



Aleksandra Mizelińska and Daniel Mizeliński

# WATER

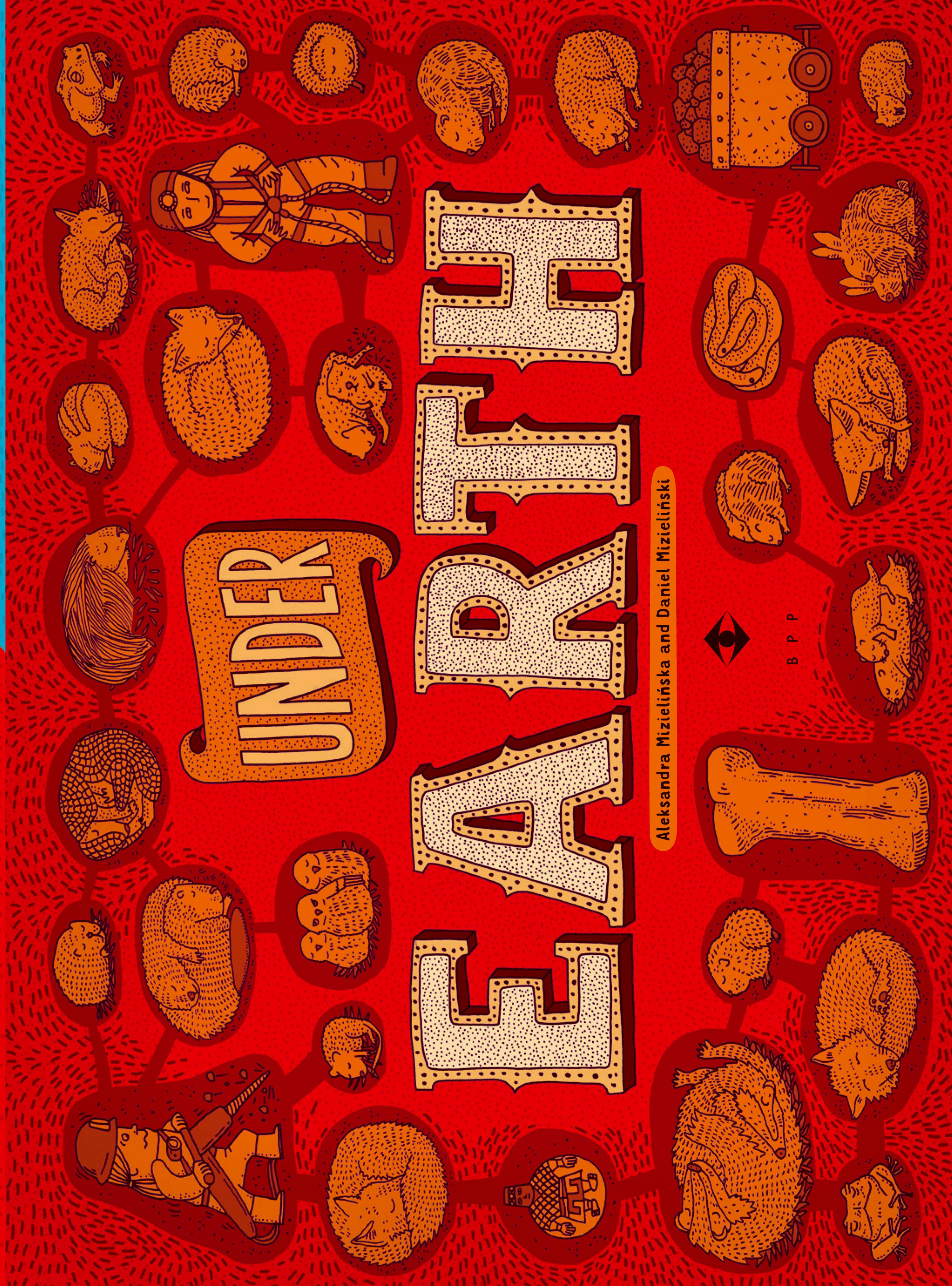
## UNDER



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UNDER EARTH

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# EARTH

## UNDER



B P P



# AN ANTHILL

The heap visible on the surface is just a small section of the anthill. The greater part of it is underground.

Common in Europe, red wood ants build anthills out of sand and pine needles bore underground chambers.

Black garden ants, found in cities, often build their nests entirely underground, without any heap above the surface.

A species of ant called *Messor accretor*, which lives in Japan, dig for seeds, which they sometimes go to depths of 1m.

Ants can also live on trees, inside their stumps, or under stones. Some species do not build nests at all.

Depending on their species, ants feed on insects, other ants, the eggs of dead animals, plants, seeds, nectar or honeydew, a sweet substance secreted by aphids.

Many species gather supplies of food in their anthills.

Some species of ants from South and Central America live on fungi, which they cultivate on answered leaves inside the anthill.

Almost all the ants in the anthill are workers who look after the ant-eggs and pupae, feed the larvae, look for food, defend the anthill, make it bigger and clean it.

1 The queen ant lays eggs continually, while the worker ants take care of her and provide her with food.

The queen is mother of all the ants in the anthill and can live up to 30 years.

There can be only one queen in a single anthill.

life cycle of the ant

2 pupa  
3 adult worker ant  
4 queen  
5 male

The young queens and males have wings, they go on a mating flight, during which the queen is fertilised.

The queens develop from the best nourished larvae.

Soon after, the males die, their wings lose and they seek a site for a new nest, or are taken by the workers to the old anthill.

When a queen founds a new nest, she digs it herself and looks after her eggs until the first workers develop from them and take on those duties.

3 Once the larvae are big enough, they surround themselves with a cocoon and become pupae, from which the adult ants then hatch.

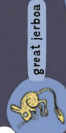
2 The larvae hatch out of the eggs. They have no eyes or limbs, and all they do is eat what the worker ants provide in order to grow.

The worker ants dig new chambers.

In one of the chambers of the anthill, or just outside it, there is a place comparable to a graveyard. All the dead ants are carried there.

# BURROWING ANIMALS

In almost every corner of the globe, a huge number of animals make use of underground hideouts. Burrows guarantee them shelter from predators, from cold or heat, and can also serve as larders. Some species spend their whole lives underground, while others dig out only to dig a hole at birth and raise their young. Some dig complex systems of underground corridors, others make simple, shallow shelters, and some even use the hideouts built by other animals. Here is a selection of burrowing animals from various parts of the world.



great jerboa



bank vole



fat-tailed gerbil



The star-nosed mole has a snout that ends in two star-like growths. It uses them to grab hold of food.



steppe lemming



field mouse



coonua



water vole



giant burrowing frog



tuco-tuco



pale kangaroo mouse



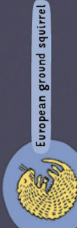
kingfisher



common degu



great gerbil



European ground squirrel



meerkat



burrowing owl



gopher tortoise



The eyes of the greater mole-rat are covered with skin. It uses its incisors to bore corridors.



gopher



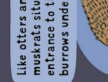
Atlantic puffin



mountain beaver



fennec fox



Like otters and beavers, muskrats situate the entrance to their burrows underwater.



large bamboo rat



weasel



Prairie dogs use their beaks and feet to dig large burrows in which they lay their eggs.



alpine marmot



Magellanic penguins dig a hole at the tip of South America to make their nests in burrows or under bushes.



The African crested porcupine collects bones for its burrow. It acts in its burrow such as stones or bits of wood. It gnaws them to trim its ever-growing incisors.



common rabbit



South African springhare



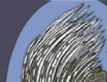
European otter



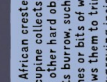
The platypus, a venomous mammal from eastern Australia, digs its burrow on the banks of rivers and streams.



Lovoncus ficalori is a burrowing snake from Central America.



nine-banded armadillo



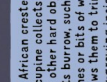
Tasmanian wombat



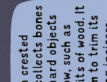
European beaver



warthog



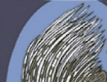
coyote



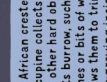
Beavers live in burrows or lodges, which are shelters made of branches and silt.



Eurasian beaver



Tasmanian wombat



warthog

## the mole

Moles spend most of their life underground. They live alone and do not take care of their moles on their territory.

Mole tunnels can be hundreds of metres long.

A nest lined with leaves and dry grass is the mole's dormitory, and is also where the female raises her young.

winter dormitory

larder

Moles paralyse worms by biting off part of their heads, and then store them in the larder.

Moles have poor vision, but excellent hearing and a superb sense of smell.

Moles live on earthworms and grubs.

In winter moles use deeper tunnels.

As a result, they always have a supply of fresh food that cannot escape from them.



-0.7 m

## the naked mole-rat

Naked mole-rats live in eastern Africa.

They feed on tubers and roots.

Loose skin

helps them to burrow in the tight tunnels that they bore with their prominent incisors.

Naked mole-rats can live for up to 30 years, which is a lot longer than most mammals. In addition, they hardly appear to age at all, never suffer from cancer, cannot feel some kinds of pain and cope superbly with the limited oxygen in the burrow.

They form colonies that live in extensive systems of burrows. They almost never come to the surface.

Only one female in the colony (the queen) and a small number of males reproduce. The rest of mole-rats are sterile. They mate for life, defend it, and obtain food.

nest

Colonies can contain from a dozen to almost three hundred individuals.

Burrows can be from 1m to over 2m underground, and corridors may be several kilometres long.

toilet

These characteristics fascinate scientists, who study them in order to find answers to the most important questions in medicine today.

-1 m

## the prairie dog

Prairie dogs live on the prairies of North America.

Prairie dogs warn each other of danger by emitting special squeaks. In this way they are able to detect when a predator is approaching, how rapidly, and how far away it is.

A prairie dog emits a sound with its hind paws and lets out a squeak, and then in response others in the vicinity do the same. This is their way of making sure that all the group are on the alert.

Prairie dogs gather grass to line their nests.

They live in colonies of hundreds, sometimes even thousands of animals.

The colonies are like huge estates, divided into districts and cities. Each of these estates – or systems of connecting burrows – is occupied by a single family.

The family usually consists of one male, several females and their young.

One of the chambers in the burrow is a designated toilet.

The largest colony of prairie dogs was identified more than 100 years ago in the state of Texas. It extended over an area of 65,000m<sup>2</sup>, which is as big as Lithuania, and it may have included as many as 400 million animals.

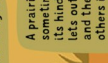
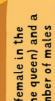
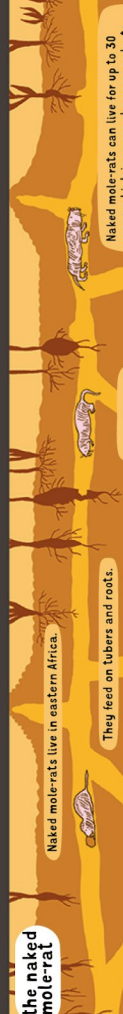
The young are born underground, and only get to the surface a few weeks later.

nest

Prairie dog burrows reach depths of 2–3m underground.

Prairie dogs feed on leaves, stalks, grass roots, and sometimes on insects too.

-2 m



## the badger

Small pits located near the sett are used to tell other animals about the presence of badgers and the borders of their territory.

Badgers are omnivores. They eat worms, insects, small animals, plants and fruits.

Badger setts can be elaborate, with long corridors and chambers.

Several badger families can live in a single sett; it is usually extended from generation to generation.

bedroom

badger tracks

Badgers line their diggings with leaves and grass so they will not have to sleep on the cold, damp earth.

The bedding is often changed, and sometimes the badgers also carry it out to the surface to air it. This is their way of taking care of hygiene.

Badgers hibernate.

Badger setts are on average from 1–2m deep.

The sett is kept immaculately clean. The animals make sure there are no food remains or faeces inside it, and carry all waste matter outside.

Badgers are nocturnal animals. They spend all day in the sett and at night they go out in search of food.

-1.5m

## the red fox

main entrance into the den

Foxes hunt at dawn, at dusk, and during the night.

They are active all year-round and do not hibernate.

fox tracks



Foxes do not dig large, complicated dens. For most of the year they dig only one.

The sett is built in hidden places on the ground surface and shelter from bad weather in shallow burrows.

They only seek a deeper safer hideout when they are going to give birth or when they are going to give birth to their own or take advantage of other animals' unused burrows, such as badger setts or rabbit warrens. A fox will sometimes move in with a badger too, and then each animal occupies a different chamber.

They mainly feed on mice and other rodents, but they also eat frogs, birds, insects, earthworms, and fruit.

They avoid eating shrews and moles because these creatures secrete stinky substances that taste unbearable to most predators.

If foxes hunt more than they can eat, they save the extra food for later. That is why they hunt even when they are full.

Burrows have an emergency exit that is used in case of danger.

Fox cubs are born blind and deaf. At birth they do not look like their parents, but are grey, short, round-plaits, they are unable to walk, and they make it easier to suck their mother's milk.

After six weeks their fur becomes red.

food stores

Fox dens can extend to more than 2m underground.

-2m