar.

In fact, Steller's written work often appears to follow the "when in Rome" principle, which means that it is dated according to the Julian calendar. As such, in this book we live eleven days behind; Steller's arrival in Russia is dated eleven days after it really happened. That said, timekeeping accuracy wasn't that important to Steller and we ought to remember that Bering's expedition set sail during very severe weather conditions, making the autumn endured by the explorers much longer than winter, and longer still than the logbook would suggest.

As soon as he arrived in Russia, Steller settled down in St Petersburg, but soon enough he was dreaming of a trip to Siberia—which can't have been a common dream in those days, and is still rare today,—so that's exactly what he started to prepare himself for.

The explorer travelled thousands of kilometres by sleigh, river boat and foot, sometimes sleeping under the stars, and sometimes in the pitch black log huts he stumbled across. When he finally reached the eastern side of Asia he continued, towards the unchartered waters of the sea—regardless of the fact that he preferred land travel and certainly wasn't a sailor.

Lieutenant Commander Vitus Bering named Steller the expedition geologist, but studying minerals was not enough for Steller. He was the kind of naturalist who was interested in everything, apart from: otters; molluscs and especially umbellifers. In both America and Russia he had made enthusiastic anthropological observations by studying, among other things, Itelmen food culture as well as the origins of American colonialization.

It was on the Bering trip that Steller became the first scientist to visit Alaska. During both his Siberian and Alaskan expeditions he had managed to document several new plant

and animal species, which were later named after him. These include the Steller's sea cow, the Steller sea lion, the Steller's sea eagle and the Steller's jay, although the use of Steller's name has more or less been abandoned. Nowadays the names of new species usually represent the animals themselves rather than the people associated with their discoveries. In scientific lists of discovered species, however, many more birds, fish, molluscs and plants are named after Steller.

However, only a fraction of Steller's discoveries were ever named after him in the first place. Since he did not have time to document his many discoveries himself, and since Linné's binomial nomenclature system was not in use during Steller's lifetime, it's difficult to know exactly how many new species Steller ended up documenting. In official records, a species' scientific name is followed by its name in brackets, and Steller's discoveries—the samples he collected and the descriptions he gave—have been clarified and revised by many researchers over the years, often many tens of years after his death. This is why the names of the species that Steller discovered are often followed by a name other than his own. In addition to Carl von Linné, Steller's discoveries have been named after Johann Georg Gmelin, Johann Friedrich Gmelin, Peter Simon Pallas, Wilhelm Gottlieb von Tilesius vom Tilenau, Georges Cuvier and Alexander von Middendorff... It's a long list, which just proves how many plants and animals there were!

Many of the species that Steller discovered are Asian or North American, but among all of the Siberian and Alaskan species he found something familiar to Europeans: the three-spined stickleback (*Gasterosteus aculeatus*), a tiny fish that, according to biologists, belong to a particularly exciting species.<sup>1</sup> Gardeners may also be familiar with the bunching onion—or spring onion (*Allium fistulosum*), which resemble chives and grow in tough conditions. Steller discovered the species near Lake Baikal in Siberia.

Nobody ever documented Steller's appearance. No official portraits of him have survived, which means we cannot know for certain what he looked like. It is said that he was a

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<sup>1</sup> The three-spined stickleback is a species that varies in appearance and has an interesting social life. They are fish who know the other members of their shoal and they seem to embody the spirit of fair play: if you help me, I'll help you too. Three-spined sticklebacks make for caring fathers. They build small nests for their eggs, guard them, keep them ventilated, clean the eggs and eventually nurse their spawn after they hatch. I once observed a three-spined stickleback at the bottom of a creek, swimming around furiously and scaring away all of the other fish that dared come close to the nest. Its spawn were beautiful and coloured blue and orange. Steller, on the other hand, observed the three-spined stickleback on the shores of Kamchatka and the Kuril Islands.

manifestation of *corpore indurato* (well-built) and we can be certain that he wasn't fat; after all, the difficult treks he embarked upon would have required peak physical fitness.

Before the invention of photography, artists accompanied explorers on expeditions in order to document their findings through paintings and drawing. These artists are believed to have helped Steller. One such artist was Johann Berckhan, the man behind one drawing which is thought to depict Steller: a man, with European facial features, dressed in a Siberian shaman outfit. Based on this picture, the artist Ivan Stankov painted a portrait of Steller for the University of Tyumen in Russia in 2016. When my publisher found this picture on the internet and sent it to me, I had already formed an image of Steller in my mind. The man in Stankov's painting is stylish and fine-featured, almost prince-like, whereas the Steller I had imagined is a lot more rough around the edges. I cannot bring myself to give up on my image of him, even though I must admit that there's no justification behind my forming it.

### **A scientist, by the grace of God**

There may not be any reliable portraits of Georg Steller, but the restless explorer remains immortal through his writing.

Steller's zoological work *De Bestiis marinis* ('The Beasts of the sea') was published in Latin in 1751. His history of Kamchatka, which was published in 1774, was partially written in German; as was his journal of his voyage to America, which was published in 1793. All three texts are also available in English.

All sorts of other texts by Steller have been discovered since then, including lists of species in Latin and, surprisingly, his private correspondence and journal from his Siberian voyage, which was thought to have been lost before it was discovered in St Petersburg's archives in the 1990s. They have now been published in German.

At one point, Steller's works were taken to St Petersburg, where his estate was settled and his materials—sample examinations, transcripts and publications—were examined by professor Peter Simon Pallas from the science academy.

Pallas was born in 1741, the year as Bering sailed to America, and he died in 1811. Like Stellar, Pallas was German, he studied at Halle University and he took part in long expeditions to Siberia. He was one of the most respected naturalists of his time who, in addition to his own fieldwork, organised other expeditions and published a huge number of manuscripts. His portrait shows Pallas, who wears a wig, looking at the world through warm, though slightly melancholy, eyes.

Pallas did an excellent job of compiling and publishing Steller's materials but, as a servant of the Russian empire, he recognised the need to make a few corrections. He corrected a few of Steller's factual errors and got rid of any statements that may have upset the authorities.

Steller's German-language journal about his American voyage was found in the St Petersburg archives in 1917. Leonhard Stejneger, the man who also wrote the Bible-like biography of Steller, translated it into English.<sup>2</sup> A more recent translation of the journal, *Journal of a Voyage with Bering 1742*, was published in 1988. It was written by Margritt Engel and Orcutt William Frost. Frost is an emeritus professor of history at the University of Alaska and he is most well-known for his brilliant biography of Bering. Engel is an emeritus professor of German language and, along with Karen Willmore, he produced an English-language translation of Steller's work on Kamchatka.

Steller's texts have been notoriously difficult to interpret. There are lots of reasons behind this. The handwriting of the time was typically both decorative and intricate, with almost no clear text. This means that when other writers make copies of the texts later, mistakes are made, and these mistakes are often repeated further down the line. Moreover humorous situations can occur if one mistake, such as a single letter being recorded incorrectly, is made and it changes the entire meaning of the word!

The translating process was helped by Steller's German, which was not particularly strong. At the time students focussed on Latin and in Russia people were encouraged to use the country's own language. Steller is thought to have invented some words, combining German and Russian. In his work on Kamchatka Steller combines these invented words with native vocabulary, which he recorded by ear since it did not have a written form. Of course language also changes over time; many words have an entirely different meaning today than they did in the 18<sup>th</sup> century.

The Latin names of animals and plants have also caused problems. In Steller's time the Linné binomial nomenclature system was not yet in use, and the names Steller gave his discoveries are very descriptive and have since changed. In fact, Engel and Willmore, the people who translated the work on Kamchatka, have talked about the detective work that they had to do—consulting biologists and 18<sup>th</sup> century Latin experts—in order to make sense of

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<sup>2</sup> Steller's manuscript was found by the Stanford University professor Frank A. Golder, who published two books about Bering's travels. In addition to Steller's journal, the found works include his boat's log books, Lieutenant Sven Waxell's reports, captain Aleksii Tširikov's reports and a short book about Steller's life.

Steller's writing. Despite all of this, they still had to make do with their best guesses in some instances.

Steller had a good command of Latin and his most important scientific text, a description of the Steller's sea cow, is included in *De bestiis marinis*. He wrote it while he was shipwrecked on Bering Island, living in incredibly basic conditions, sleeping in trenches, out in the open and perhaps in some kind of windproof stone cavern, not knowing whether he'd ever make it off the island alive.

Steller wrote the book's foreword later, during a winter spent in Kamchatka. In it he explains that he understands that his work was hurriedly recorded and is thus not expressed in the most polished way. As such, he gave future interpreters permission to change the text as they saw best—the most important thing is that his discoveries were recorded and therefore accessible: “If someone doesn't like the fact that the porridge is served in a scruffy clay bowl, then serve it in the finest, silver dish.”

Steller didn't have the patience to sip tea with his little finger raised or to put bells and whistles on everything. He was the kind of person who prioritised moving on and making only the most necessary notes. There's something else behind the mountains...

At this point Steller is already planning new expeditions: he has heard about the mammoth bones that were found in the Kolyma River in Siberia and he wants to examine them. He spends a lot of time thinking about the rumours he has heard about strange carnivores in Astrakhan: big black wolves and “ancient” hyenas. He's interested in deserts. He hopes to get the odd work assignment here and there from the Saint Petersburg Academy of Sciences. The world is so vast and there's so much to explore!

But Steller doesn't have much longer: in fact, he only has four years. He's just 37-years-old when he dies.

Although natural sciences are Steller's passion, he also examined pastoral care and questions relating to physical health when it was necessary, since the expertise of a natural scientist can be useful in these fields.

Medicine still relied on botany in the 18<sup>th</sup> century; after all, qualified doctors know all about herbal remedies and their uses. In fact, at that time doctors worked in two very different fields. General practitioners tried their best to treat a large variety of symptoms and diseases, whereas surgeons were in demand on the battleground. As a result, general practitioners often worked alongside botanists, whereas talented surgeons, with their surgical knives, were almost like hairdressers who simply cut deeper.

It was important to Steller that as a natural scientist, he did not just serve science, but also God. He believed that life on earth is part of God's creation: the work of His hands and proof of His existence, which means that in explaining nature, Steller was also explaining God and His work. When the young man gave a speech at his high school graduation ceremony, before leaving for university, the title was "A thunderstorm as proof of God's power". Apparently the weather phenomenon is interesting from the perspective of natural sciences. Steller was fascinated by nature ever since he was a little boy, but the speech's title tells you everything you need to know: God is behind all of this.

This view was not, of course, unique to Steller; it was a common opinion of the time. 18<sup>th</sup> century natural sciences embraced theology just as much as medicine embraced botany. It was not until the birth of Darwin's *Species* in 1859 that people started to question the idea of a divine creator. God did not create each species individually, in fact the process didn't really rely on God at all.

If Darwin were to come back to life today and learn about evolutionary theory, the genetics and palaeontological theories which so firmly complement his ideas and explain what was still a mystery in his day, he would have probably felt excited and perhaps even proud. Even though Darwin didn't express his religious beliefs in public—he was a considerate person and his dear partner Emma was a devout Christian—the biological worldview of today would hardly cause him any problems. For naturalists like Steller from earlier times, however, it would probably be earth-shattering.

Steller was a remarkably religious man. Even though he didn't go on to become a priest, he developed an interest in pietism at Halle University which went on to inform the moral code that he lived by. The most important thing to a pietist is living modestly and free of hypocrisy. Religion should be a part of everyday life, not just something that is observed on Sundays, which means that Christianity should impact your everyday life and shine through in both words and actions.

On the other hand—if you imagine Steller waking up in the 21<sup>st</sup> century—perhaps modern natural sciences wouldn't shake his world as much as we may expect. After all, some modern day biologists believe in God. As such he wouldn't have to give up his belief in God: Steller could simply believe in some kind of supernatural power and spiritual dimension as something that exists in another realm. The only thing he'd have to abandon would be creationism, since evolutionary theory is the basis of modern natural sciences.

Accepting evolution might actually be quite easy for Steller, as he seemed to be open to gaining new insights and revising his world view. For example, he thought about the



contradictions posed by species distribution a lot. Even though every species was created by God—Steller didn't doubt this—he bought into the idea that creation happened in many different parts of the world. This belief was influenced by, among other things, the seals he saw in Lake Baikal. How could seals, creatures that would have been helpless if they were expected to move on land, have been able to migrate from the sea to lakes, unless they were specifically created there?

Steller also considered how the environment affects living creatures and changes things like their size and fur. He wrote about how cattle imported from Yakutia became larger and more productive in Kamchatka. European horses became significantly smaller and tougher when they moved to Siberia, and horses evolved to become more slender in India and China so that “over time they became a special species”. This final statement is interesting, and suggests that Steller may have almost anticipated that the species created by God were not permanent and unchangeable.

Darwin also examined the changes in domestic animals—finding that man can influence evolution by making external changes to increase the strength of domestic animals in an astonishingly short space of time. It would be too far-fetched to consider Steller someone who predicted evolutionary theory, his thinking certainly didn't extend that far. He was interested in the environmental effects on different organisms—as well as his own species—on their appearance and behaviour, but this hardly undermined his belief in the literal truth of the story of creation.<sup>3</sup>

Nowadays creationism is invariably associated with religious fundamentalism. Because evolution doesn't fit with a literal interpretation of the Bible, creationists try to explain how it is false. The attitude that creationists adopted towards the advancement of science has always, therefore, been very selective: they did not expect doctors to have the skills of botanists and they didn't categorically refuse the offerings of modern medicine—instead claiming that biologists ought to give consideration to the views held over the last few hundred years.

If the people of the 18<sup>th</sup> century were confused by the interdisciplinary understanding of natural sciences, Steller's straightforward contributions in a breadth of fields were unusually refreshing. He was shipwrecked on an island, which meant that his knowledge of

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<sup>3</sup> Steller was of the opinion that the harsher and more difficult the conditions a person finds themselves in, the harder working and more resourceful he will become. The same applied to animals: working dogs from the north remember the long journeys they have endured and thus they are capable of incredible things that people elsewhere in the world couldn't imagine. Later, however, Steller was forced to admit that his environmental theory was not bullet-proof because in the Yakutia, for example, the Cossacks tended to be lazy and drink heavily—and there, if anywhere, the climate is harsh!

plants and the anatomical skills he developed in order to skin animals—not to mention his meat cutting skills, were necessary. Moreover, when a researcher has an unshakable belief in God’s protection, it is easier for him to remain brave and confident in the midst of any hardship he must endure. Even then, when protection is not guaranteed to all of his travel companions, he can seek comfort in the fact that what has happened was God’s will.

Steller occasionally forgot the humility and devotion that are required of servants of God, but what if he hadn’t been so self-confident? What if he hadn’t believed in his own talents and in the importance of his cause as strongly as he did? A meek, subdued and unsure Steller wouldn’t have gone on the expedition at all. He would have remained in a stone house, in some small German town. He’d have waited and dreamt of the professorship at the university... And we would have never heard of him.

Steller didn’t save himself, or others. He was straight-talking and, in many ways, a difficult person. He didn’t bow down to those above him, he made demands, and he got irritated when people didn’t comply with them. He openly criticised anyone he wanted to whenever he wanted to. In other words, he was a wise ass.

And yet this man, the same man who was often angry and sarcastic to those closest to him, didn’t demand a lot for himself. In the midst of every hardship he endured, he threw himself into work, motivated by nothing but sincere love for his neighbour. It’s almost as though he was his best self in the face of difficulty.

In his journal, Steller complained about the voyage—saying things like “others don’t understand” and “I would have known”—but he writes about surviving the shipwreck in a matter of fact, almost objective, way. He can come across as demanding and difficult to get on with, but this is generally when he believes things are being handled poorly. When it came to his own living conditions or other external circumstances, he was extremely modest and adaptable.

When he was on the deserted island Steller tried to offer a sick lieutenant commander Bering otter meat for a meal one day. Bering was disgusted by such a revolting offer and questioned Steller’s tastes. “I’m just trying to adapt to the circumstances,” Steller told Bering. His words tell us something. We can imagine how he shrugged his shoulders, considered the need to adapt to his surroundings a necessary evil, and decided that in this particular situation eating otter meat was necessary. For the lieutenant commander, however, rock ptarmigan had to be shot.