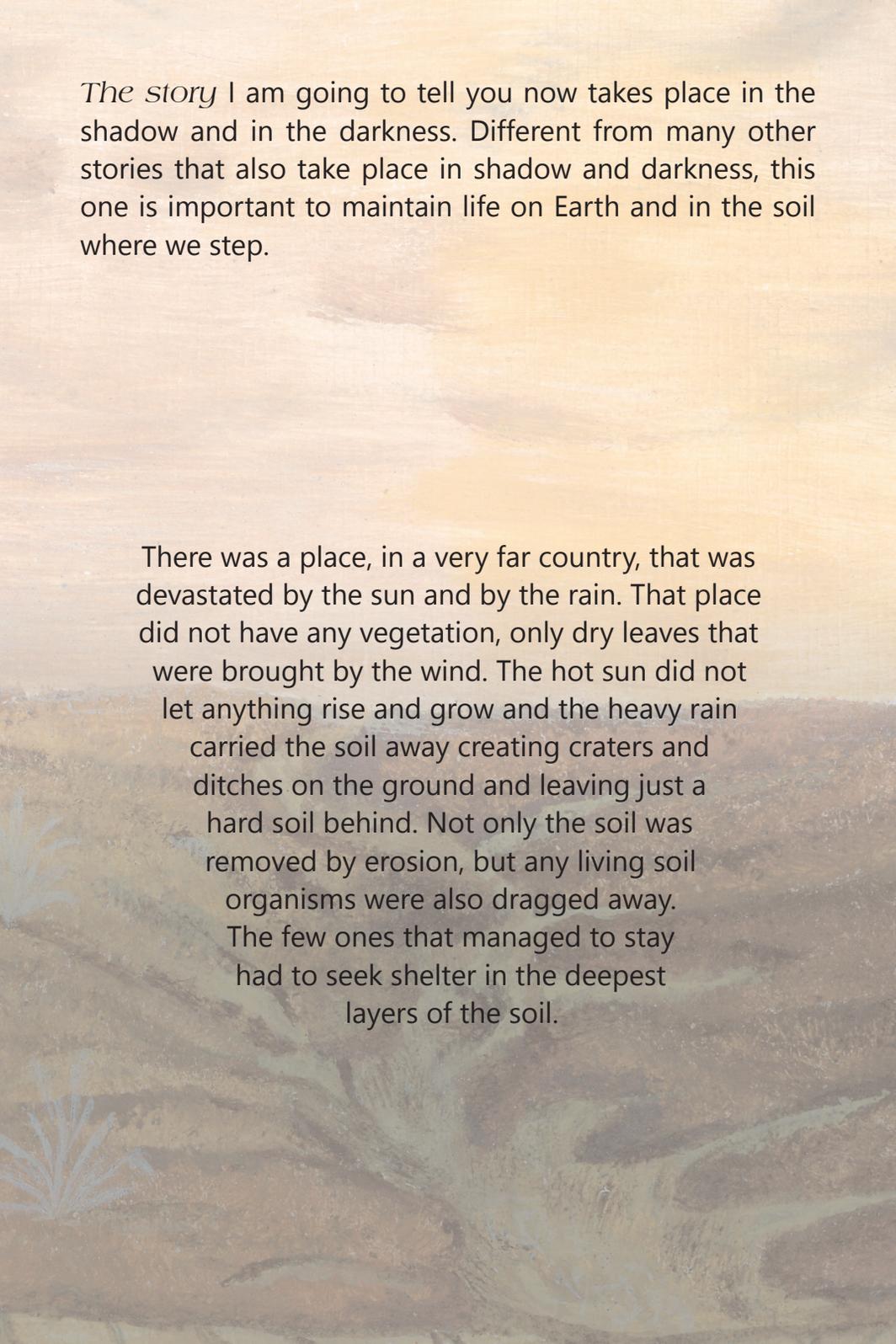


The soil is alive!

All illustrations in this booklet are hand painted and colored
using a variety of subtropical soil pigments.





The story I am going to tell you now takes place in the shadow and in the darkness. Different from many other stories that also take place in shadow and darkness, this one is important to maintain life on Earth and in the soil where we step.

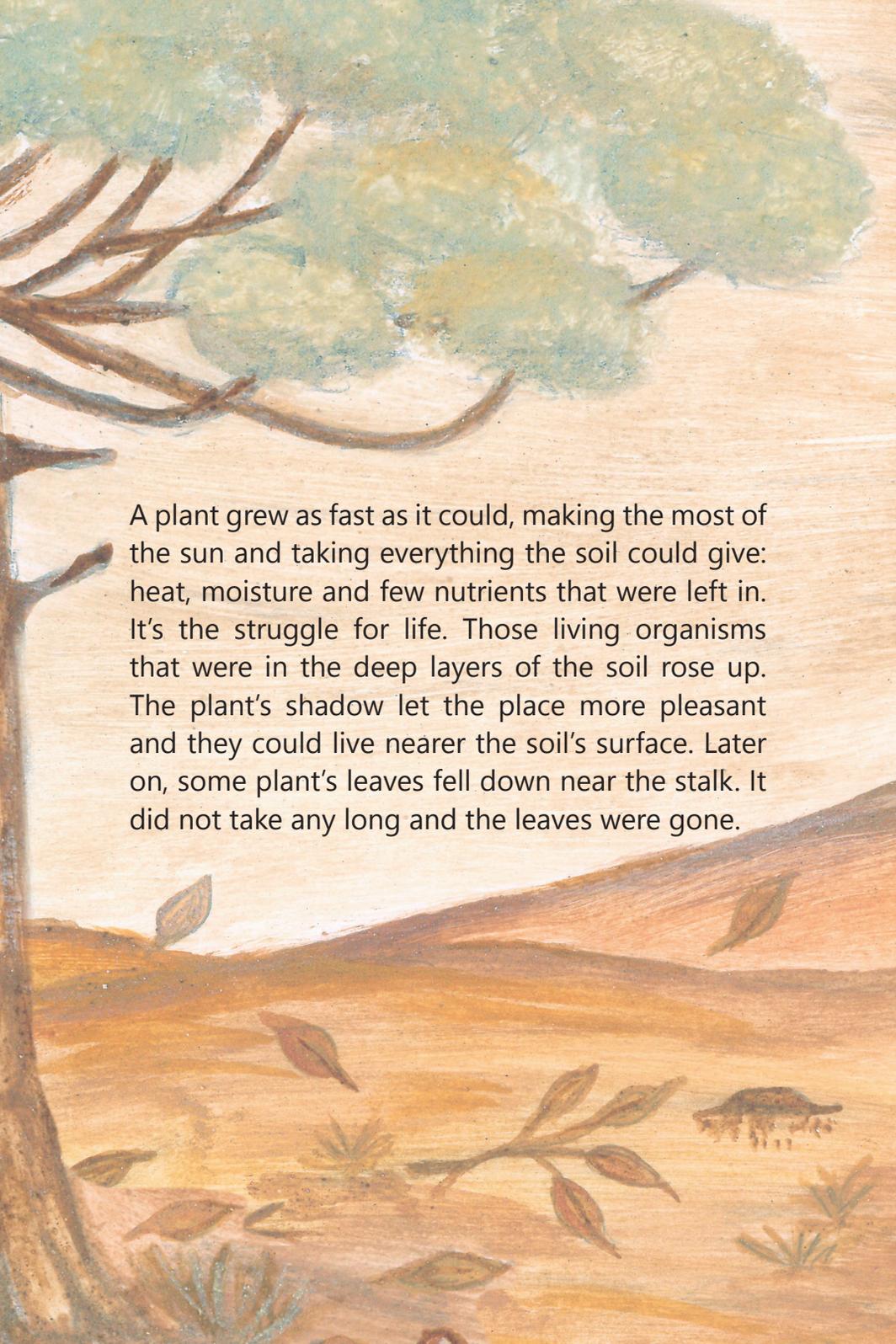
There was a place, in a very far country, that was devastated by the sun and by the rain. That place did not have any vegetation, only dry leaves that were brought by the wind. The hot sun did not let anything rise and grow and the heavy rain carried the soil away creating craters and ditches on the ground and leaving just a hard soil behind. Not only the soil was removed by erosion, but any living soil organisms were also dragged away. The few ones that managed to stay had to seek shelter in the deepest layers of the soil.



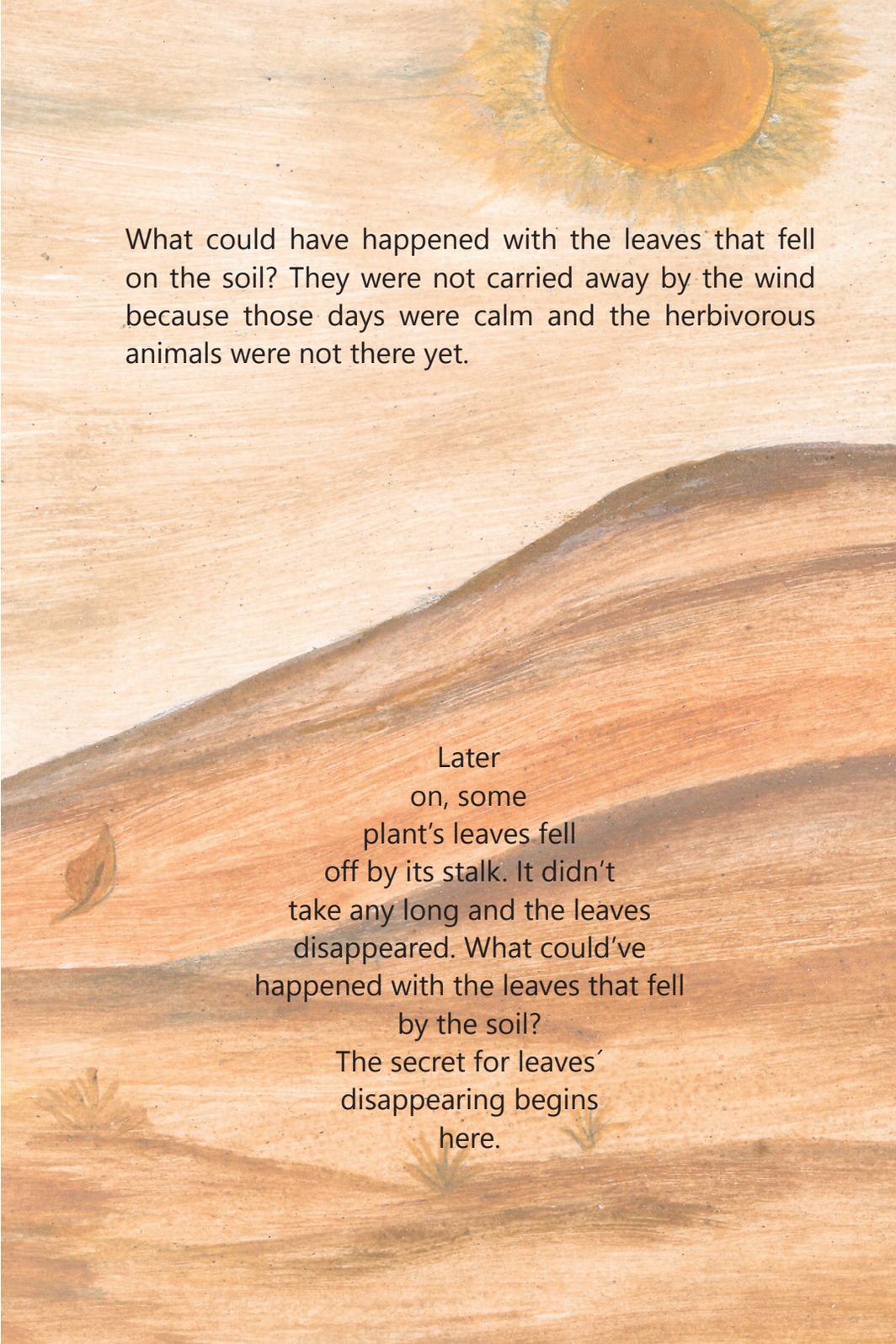
Every morning a bird used to fly over this place. One day he was late and left in a hurry for his daily task with the rest of his breakfast still in his beak. Careless, he let his snack fall on that injured place. It was a seed.

Nothing would have mattered if it didn't have rained calmly few days before. The soil was moist. The seed that had fallen, rolled down and stopped. Feeling the moisture, it wasted no time. Soon it launched its root and released leaves: the seed germinated.





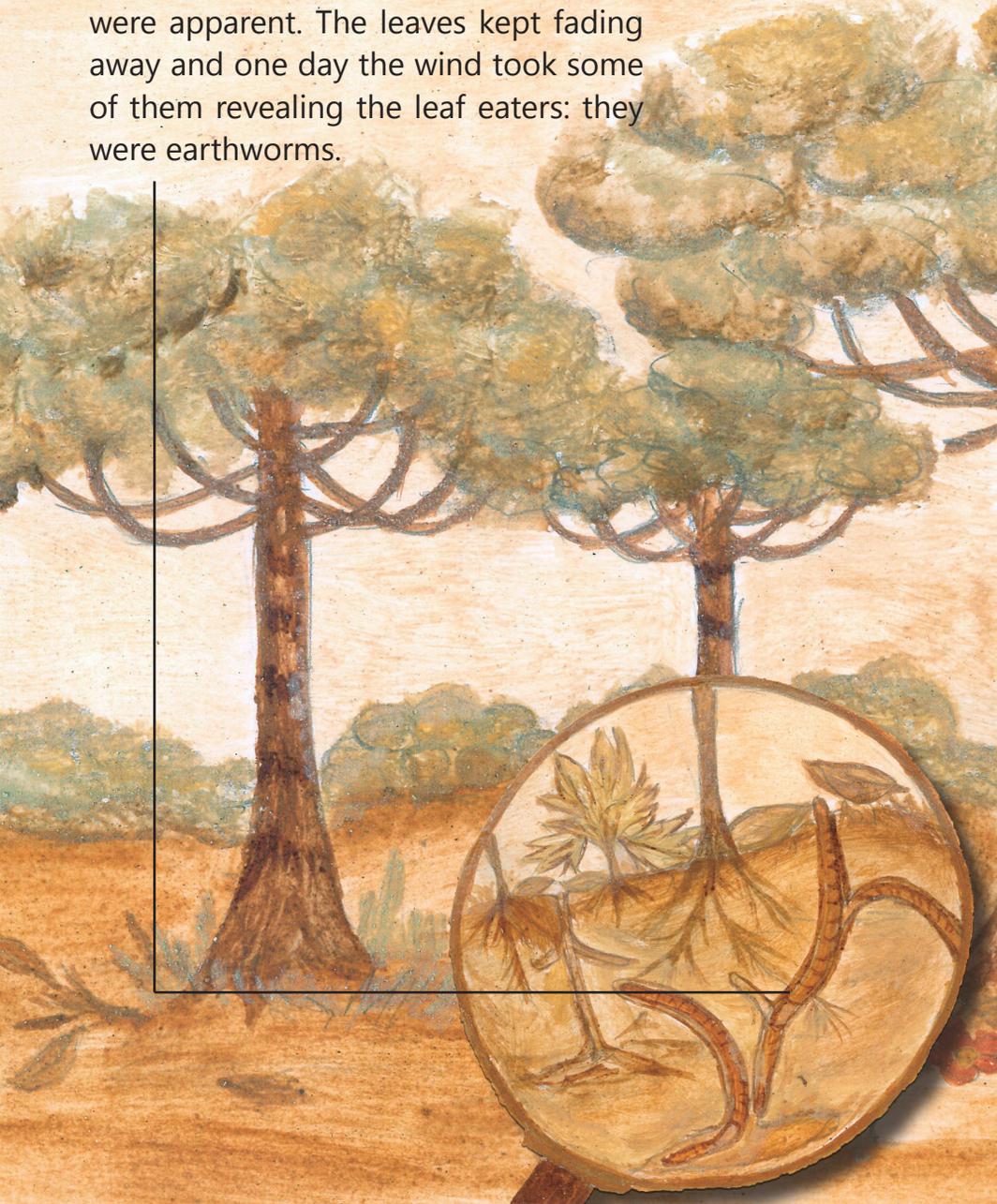
A plant grew as fast as it could, making the most of the sun and taking everything the soil could give: heat, moisture and few nutrients that were left in. It's the struggle for life. Those living organisms that were in the deep layers of the soil rose up. The plant's shadow let the place more pleasant and they could live nearer the soil's surface. Later on, some plant's leaves fell down near the stalk. It did not take any long and the leaves were gone.



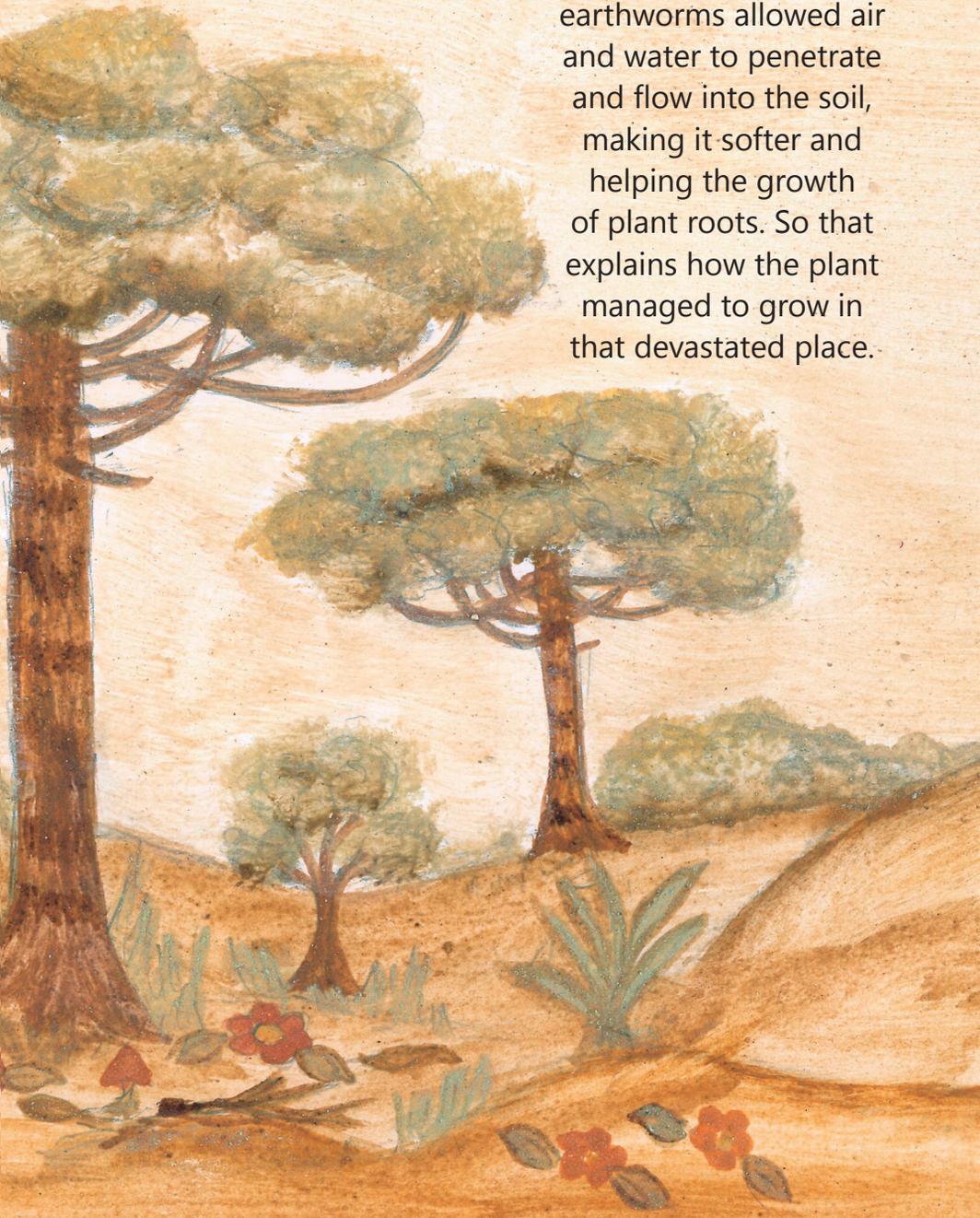
What could have happened with the leaves that fell on the soil? They were not carried away by the wind because those days were calm and the herbivorous animals were not there yet.

Later
on, some
plant's leaves fell
off by its stalk. It didn't
take any long and the leaves
disappeared. What could've
happened with the leaves that fell
by the soil?
The secret for leaves'
disappearing begins
here.

And the plant kept growing until it became an adult, it bloomed and bare fruits. Seedlings grew next to the mother plant. More shadows, more dead leaves, more food and many holes in the soil were apparent. The leaves kept fading away and one day the wind took some of them revealing the leaf eaters: they were earthworms.



Besides eating the leaves, turning them into organic matter, the burrows opened by the earthworms allowed air and water to penetrate and flow into the soil, making it softer and helping the growth of plant roots. So that explains how the plant managed to grow in that devastated place.



There's a very important motto that says: NO ONE DOES ANYTHING ALONE. There was a large amount of leaves on the soil and the earthworms wouldn't be able to eat them all by themselves.

More mysteries to unveil...



To figure out who was helping the earthworms to eat all the dead leaves on the soil, we followed the burrows left by them and entered the ground. As we enter, the soil became moister and darker. It did not get very long for us to find other living soil organisms. Close to the surface we found the living soil organisms that loved moisture and heat, called bacteria, fungi and lichens. These creatures have different shapes and colors and feed, among other things, on leaves. They are also leaf eaters. They turn leaves into simple compounds to be used by plants and other living organisms.

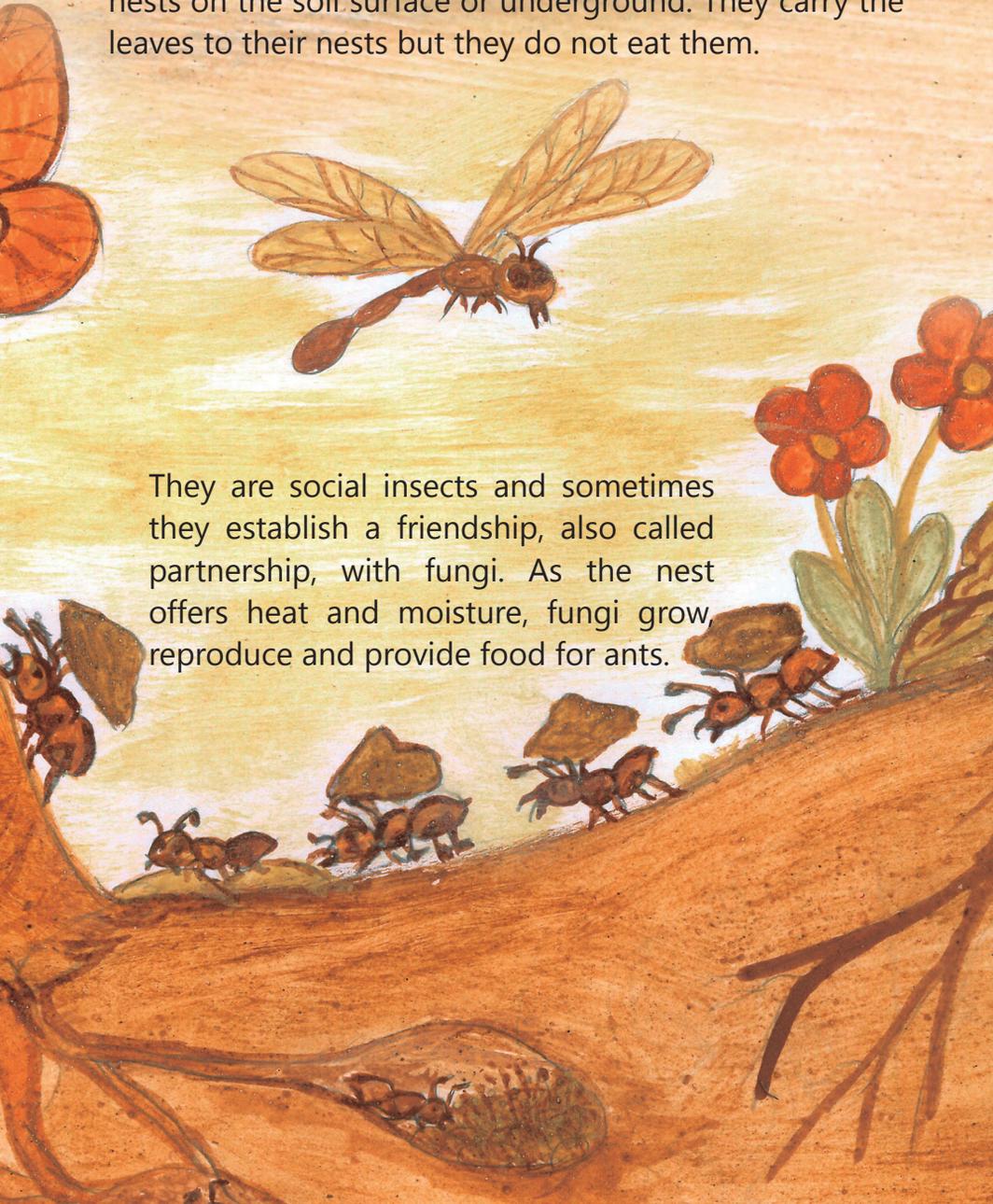


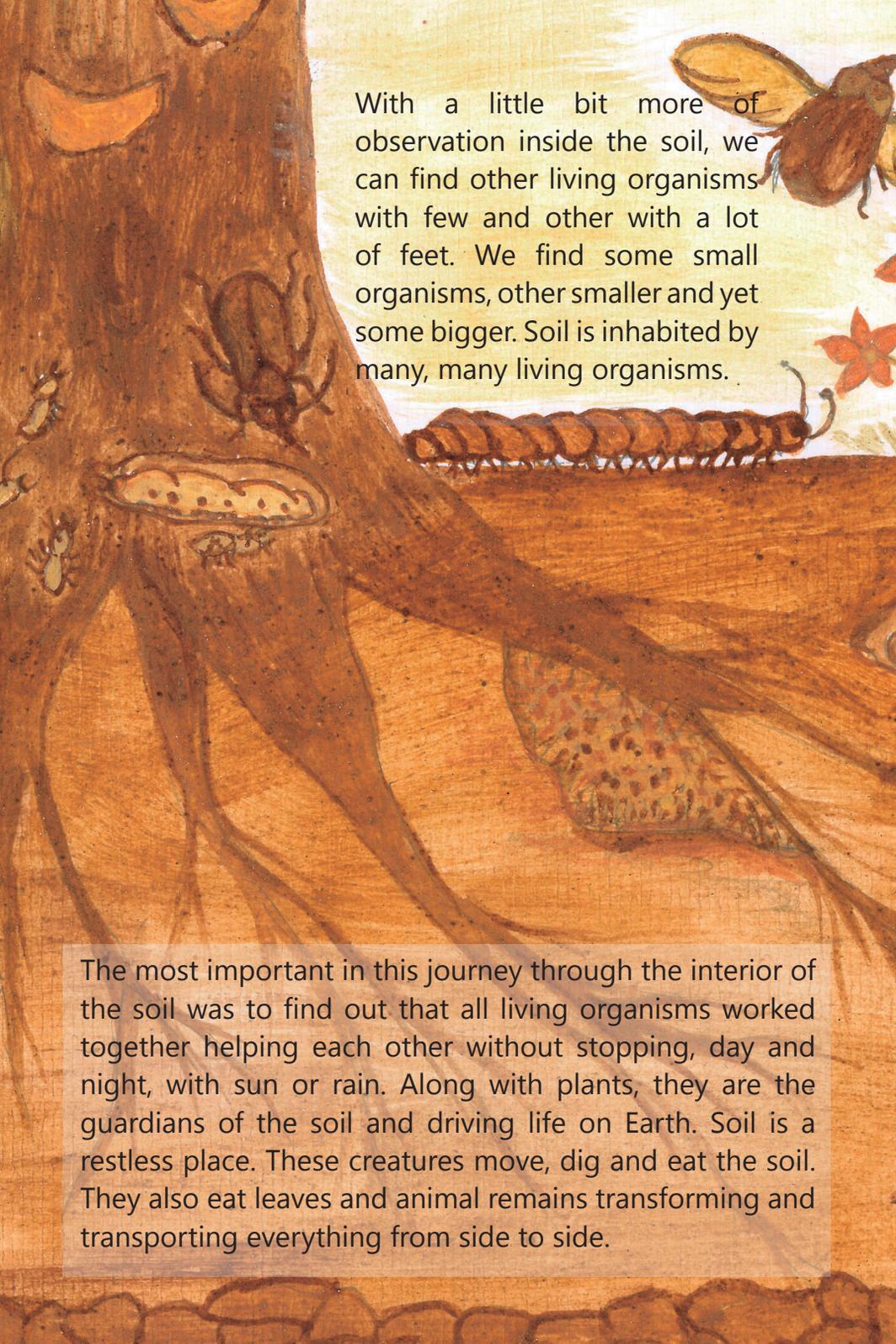
Living alone sometimes is very boring. It's very good to have some company. Thus, some fungi seek company from the roots of some plants.



Following the burrows built by earthworms we also found some living organisms that like leaves, as beetles, ants and mollusks. Others like the termites prefer the hard part of plant as roots, branches and logs. Ants build their nests on the soil surface or underground. They carry the leaves to their nests but they do not eat them.

They are social insects and sometimes they establish a friendship, also called partnership, with fungi. As the nest offers heat and moisture, fungi grow, reproduce and provide food for ants.





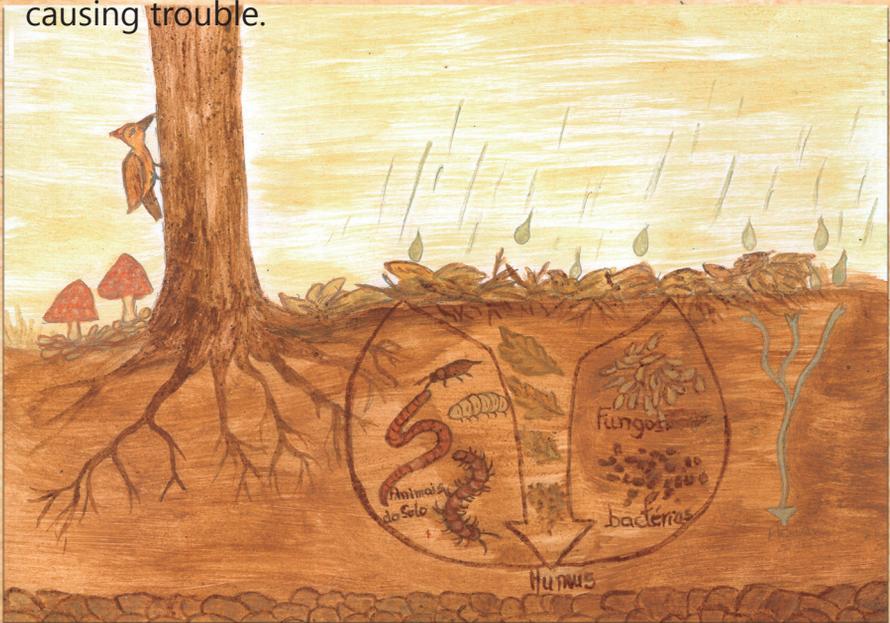
With a little bit more of observation inside the soil, we can find other living organisms with few and other with a lot of feet. We find some small organisms, other smaller and yet some bigger. Soil is inhabited by many, many living organisms.

The most important in this journey through the interior of the soil was to find out that all living organisms worked together helping each other without stopping, day and night, with sun or rain. Along with plants, they are the guardians of the soil and driving life on Earth. Soil is a restless place. These creatures move, dig and eat the soil. They also eat leaves and animal remains transforming and transporting everything from side to side.



Thus, everything is returned to soil in simpler elements that can be absorbed by plant's roots and eaten by organisms that live there. All this work is called nutrients and energy recycling and turns the poor soil into fertile soil. It produces the soil organic matter, helps the soil as a sponge, so water and air can get into the soil, and yet serve as a path for living organisms and animals to live in the soil.

It was possible to see that the soil surface had been transformed and other animals could see that too. All of them were attracted by the fruits of the only plant species in that place. They did not come just to eat, they brought other seeds, which germinated on the fertile and moist soil; so, the process that occurred with the first plant was repeated. Birds came with more seeds that germinated and gave rise to more plants. It was becoming diverse, biodiverse: many species, many lives and many relationships. Biodiversity grew as each new living organism and animal arrived. After a while, seeds of new plant species and other organisms emerged, and they were not brought by any being. They were brought by the wind. Among them, more bacteria, fungi, the orchids, bromeliads and other tree species... increasing the biodiversity of that place. Now, the heavy rain and the hot sun were no longer causing trouble.



In that place, by night, so much happened, but it was at sunrise that a party started... sounds of all kinds echoed in that place, announcing a new day and joy of being there. Plants radiated a brilliant green, but it was in shadow and darkness of their roots that the greatest secret was hidden. It was their occult friends that ran the party. A perfect symphony that seeks a conductor for the party to never end: YOU! For this music not to stop, KEEP SOIL ALIVE, PROTECT SOIL BIODIVERSITY.

If you want to know more about how biodiversity is important to KEEP SOIL ALIVE, PROTECT SOIL BIODIVERSITY see the Global Soil Biodiversity Atlas and follow the Global Soil Biodiversity Initiative (www.globalsoilbiodiversity.org).



The soil
is alive!

