



Magdalena Konečná • Jana Sedláčková • Štěpánka Sekaninová

SHAPES & PATTERNS IN NATURE



*Nature's Wonderful Colours*



# Shapes & Patterns IN NATURE

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# Prelude

In the autumn, the ground is covered by leaves, little and small and of all shapes. Some are round like a palm, others resemble a heart, and yet others are adorned with waves or a prickly serration. In the middle of each leaf, nature has fixed a pattern of tiny veins which is unique to that particular leaf, just like our fingerprints are unique to us. Plants, animals, and minerals don't have diverse shapes and colourful patterns for no reason—all this is very important to those who have it.



## Hide-and-seek

Plants and animals use this motley range of shapes and patterns to communicate. Whenever anyone needs a good spooking, dangerous-looking black-and-yellow stripes will definitely work. In winter, the careful brown stoat does wonders with its snow-white camouflage which allows it to frolic in the snow without a care in the world. And what does stick insect above mask as?



## Play of shapes

Leaves of sunflowers, as large as tiny sails, catch more light from the sun and the narrow leaves of conifers, called nettles, are better for handling the wind when there's a savage storm.

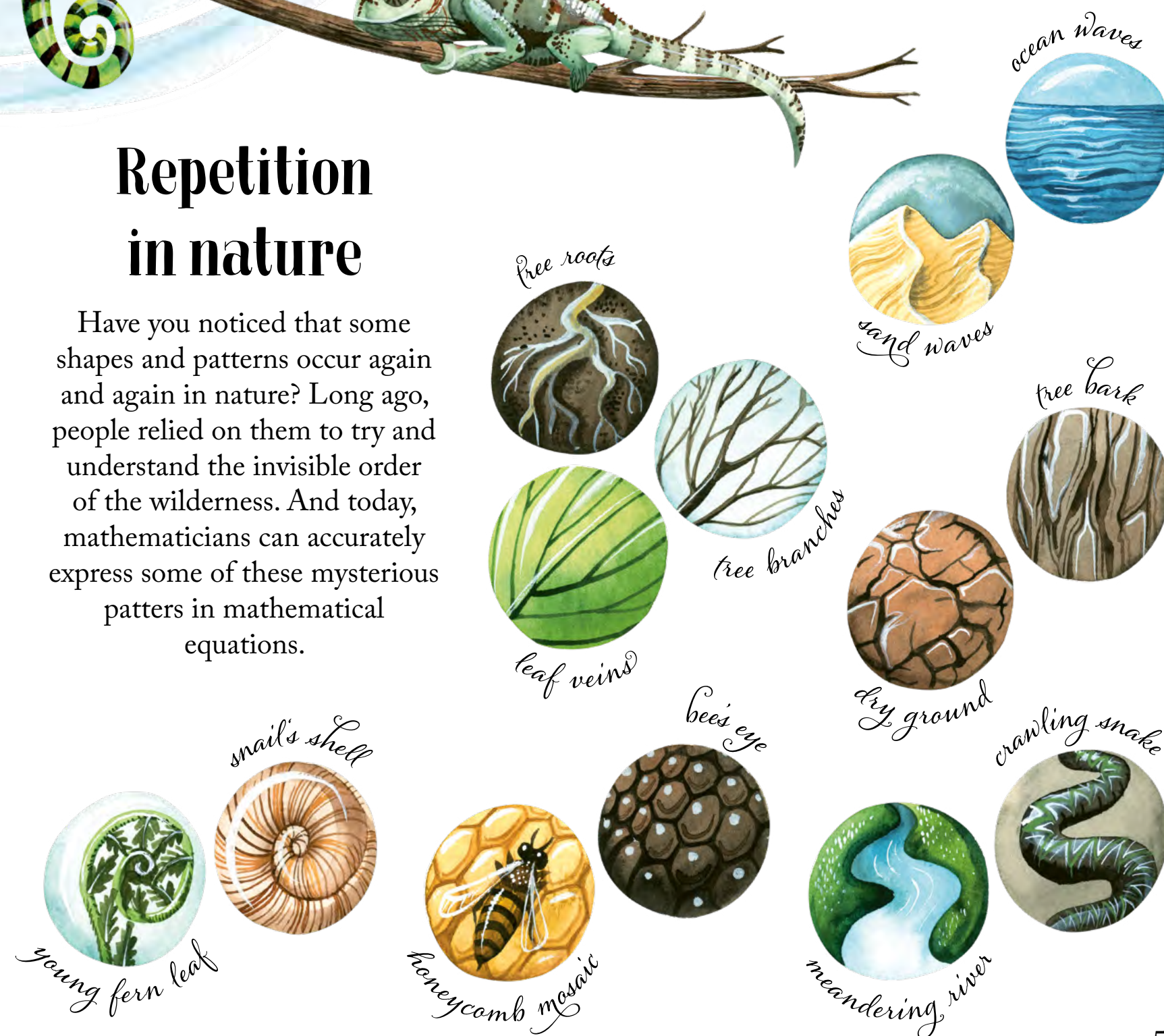
## Chameleon, master of disguise

Some animals can change their patterns just like that, depending on their mood. A chameleon, for example, has three layers of miniature skin cells with a colourful pigment. When these cells mix, the little monkey brightens up in surprise, contentment, or annoyance. When tired, it turns pale green. And when in love, its body lights up with the most beautiful colours.



## Repetition in nature

Have you noticed that some shapes and patterns occur again and again in nature? Long ago, people relied on them to try and understand the invisible order of the wilderness. And today, mathematicians can accurately express some of these mysterious patters in mathematical equations.



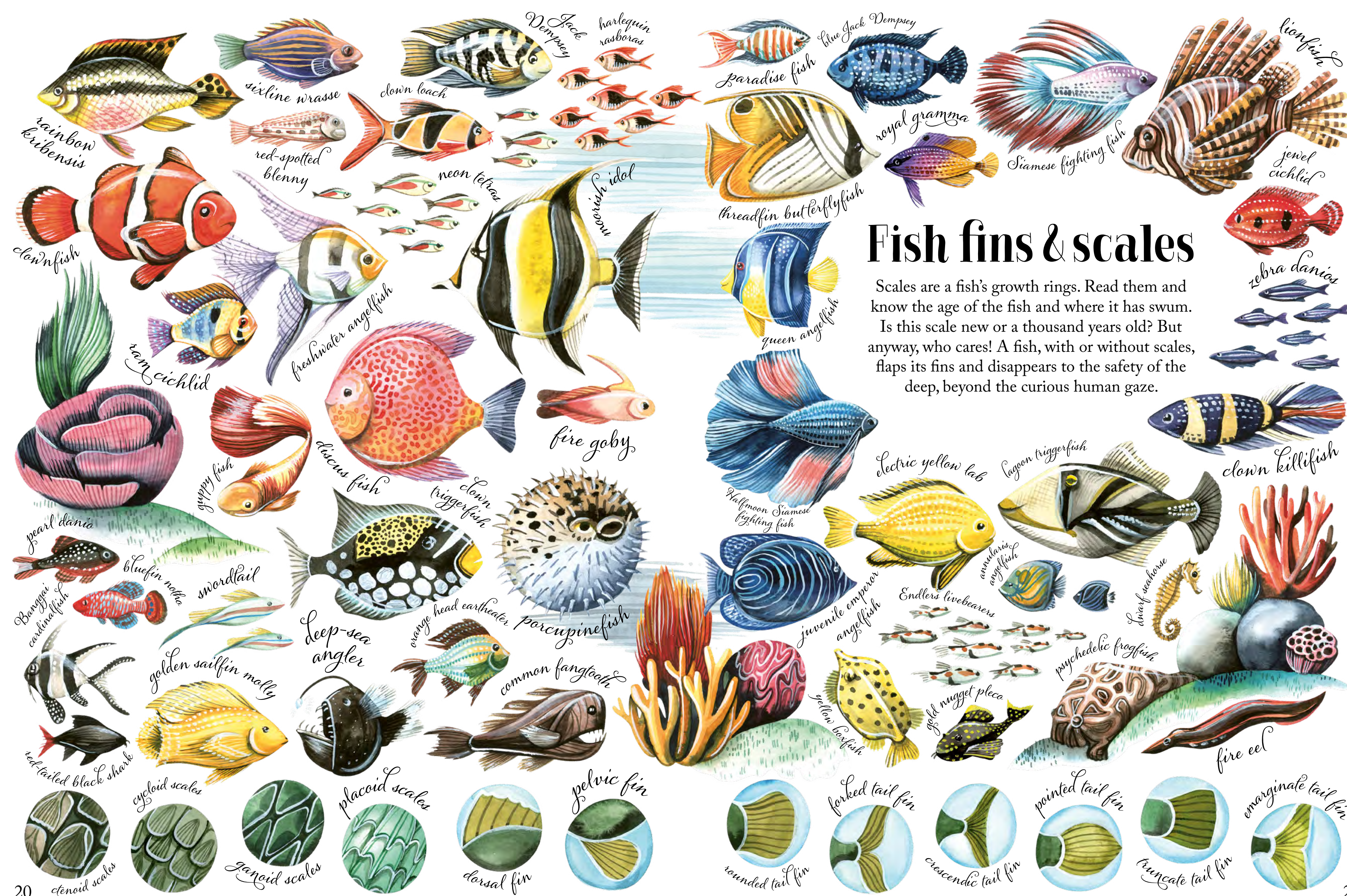




# Leaves

Leaves catch rays of sunshine in their green palms – so that they can grow and live happily. It doesn't matter if they're broad, narrow, pointed or heart-shaped, all fulfill their purpose. When the dry season comes they would rather fall than see their beloved plant go thirsty.

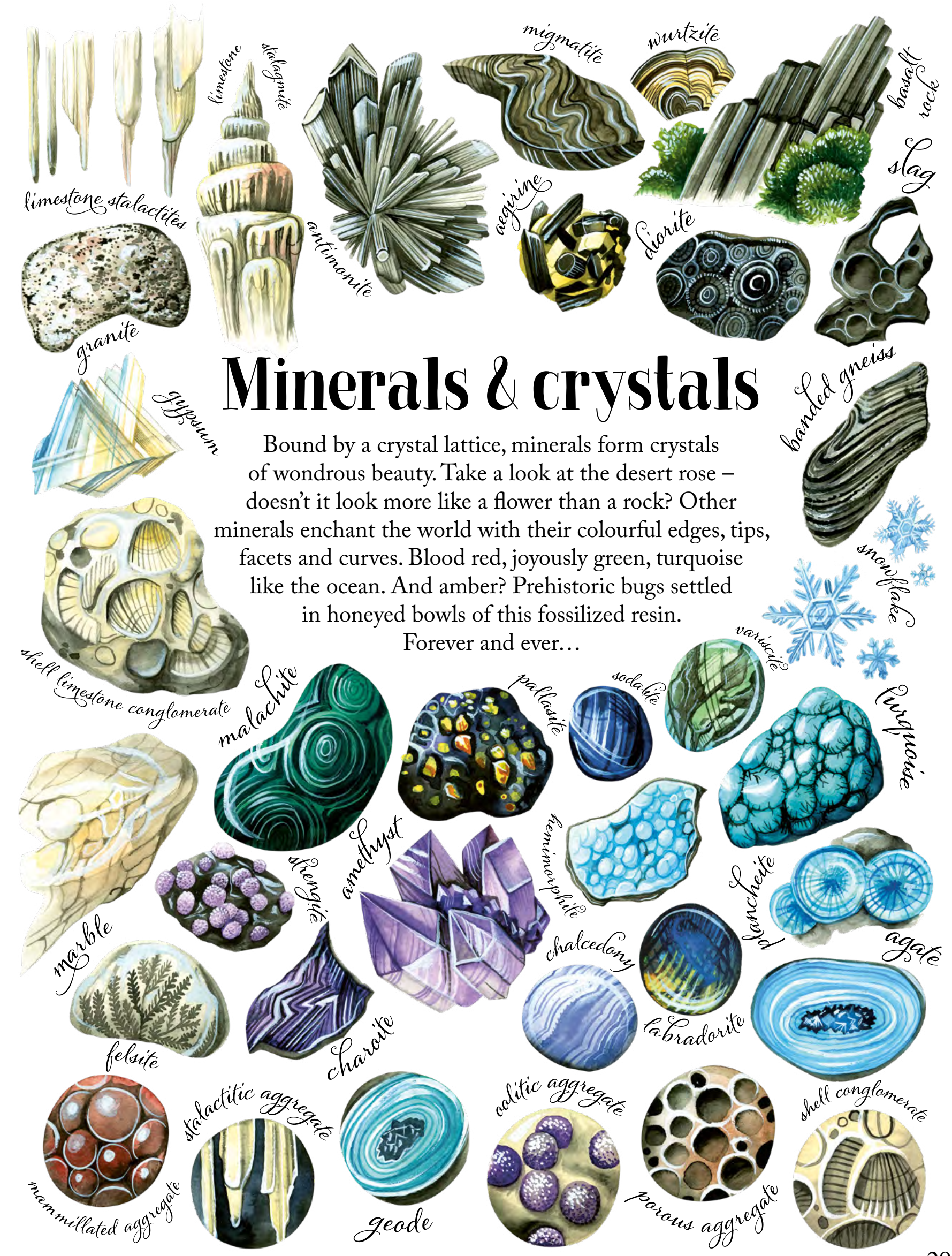
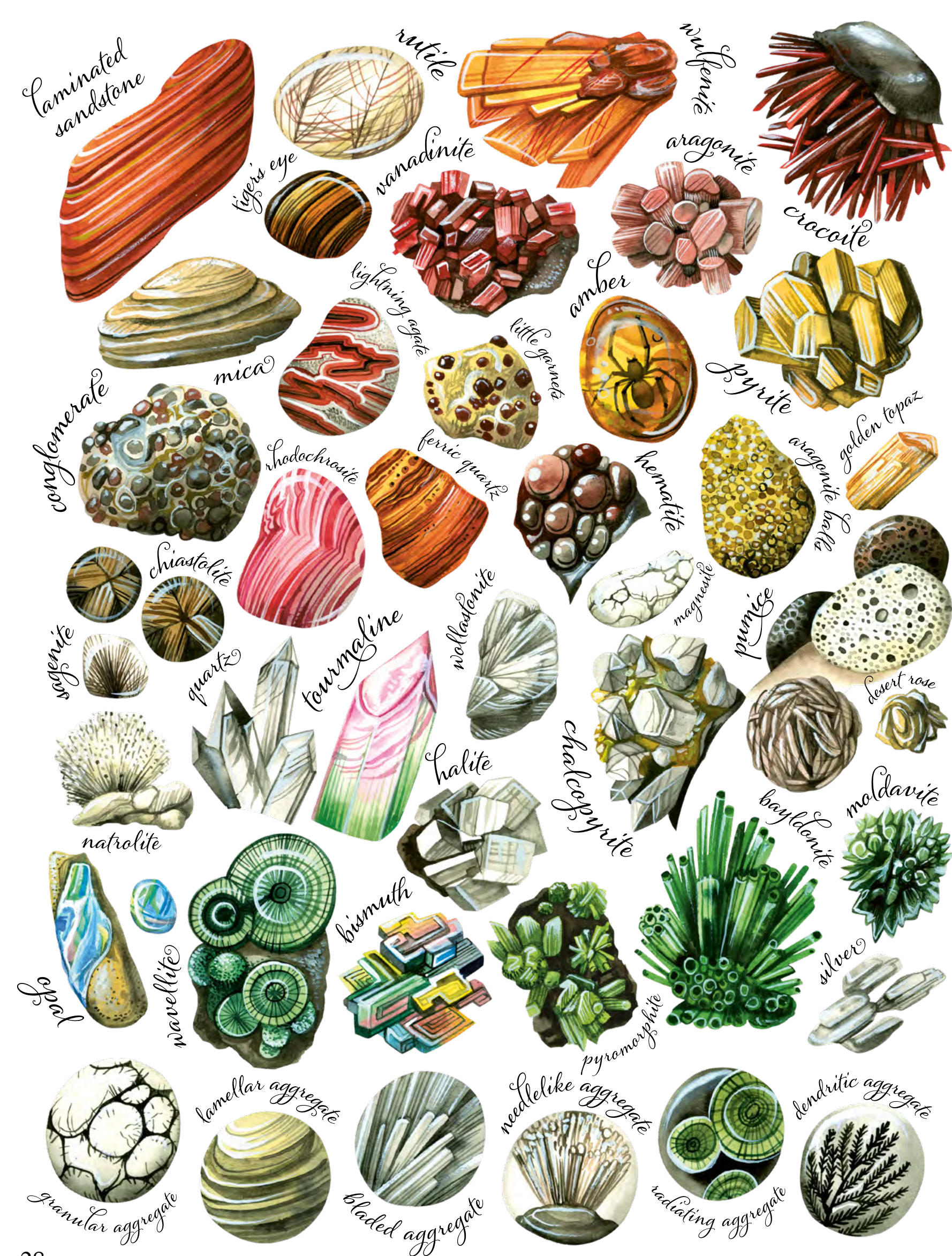




# Fish fins & scales

Scales are a fish's growth rings. Read them and know the age of the fish and where it has swum. Is this scale new or a thousand years old? But anyway, who cares! A fish, with or without scales, flaps its fins and disappears to the safety of the deep, beyond the curious human gaze.





# Minerals & crystals

Bound by a crystal lattice, minerals form crystals of wondrous beauty. Take a look at the desert rose – doesn't it look more like a flower than a rock? Other minerals enchant the world with their colourful edges, tips, facets and curves. Blood red, joyously green, turquoise like the ocean. And amber? Prehistoric bugs settled in honeyed bowls of this fossilized resin.

Forever and ever...





Take a while and look around. You may see a tiny dotted ladybug spread its shards and fly from a dandelion leaf to a nearby garden where heart-shaped strawberries are poking their heads. Oh, what is that? A snail is crawling over a hedgehog's prickly spines, dragging its round spiral shell closer to the strawberries... These are just a few of the many shapes the nature gave to each plant, animal, or mineral. The ground, underground, even the deep dark seas are teeming with waves, dots, stripes, playful spots, curly spirals, or complicated patterns. Even the tiniest ones have a place in nature and a reason to be there. Camouflage patterns help animals blend in with their surroundings, while the more distinct ones serve them during courtship or when spooking an intruder. Which marvellous shapes and patterns can you find around?

