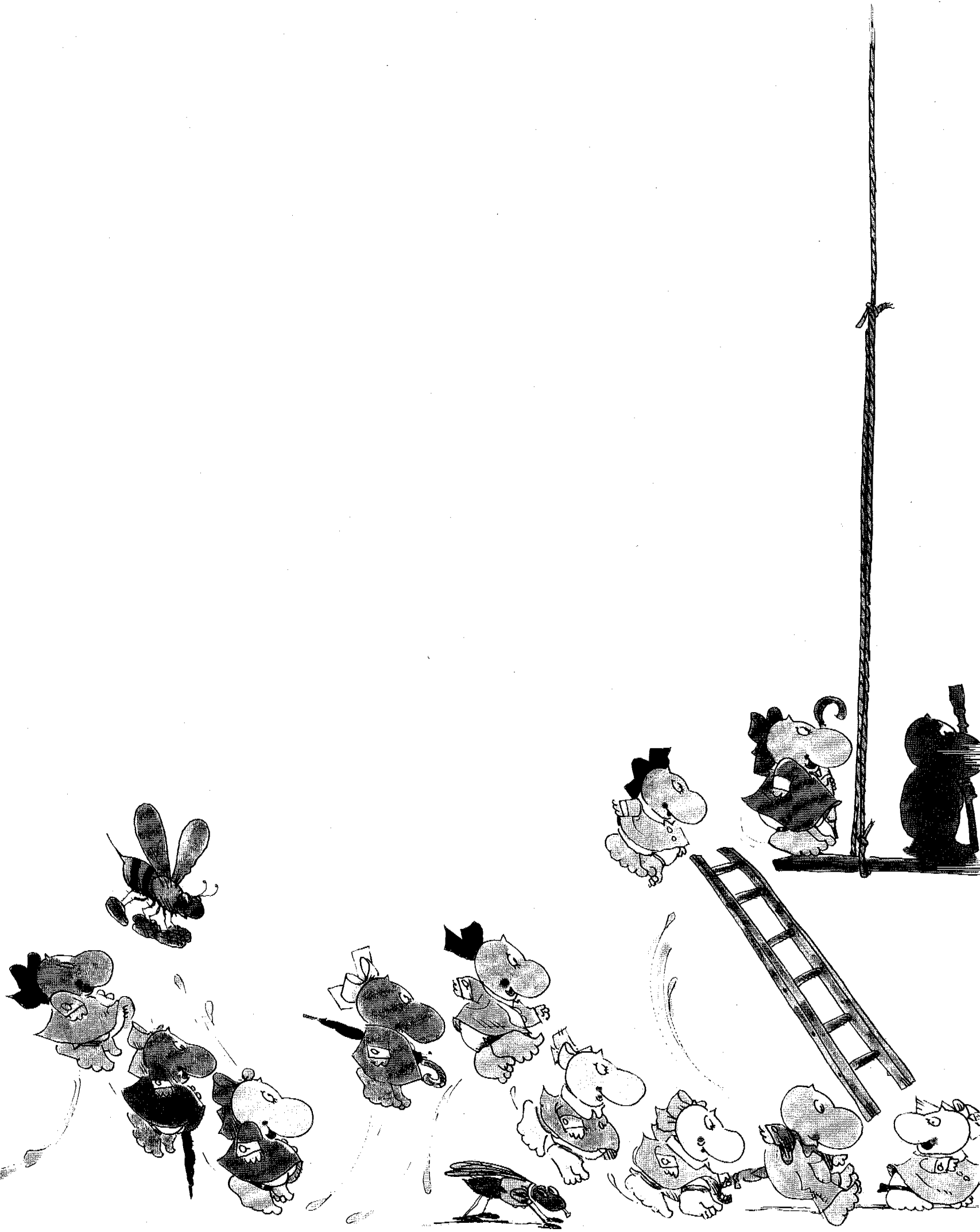
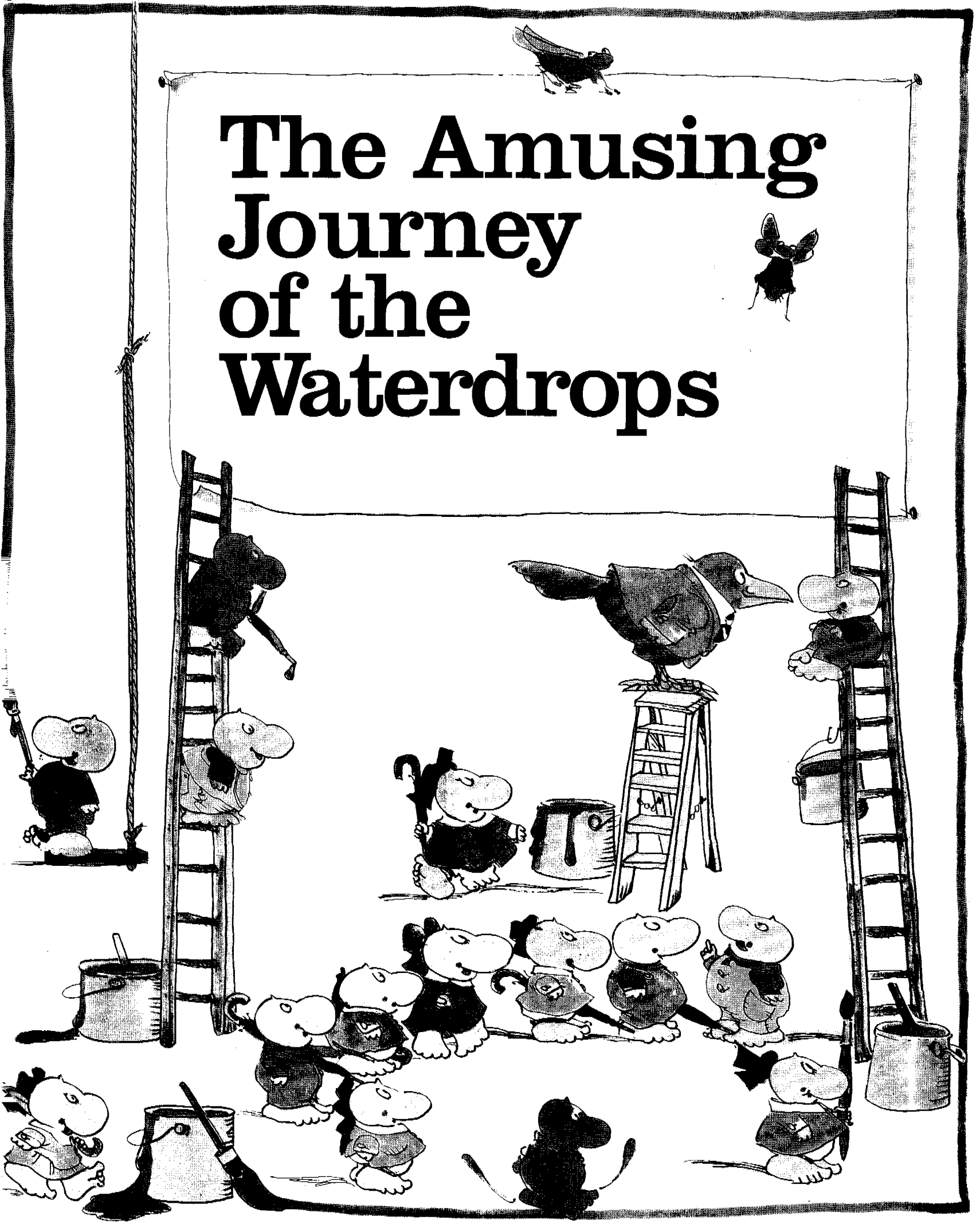


The Amusing Journey of the Waterdrops

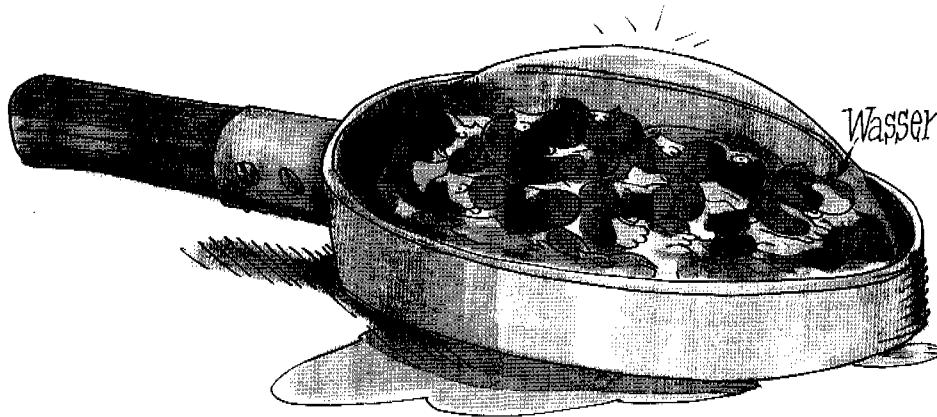




The Amusing Journey of the Waterdrops



The Waterdrops Start their Journey

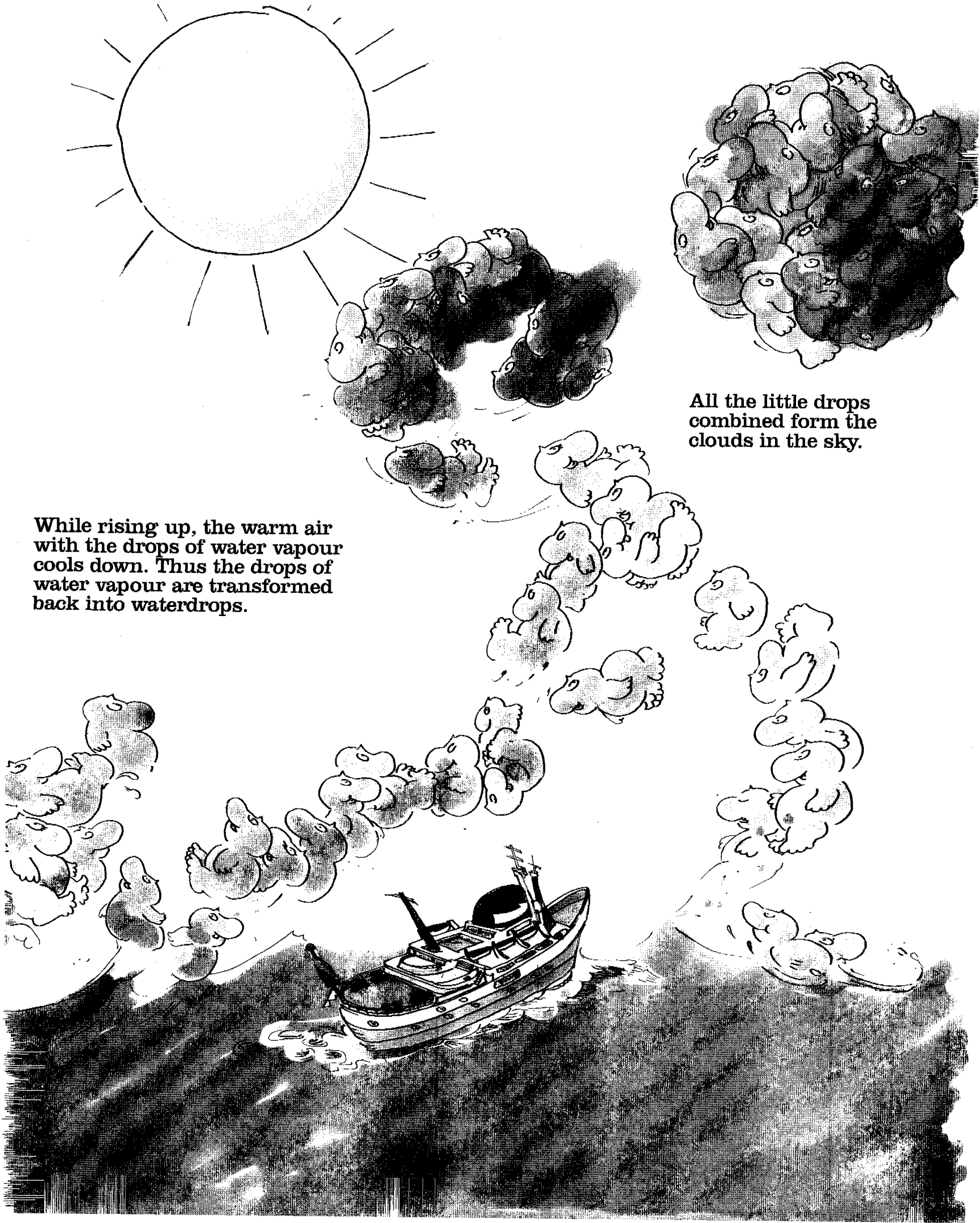


Wasserdampftropfchen

drops of water vapour

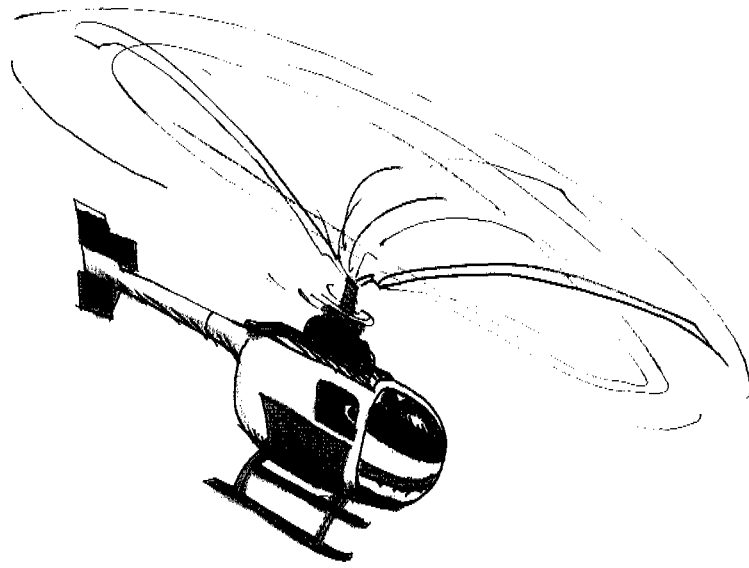
Water consists of very many tiny, single waterdrops. During sunshine the surface of the water warms up. Thus some waterdrops separate themselves from the rest of the water and rise up into the sky as minute, invisible drops of water vapour. This is called evaporation.



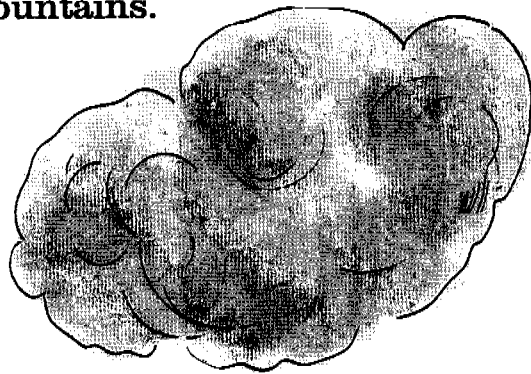
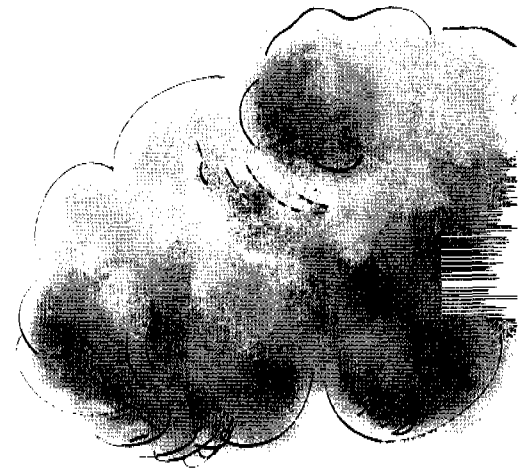


While rising up, the warm air with the drops of water vapour cools down. Thus the drops of water vapour are transformed back into waterdrops.

All the little drops combined form the clouds in the sky.



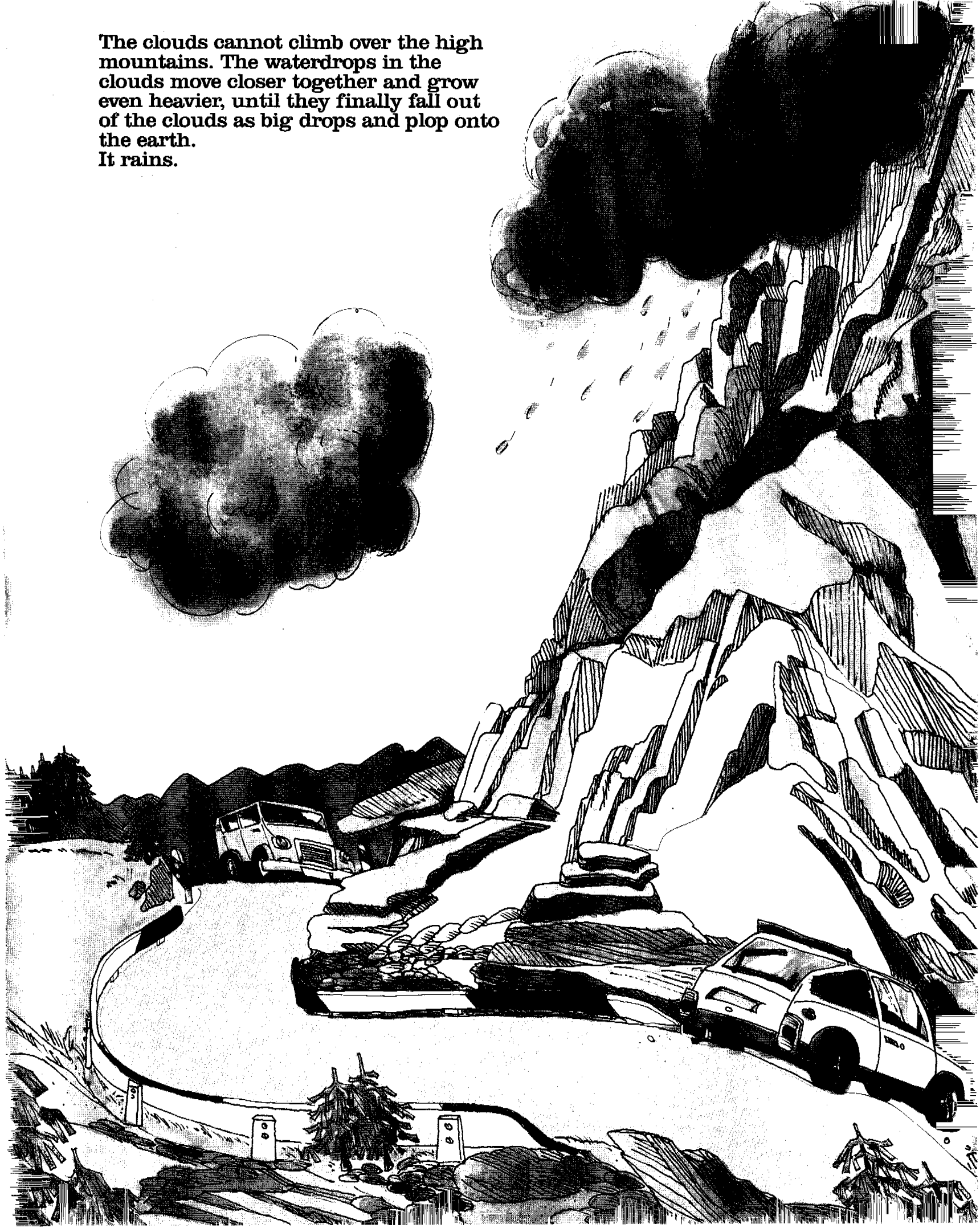
**The clouds grow darker and darker,
and become heavier and heavier.**



**The wind blows the clouds from the sea
across the land to the mountains.**



The clouds cannot climb over the high mountains. The waterdrops in the clouds move closer together and grow even heavier, until they finally fall out of the clouds as big drops and plop onto the earth. It rains.





The waterdrops fall onto flowers and animals, onto bushes and trees, onto cars and streets and onto the roofs.



From the tiles of the roof the waterdrops glide into the gutter. Dirt and dust get stuck to them.

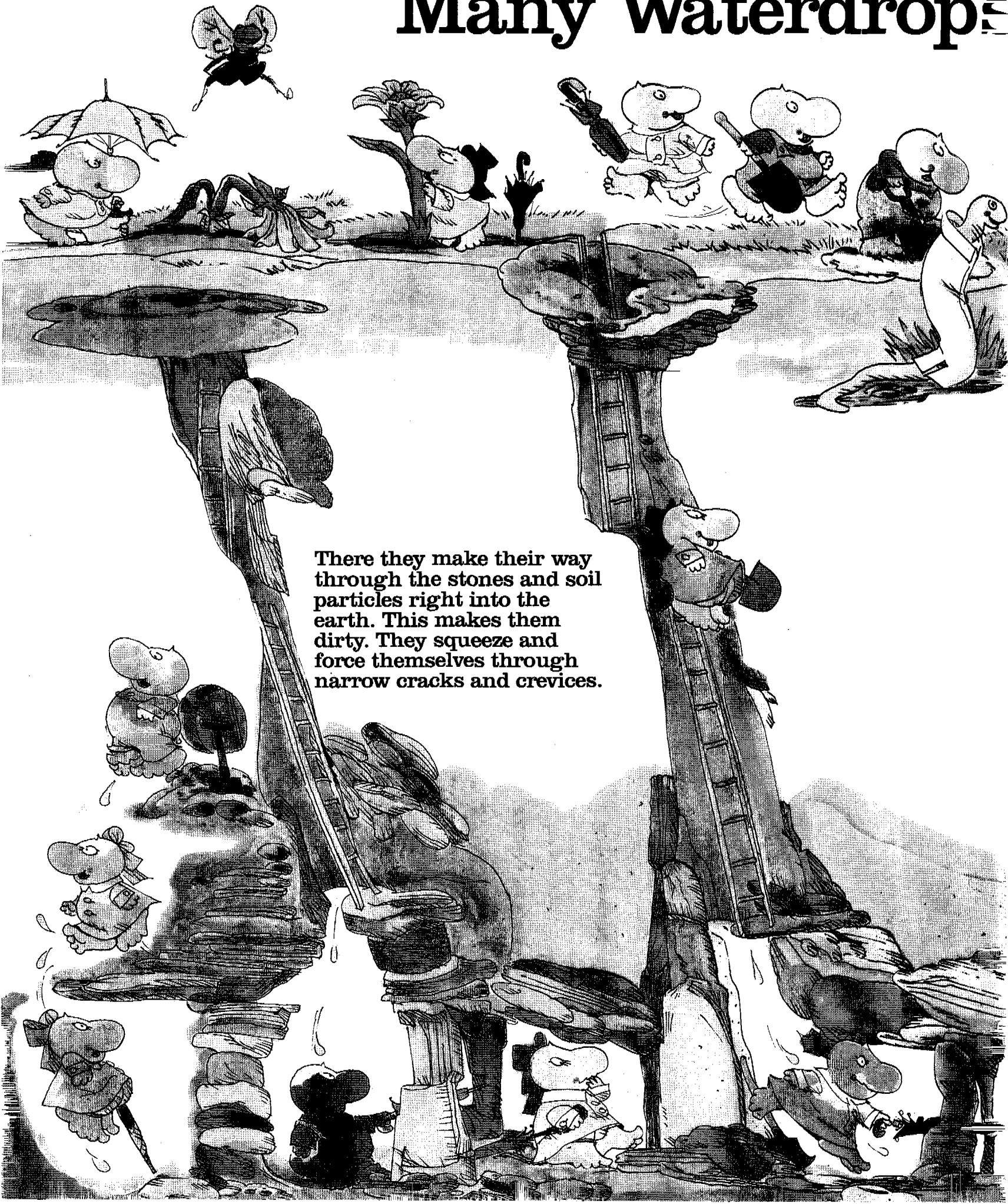
At the end of the gutter the waterdrops tumble through the drainpipe into the canalization system underground.



TRÖPFCHEN
NACH
REGENSTADT

LITTLE DROP
TO
RAINTOWN

Many Waterdrops

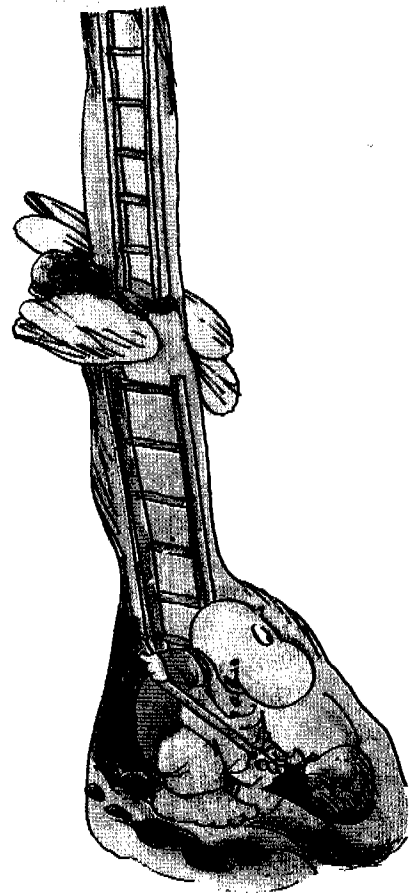


There they make their way through the stones and soil particles right into the earth. This makes them dirty. They squeeze and force themselves through narrow cracks and crevices.

also Fall onto the Earth



They bounce themselves against stones and little grains of sand, thereby rubbing the dirt off again. After only a short journey under the earth, the waterdrops become clean again.

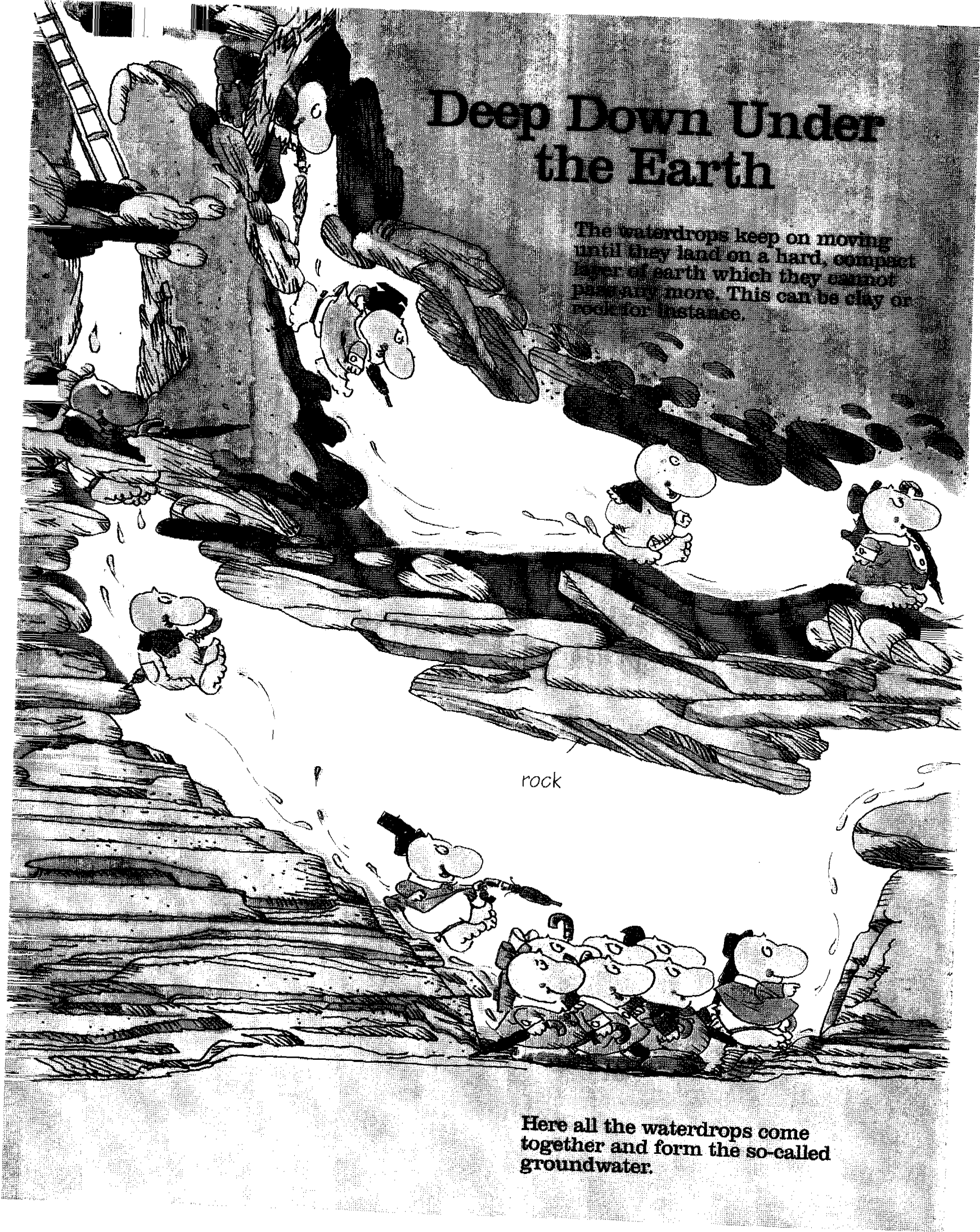


Deep Down Under the Earth

The waterdrops keep on moving until they land on a hard, compact layer of earth which they cannot pass any more. This can be clay or rock for instance.

rock

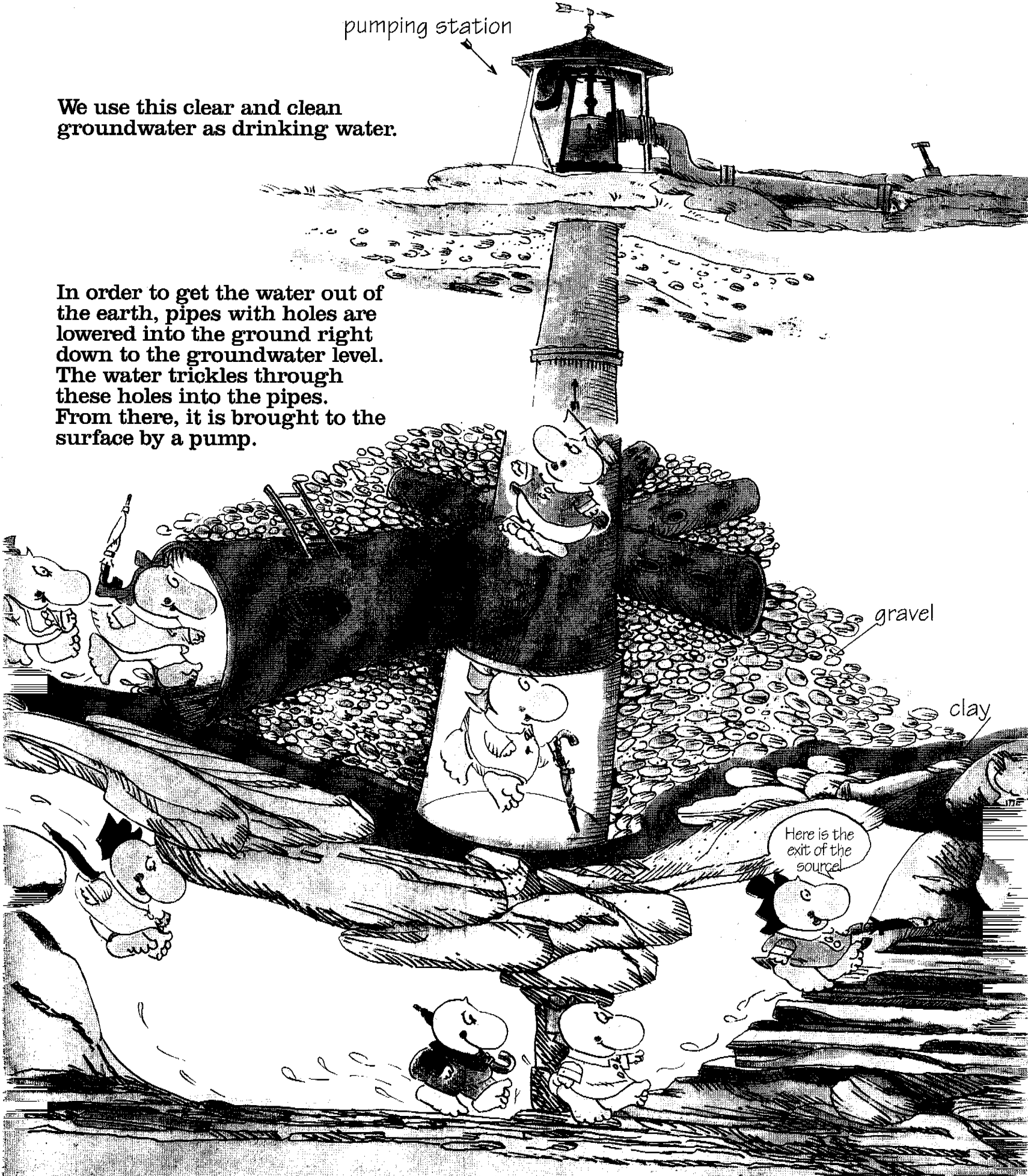
Here all the waterdrops come together and form the so-called groundwater.



pumping station

We use this clear and clean groundwater as drinking water.

In order to get the water out of the earth, pipes with holes are lowered into the ground right down to the groundwater level. The water trickles through these holes into the pipes. From there, it is brought to the surface by a pump.



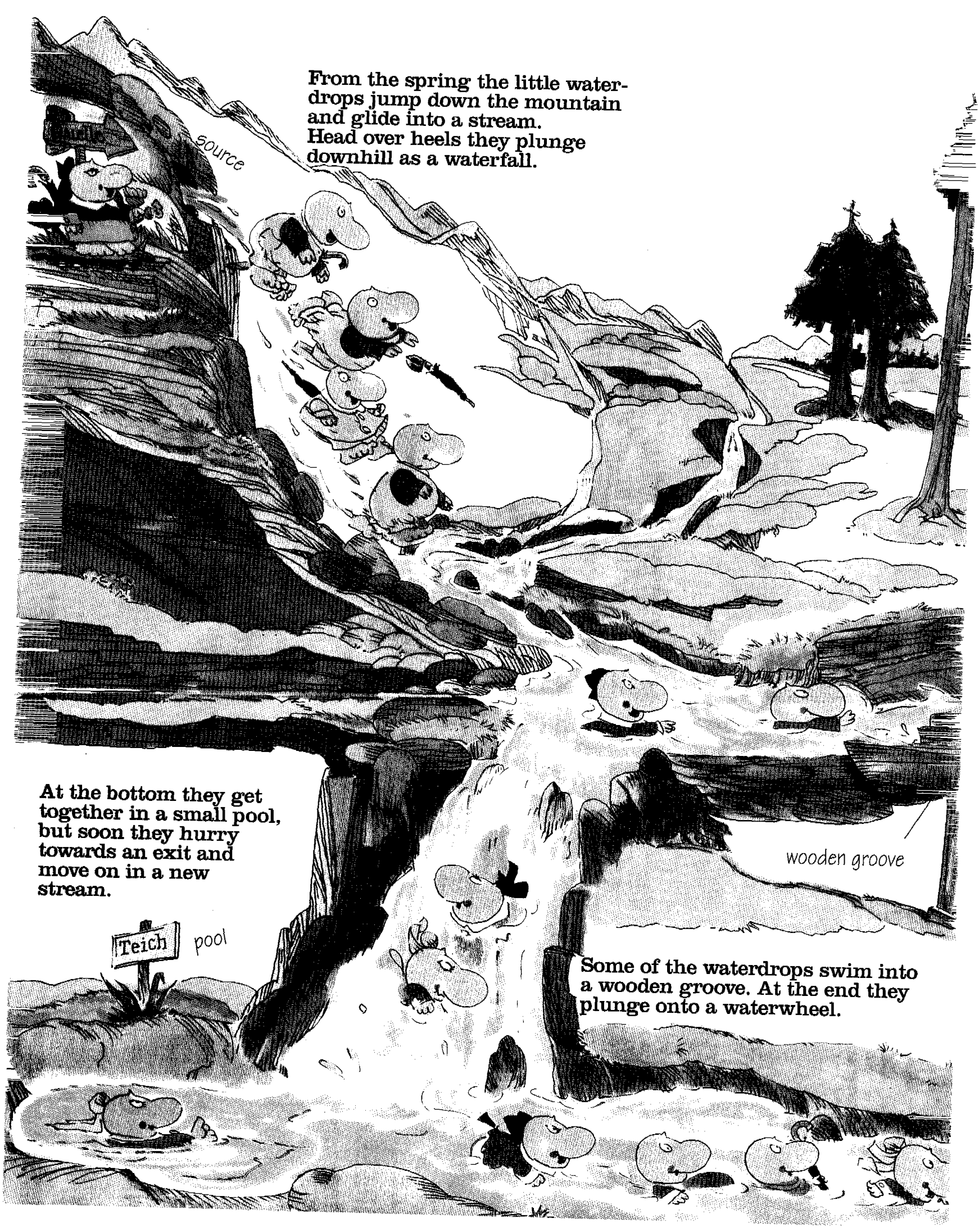
gravel

clay

Here is the exit of the source!

Here the waterdrops wander further downwards. But they are very slow, because again and again they are stopped by

smaller and larger stones. On reaching a rock crevice they pop out into daylight again. This spot is called a spring or a source.

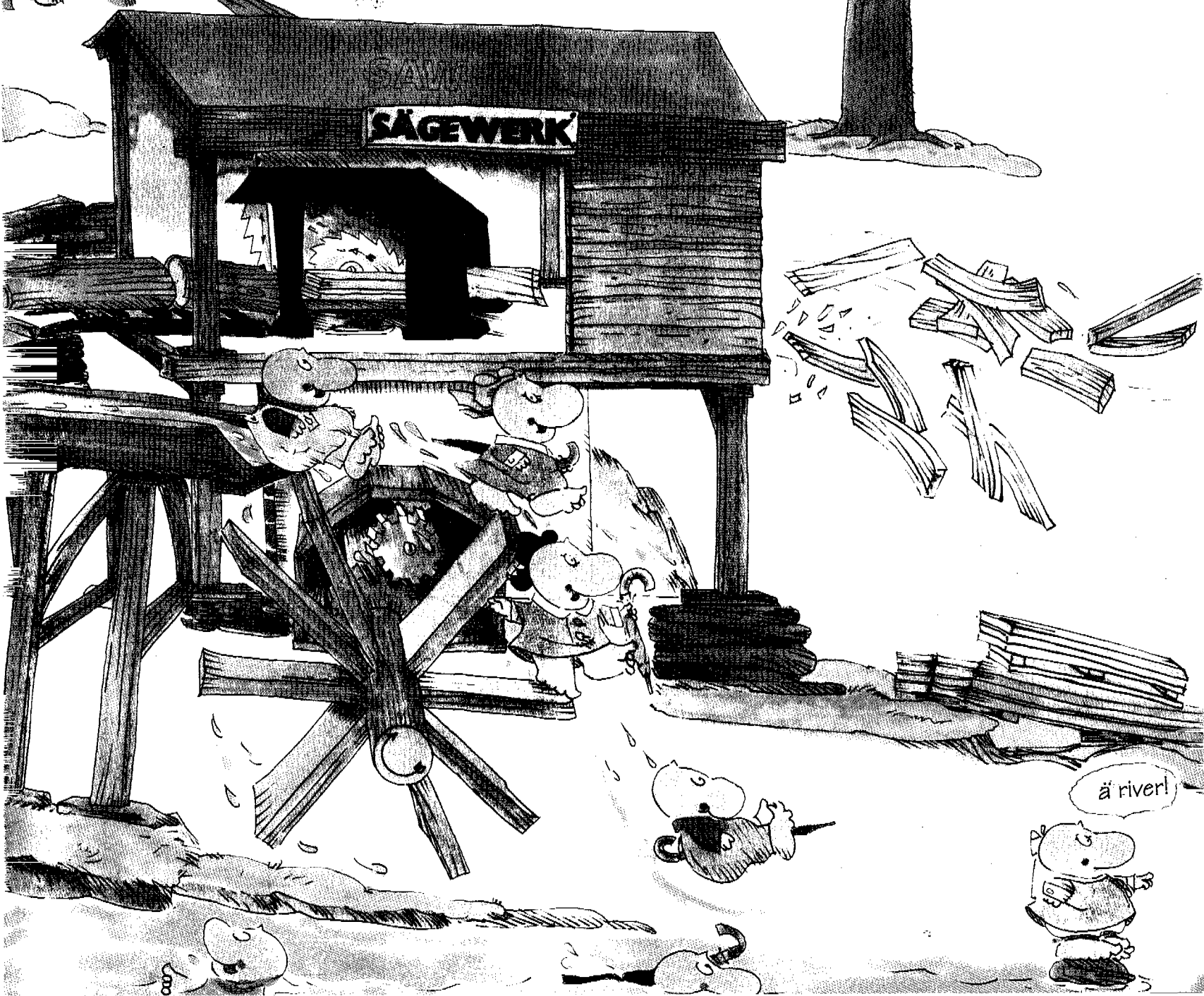


From the spring the little water-drops jump down the mountain and glide into a stream. Head over heels they plunge downhill as a waterfall.

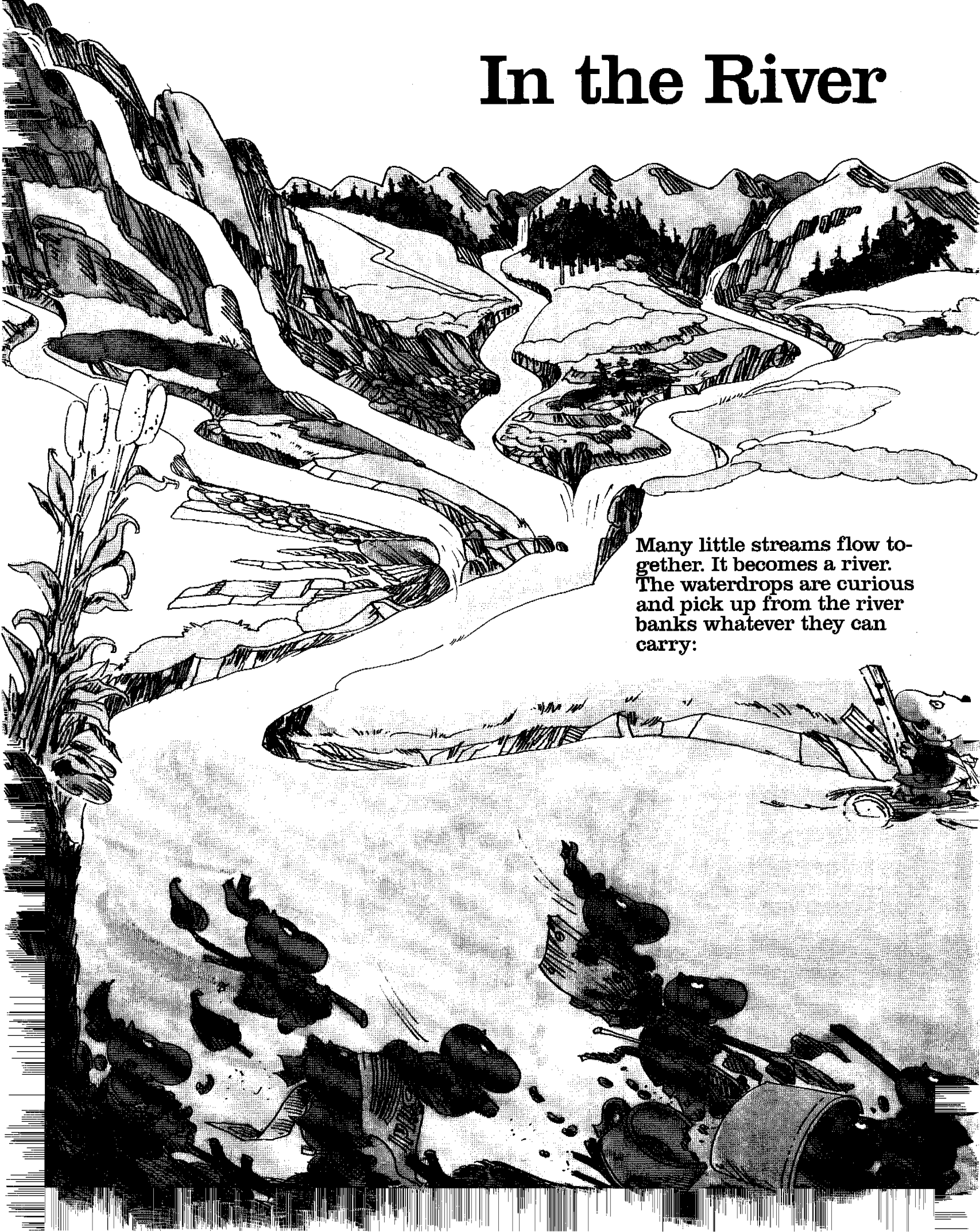
At the bottom they get together in a small pool, but soon they hurry towards an exit and move on in a new stream.

Some of the waterdrops swim into a wooden groove. At the end they plunge onto a waterwheel.

Thus the mill-wheel gets going
and drives a wooden saw.



In the River



Many little streams flow together. It becomes a river. The waterdrops are curious and pick up from the river banks whatever they can carry:



lake. A huge dam wall blocks up their way.

dam wall

leaves, loose blades of grass, branches, cans and bottles. In doing so they get pretty dirty. The waterdrops in the wide river swim rather slowly, but finally they reach a storage

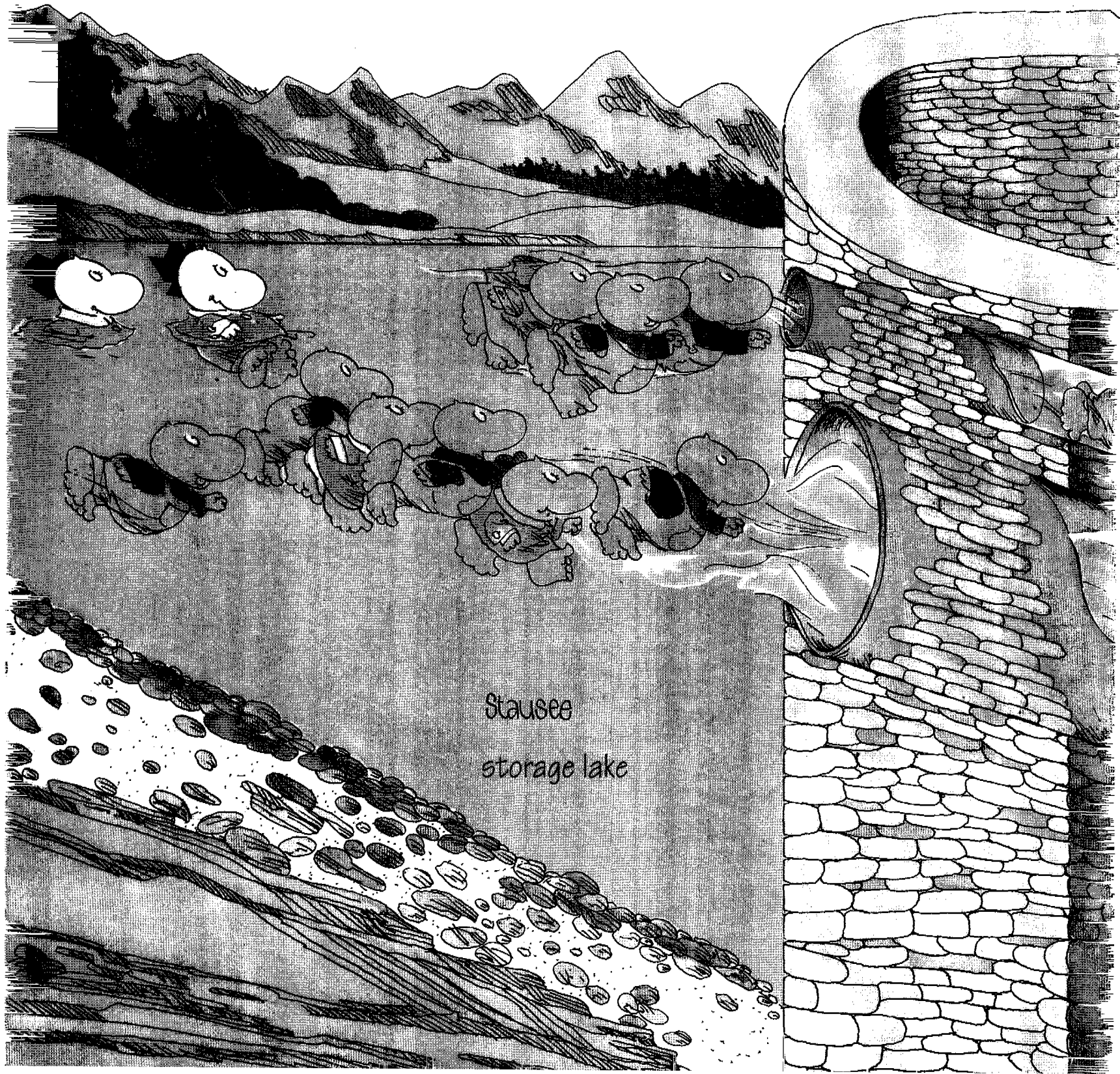
colour

Farbe

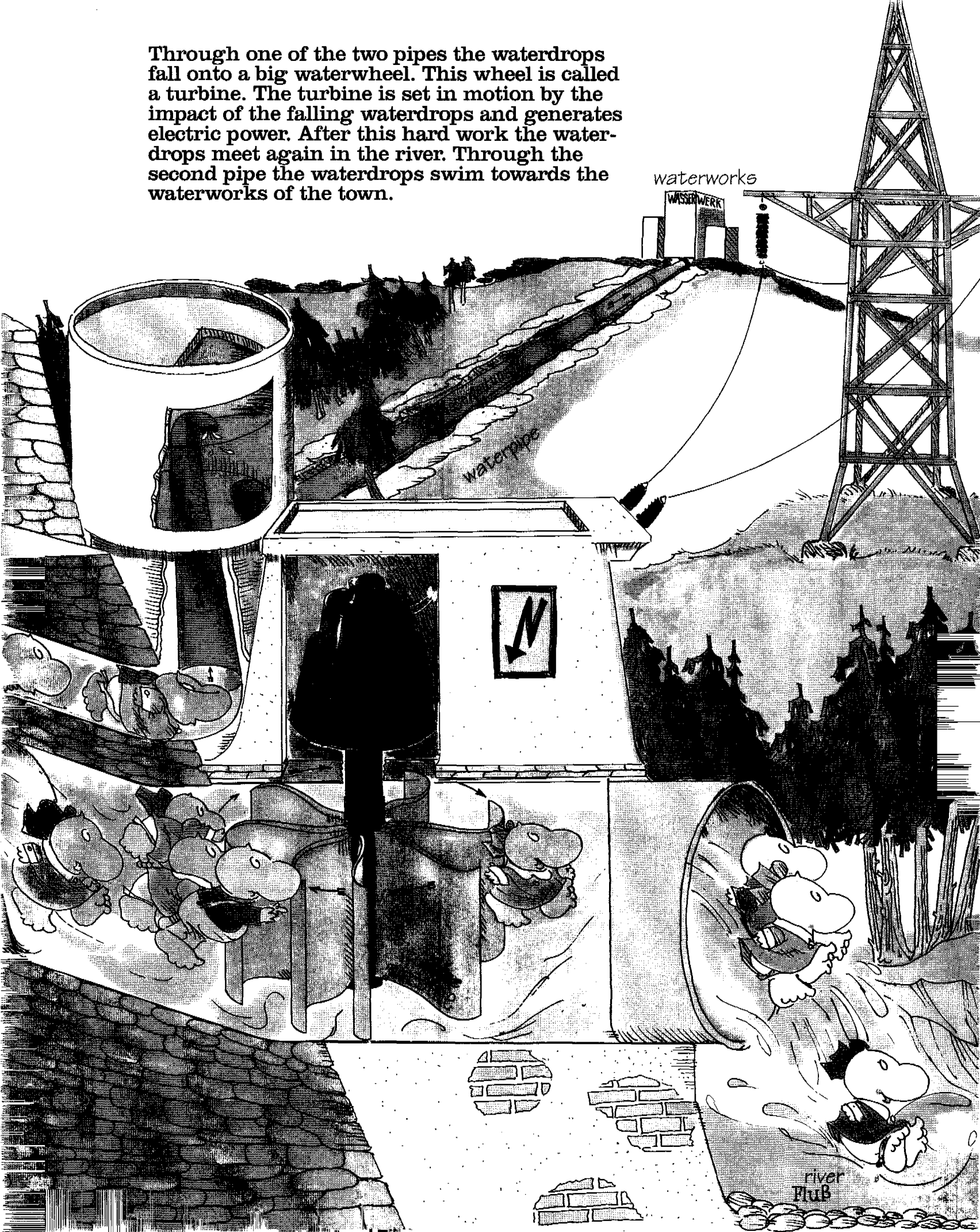
The storage lake behind the wall is called a dam. During floods and heavy rainfalls it takes up a lot of water. This water rises higher up the dam wall. To prevent it from overflowing there are pipes into which the water can flow.

dam wall

Staumauer



Through one of the two pipes the waterdrops fall onto a big waterwheel. This wheel is called a turbine. The turbine is set in motion by the impact of the falling waterdrops and generates electric power. After this hard work the waterdrops meet again in the river. Through the second pipe the waterdrops swim towards the waterworks of the town.



waterworks

WASSERWERK

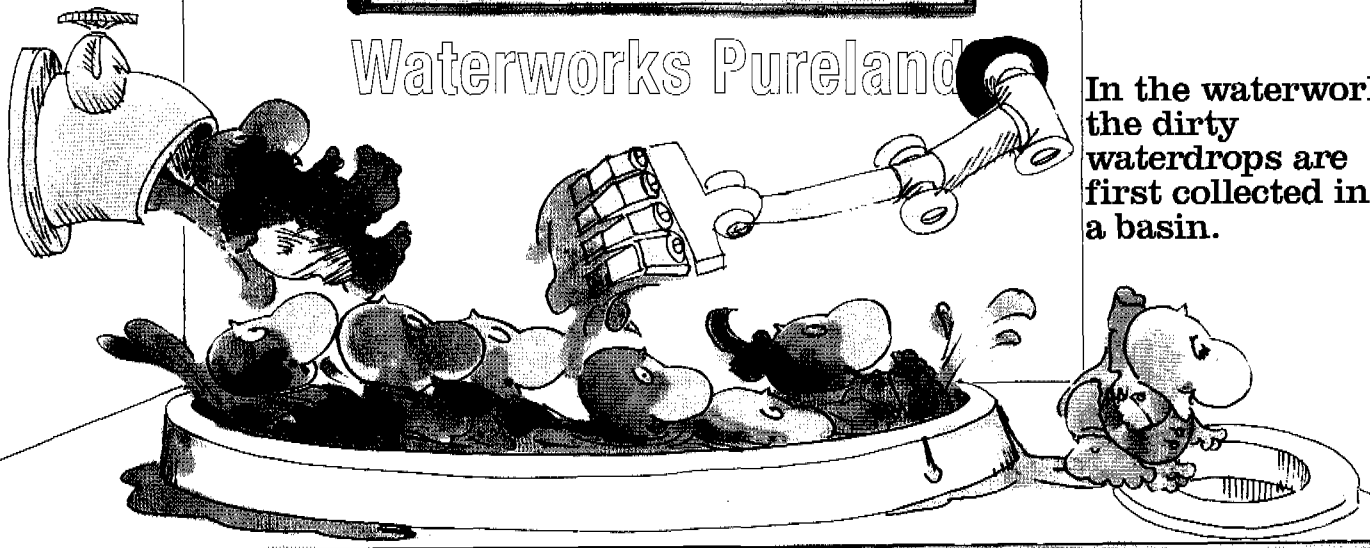
waterpipe

river
Fluß

Wasserwerk Reinland

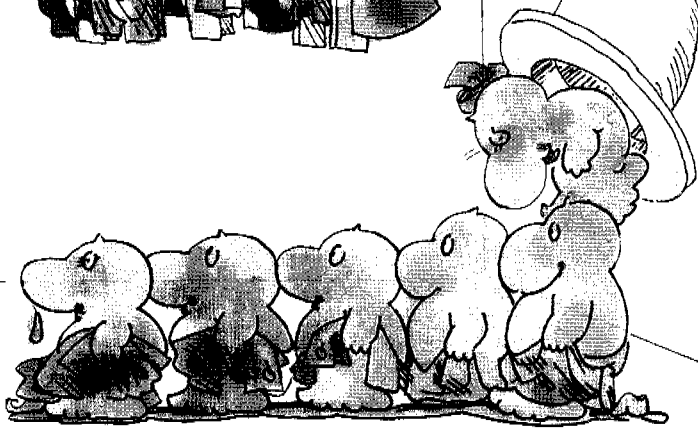
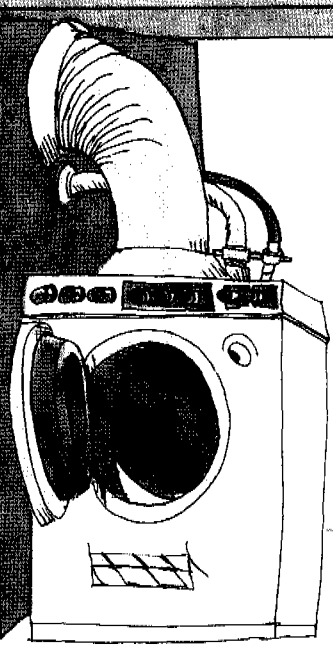
Waterworks Pureland

In the waterworks the dirty waterdrops are first collected in a basin.

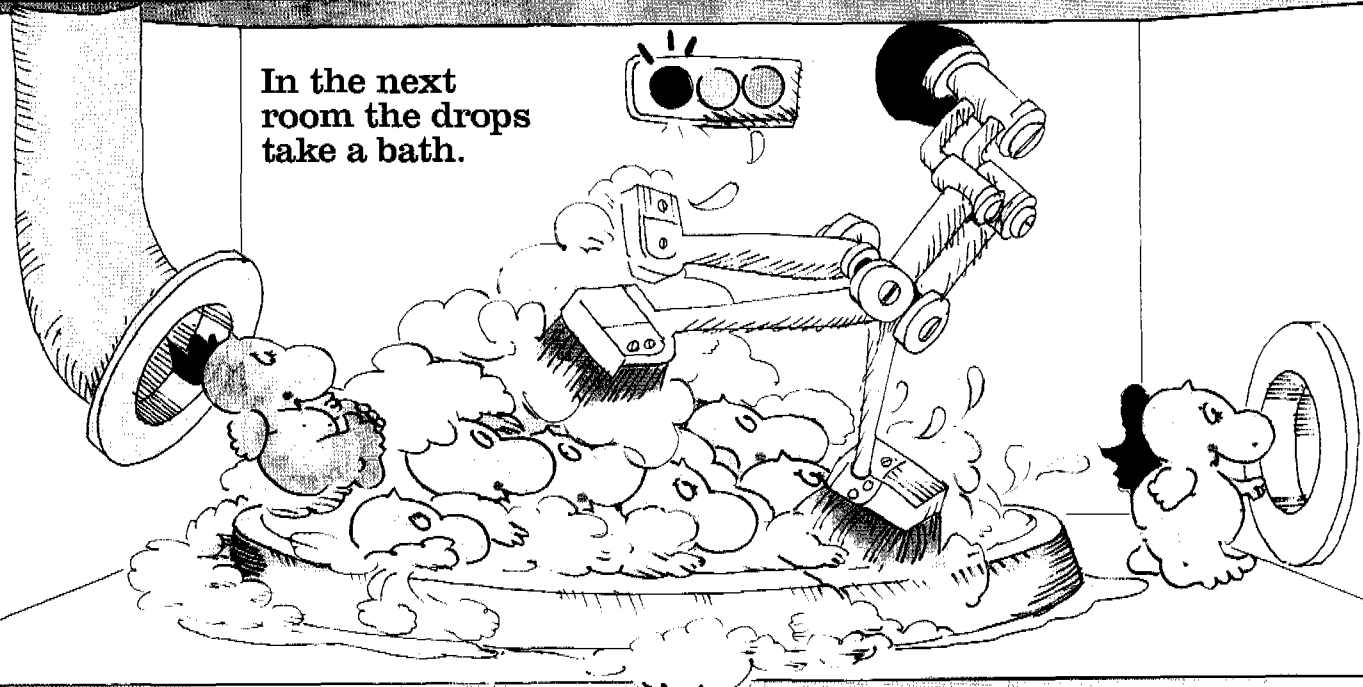


They move on to a room where they deposit their clothes to get them washed.

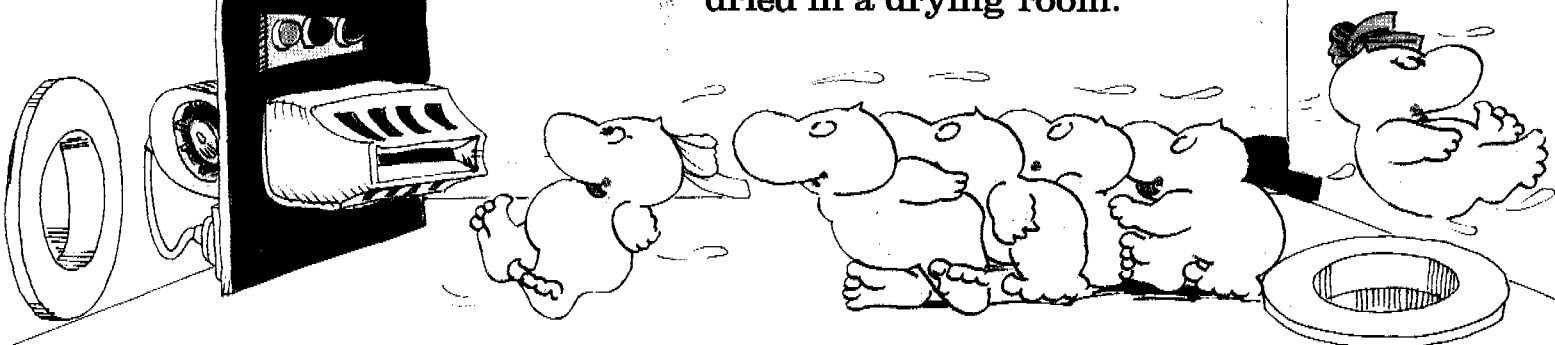
Here it gets down!



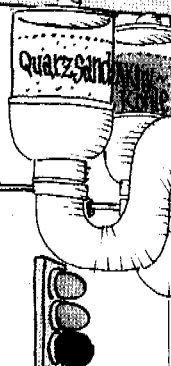
In the next room the drops take a bath.



After their bath they get dried in a drying room.



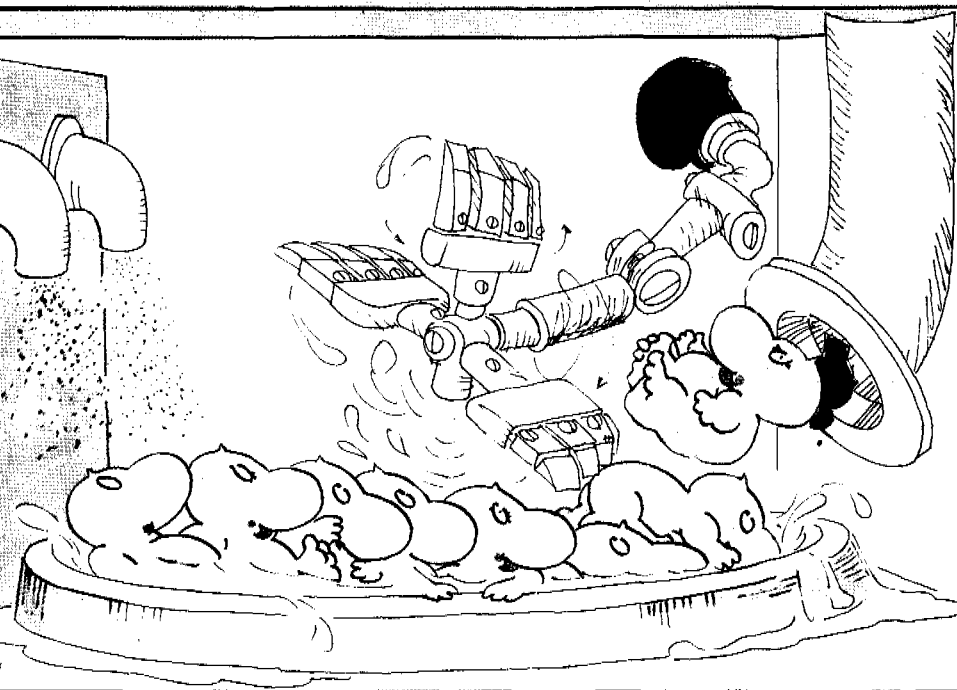
quartz crystals



coal

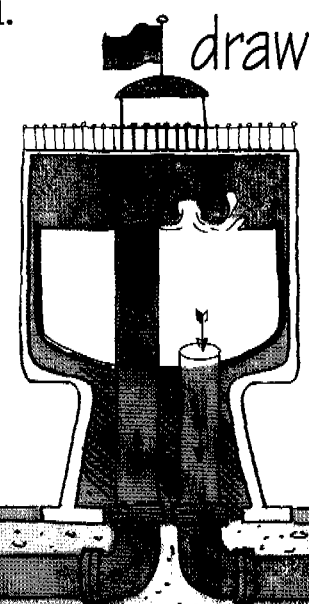
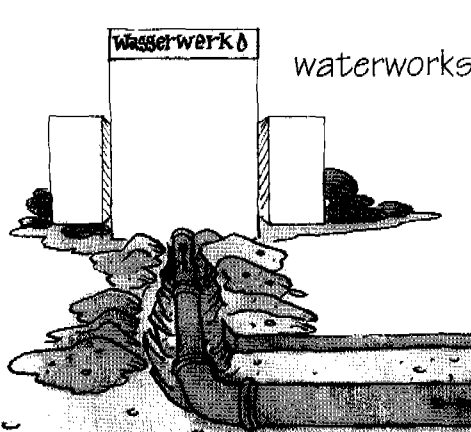


This is the way to the water tower



In the last room they are treated with sand. Now the waterdrops are clean and look bright and shiny.

drawing of a water tower

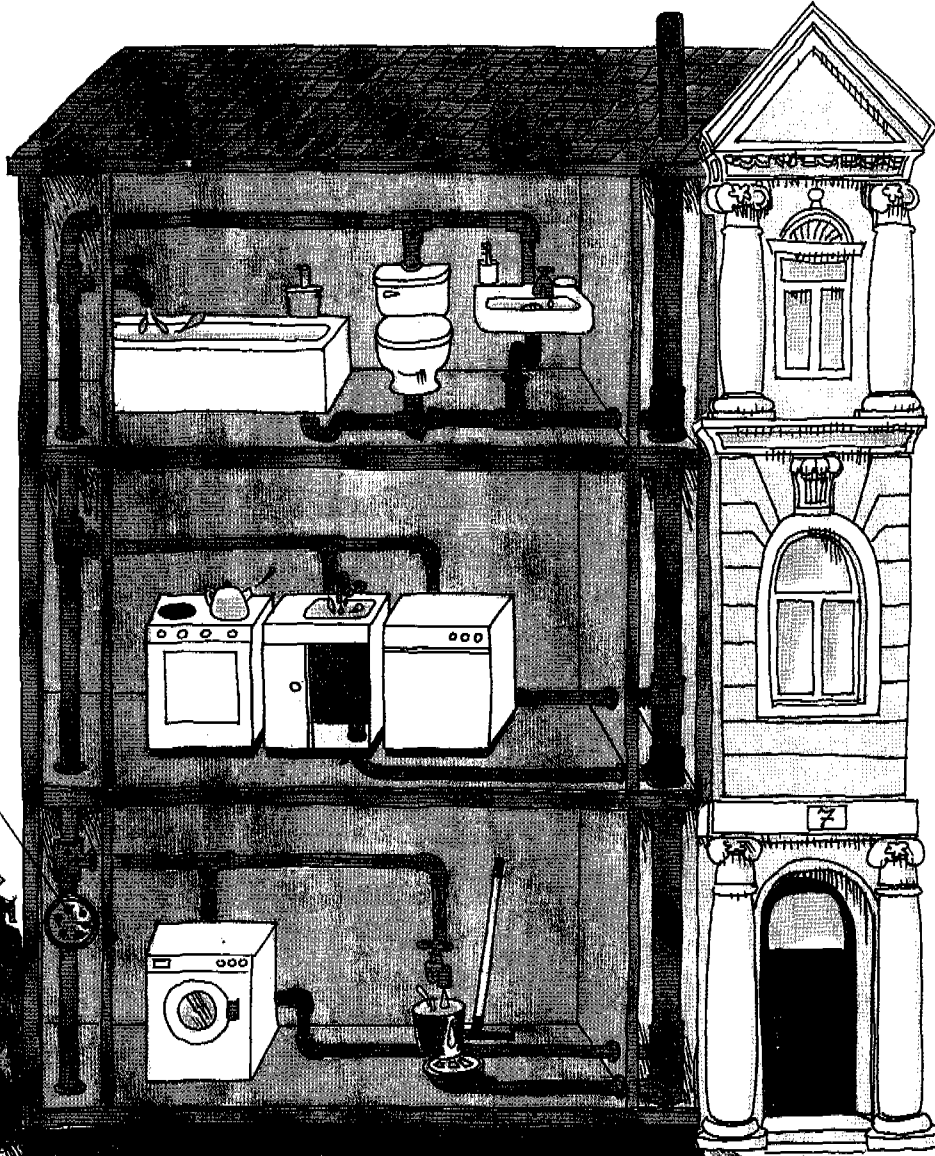


The waterworks now pump the waterdrops into a water tower. In this tower they can take a rest. Later they slide down from high above into big pipes laid in the ground.

In the House

A drinking-water pipe connects each home with the underground pipeline. Before the waterdrops enter into the house, they are counted by a water meter. As drinking-water costs money, the amount running into each house has to be measured.

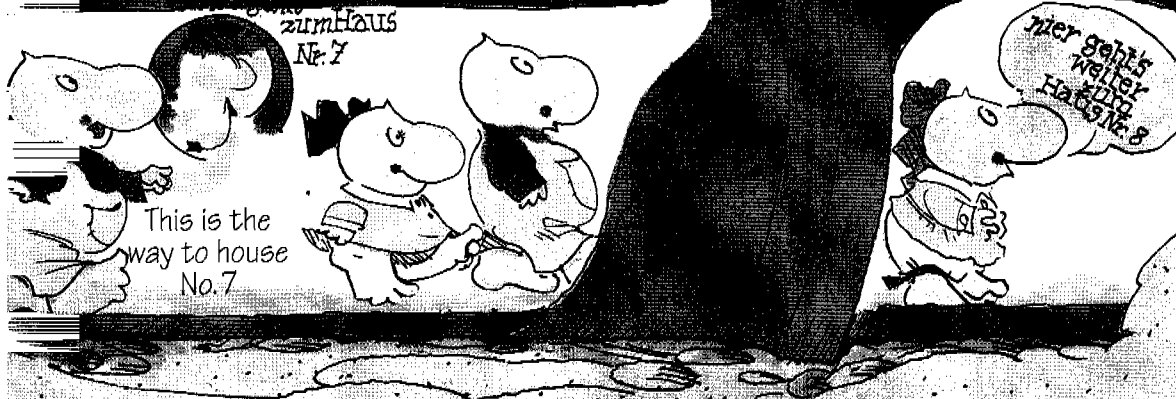
Here the waterdrops are counted



water meter

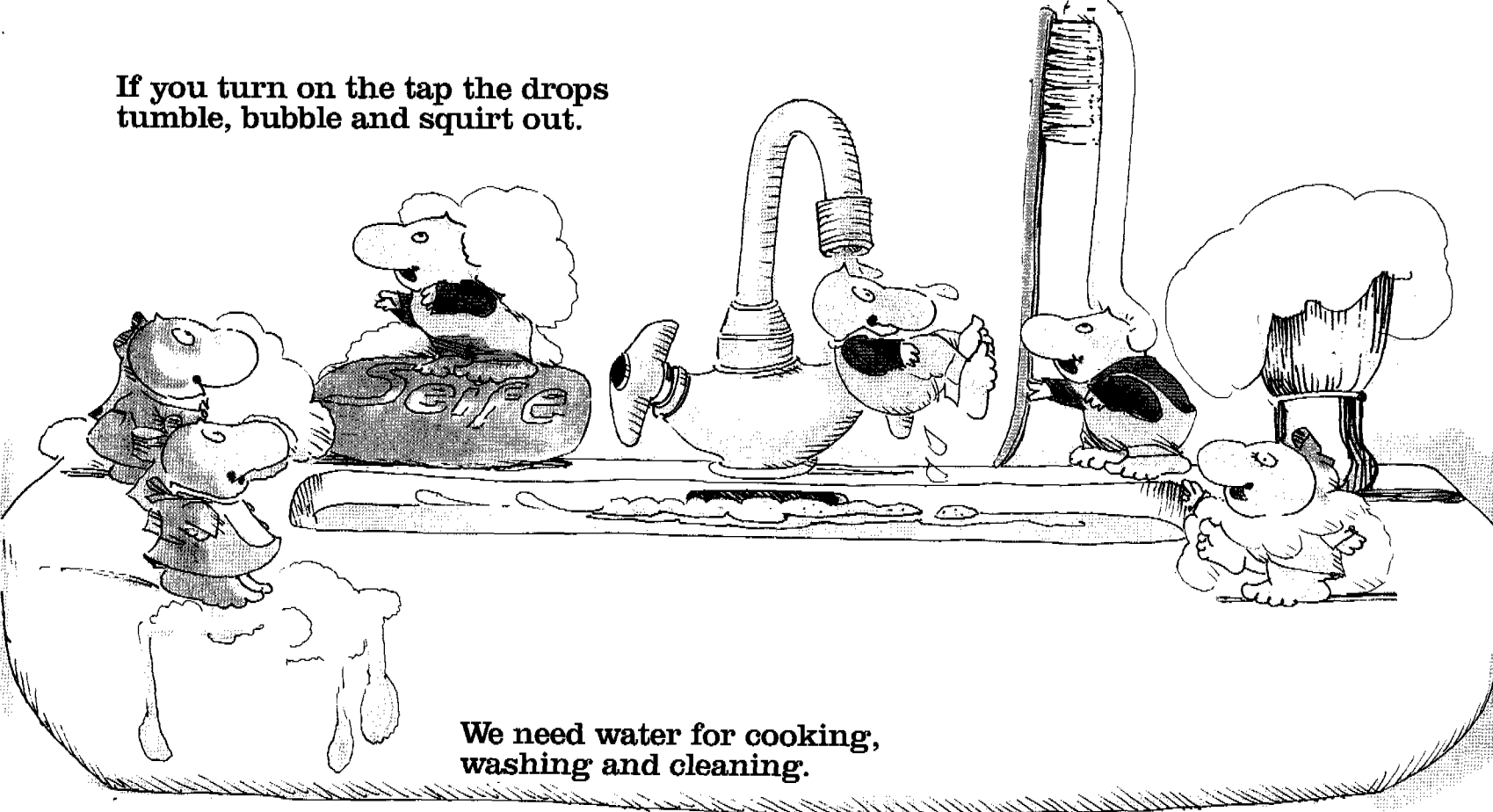
Next the drops climb up the mains to the different floors of the house. The mains branch off into the single taps.

sewage pipe

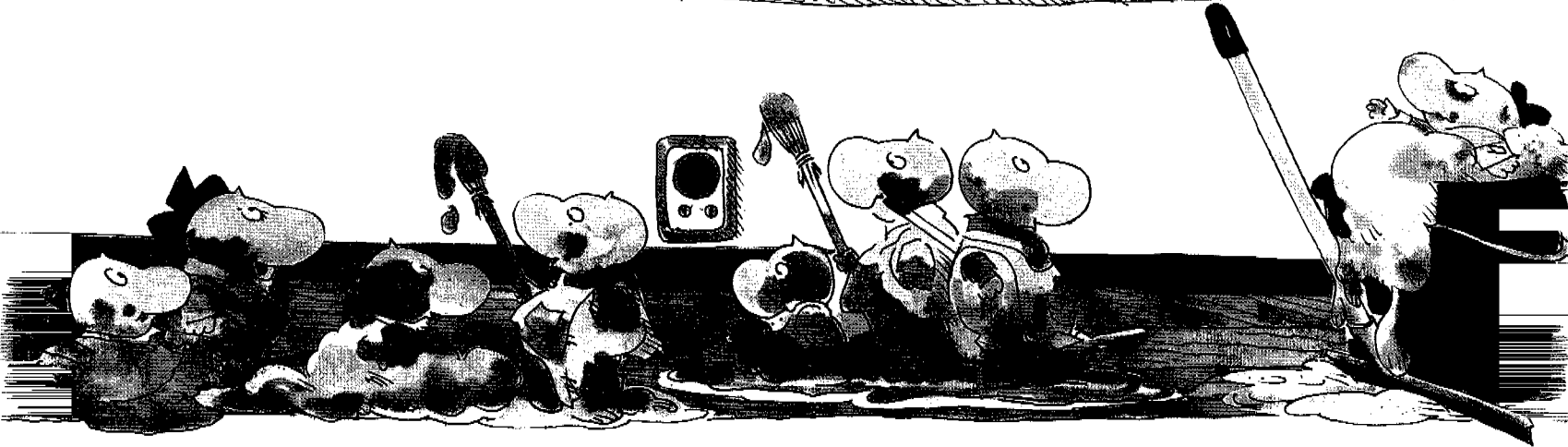


This is the way to house No. 8

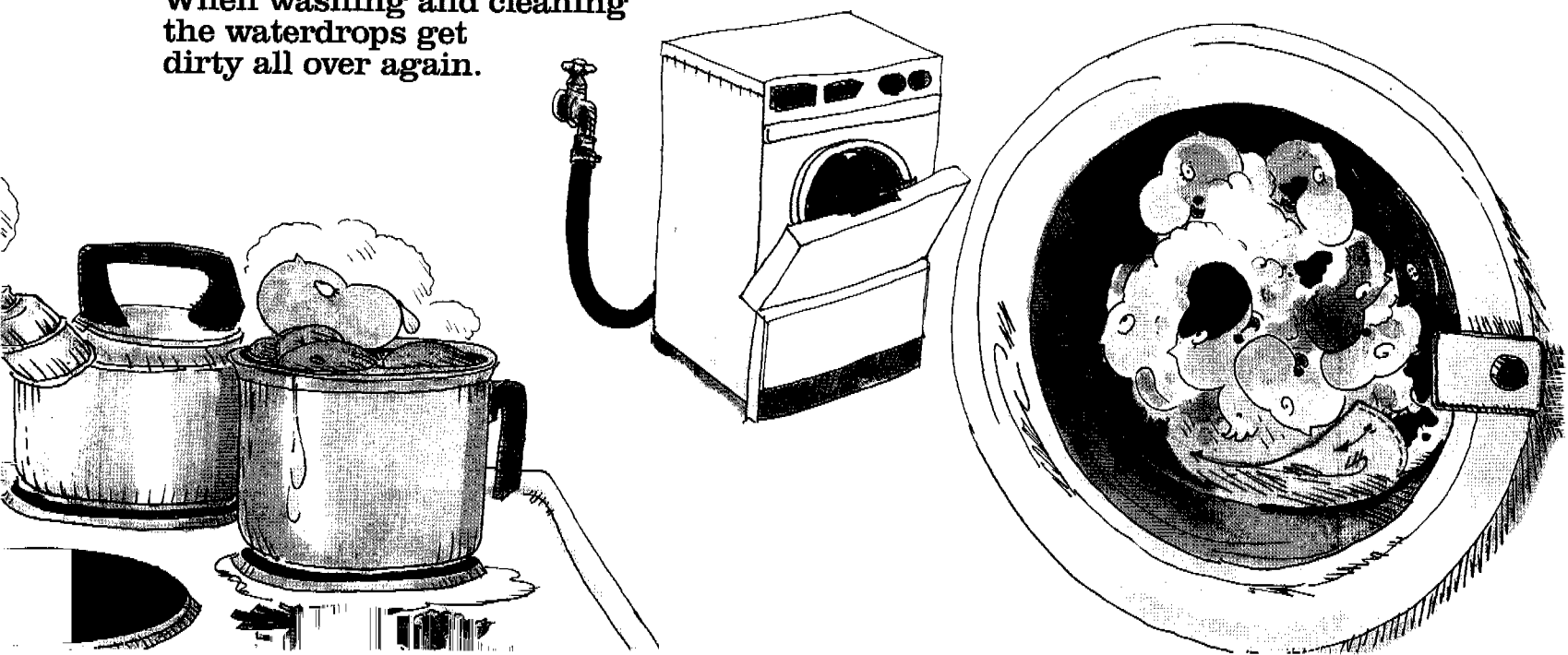
If you turn on the tap the drops
tumble, bubble and squirt out.

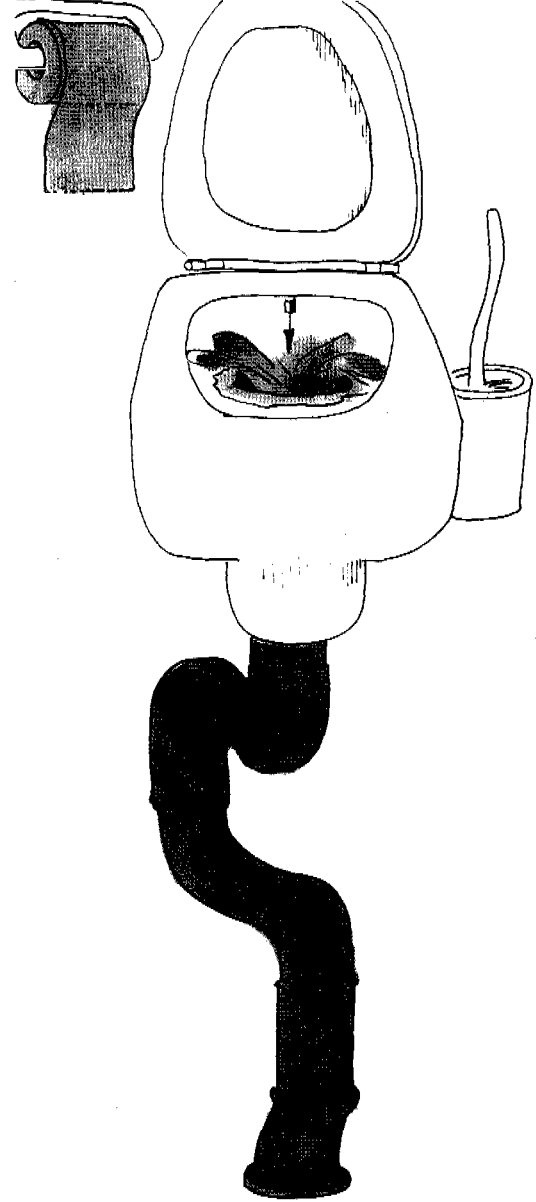


We need water for cooking,
washing and cleaning.



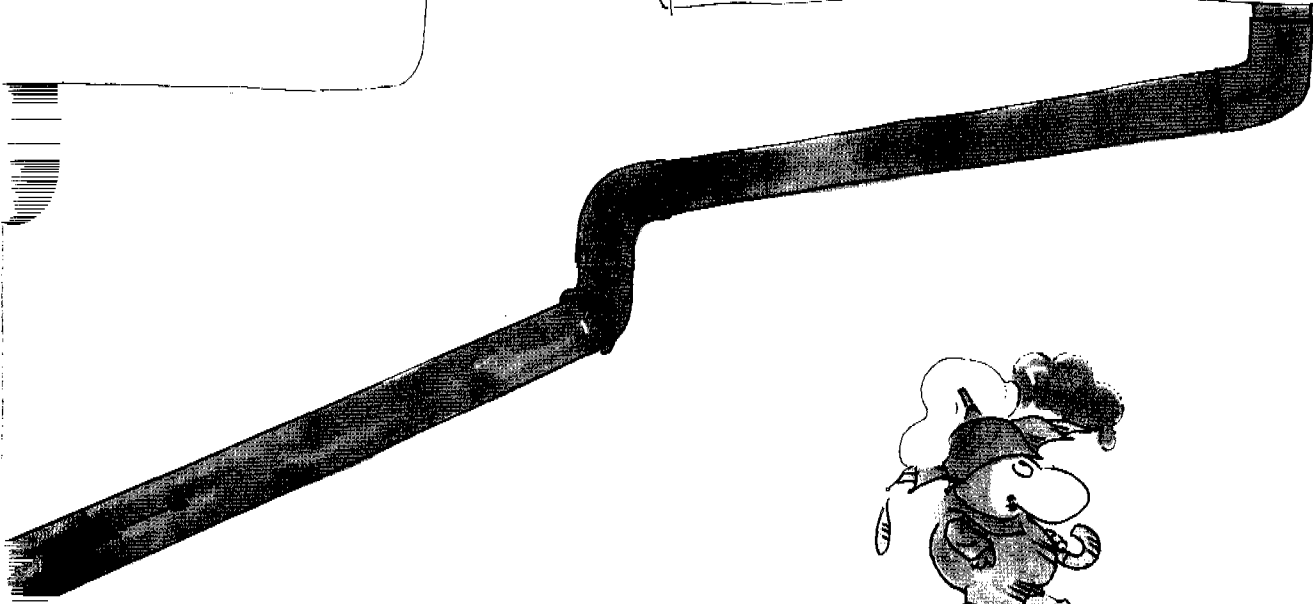
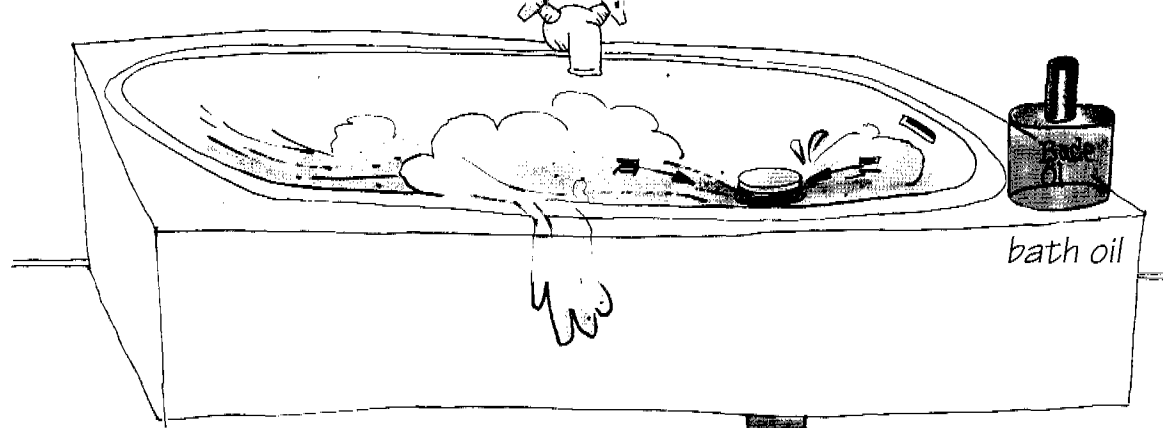
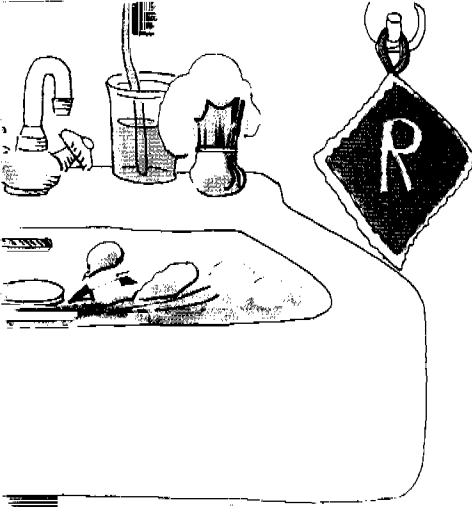
When washing and cleaning
the waterdrops get
dirty all over again.



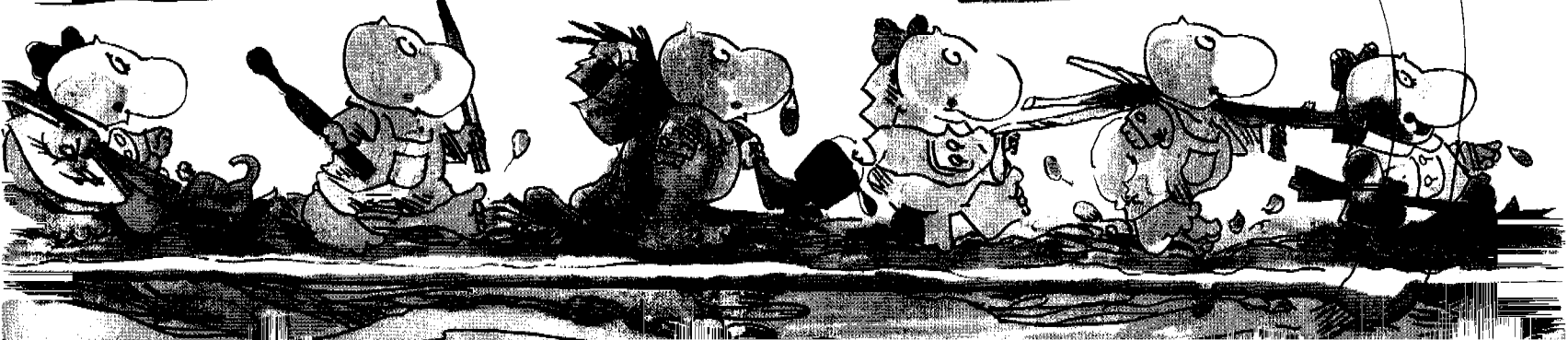


Through the drain of the washbasin and the bathtub, and through the toilet outlet the waterdrops flow into the underground sewage-canals. Here the dirty waterdrops from all the homes meet again.



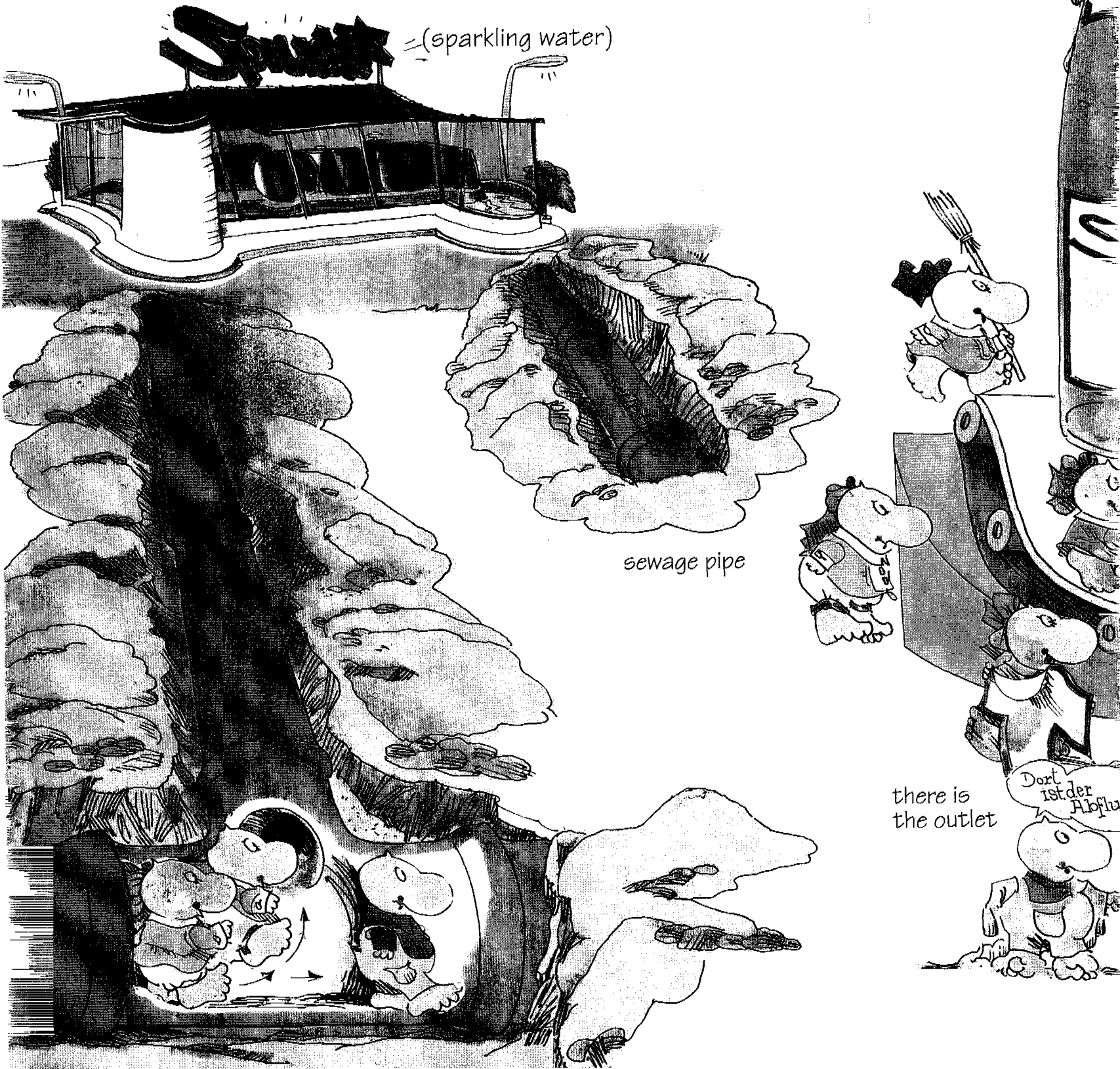


Many drops carry things found or collected on their way: paper, soap, tooth paste and so forth.



Waterdrops at Work

From the underground pipeline coming from the waterworks, there is also a smaller pipe leading to a mineral-water plant.



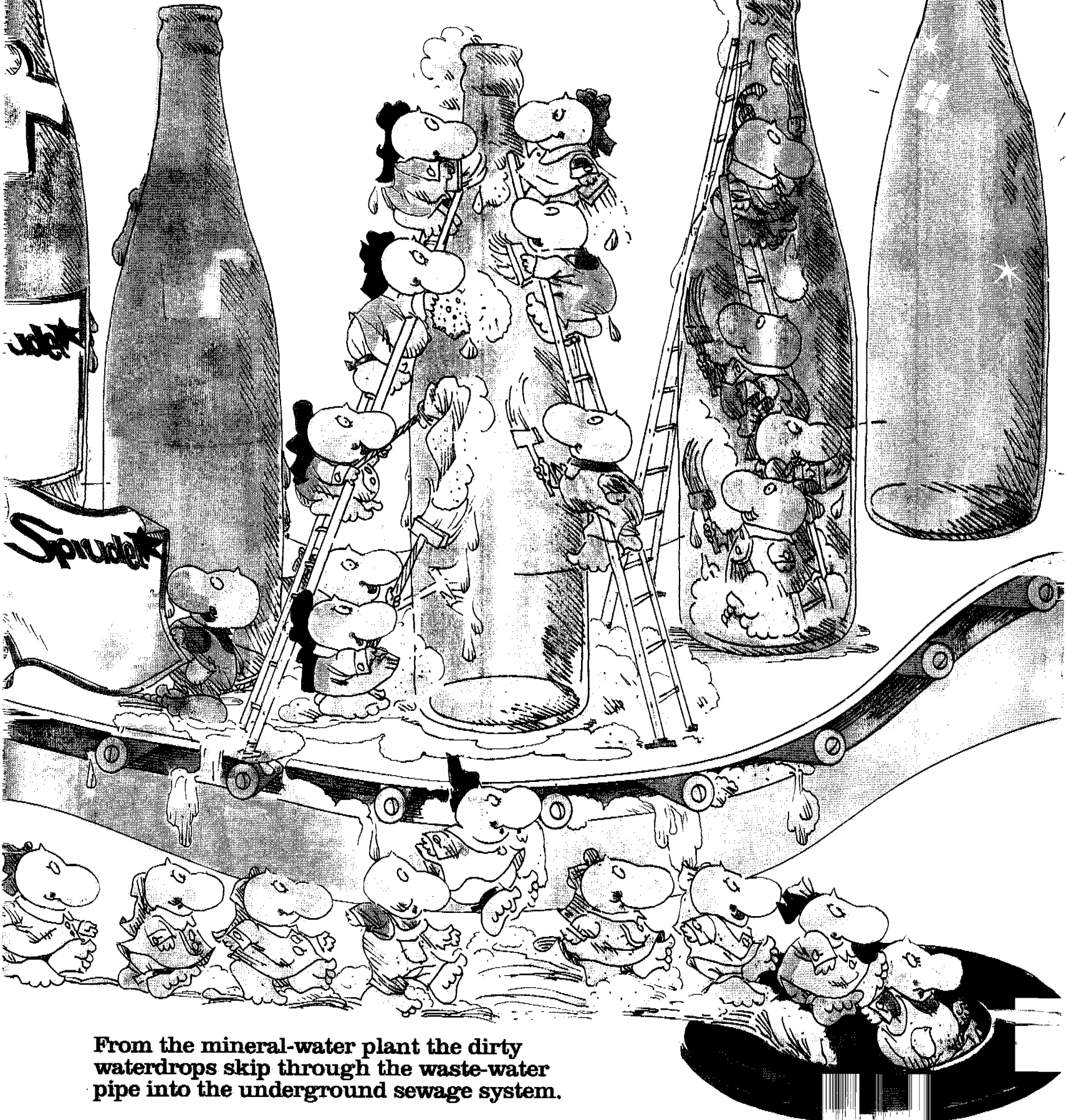
=(sparkling water)

sewage pipe

there is the outlet

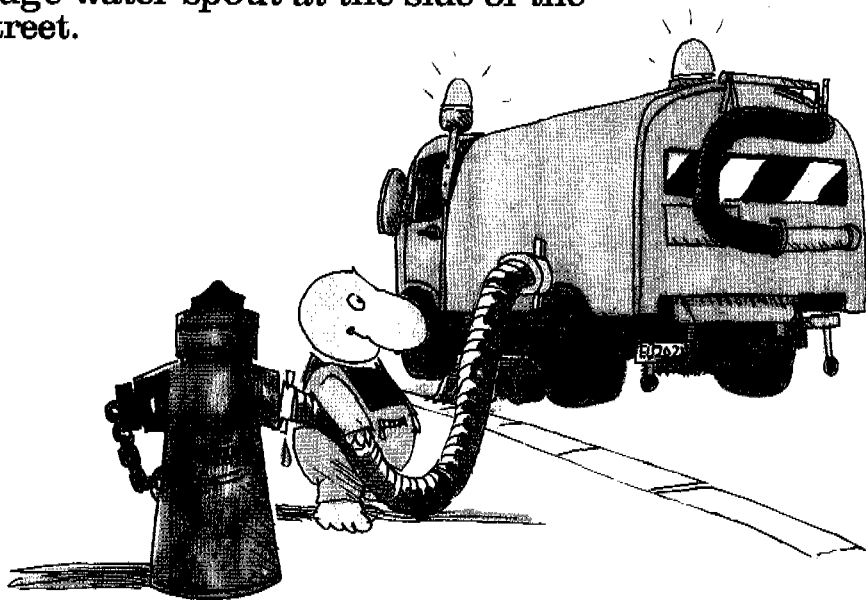
Dort ist der Abfluss

The pipe leads to the bottle washing-station. Here you can see empty, dirty bottles. The waterdrops glide inside and outside the bottles and clean them. And in this way these little drops also dirty themselves: the bottles, however, become shiny and clean.



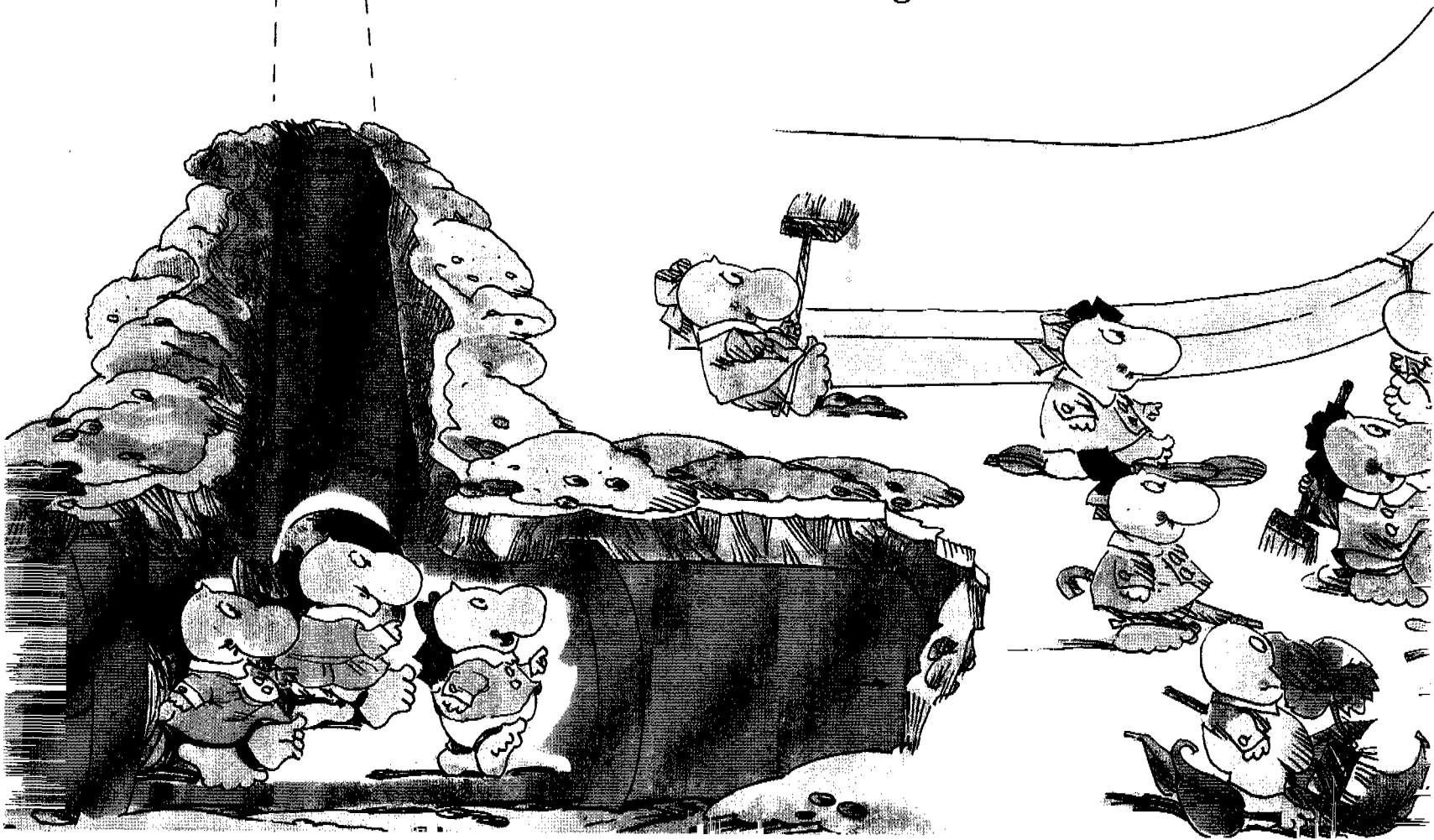
From the mineral-water plant the dirty waterdrops skip through the waste-water pipe into the underground sewage system.

In a different section of the drinking-water pipe the waterdrops assemble in a hydrant. This is a huge water spout at the side of the street.



Right now a street-sweeper is being filled with water.

Another street-sweeper is moving through the streets of the town. The waterdrops are sprinkled onto a round broom. Thus the waterdrops fall onto the street and pick up the dirt. From the middle of the street the drops flow to the edge and into the gutter.





Whatever they can find
and carry, they take with
them into the street drain.

street drain

From here they plop into
the pipes of the under-
ground sewage system.




The sewage canals conduct the dirty water to the purification plant. The waterdrops come back out into daylight. First they get sent through grating. Here they have to hand over everything they have brought along, e.g. pieces of wood, paper and leaves.

Kläranlage

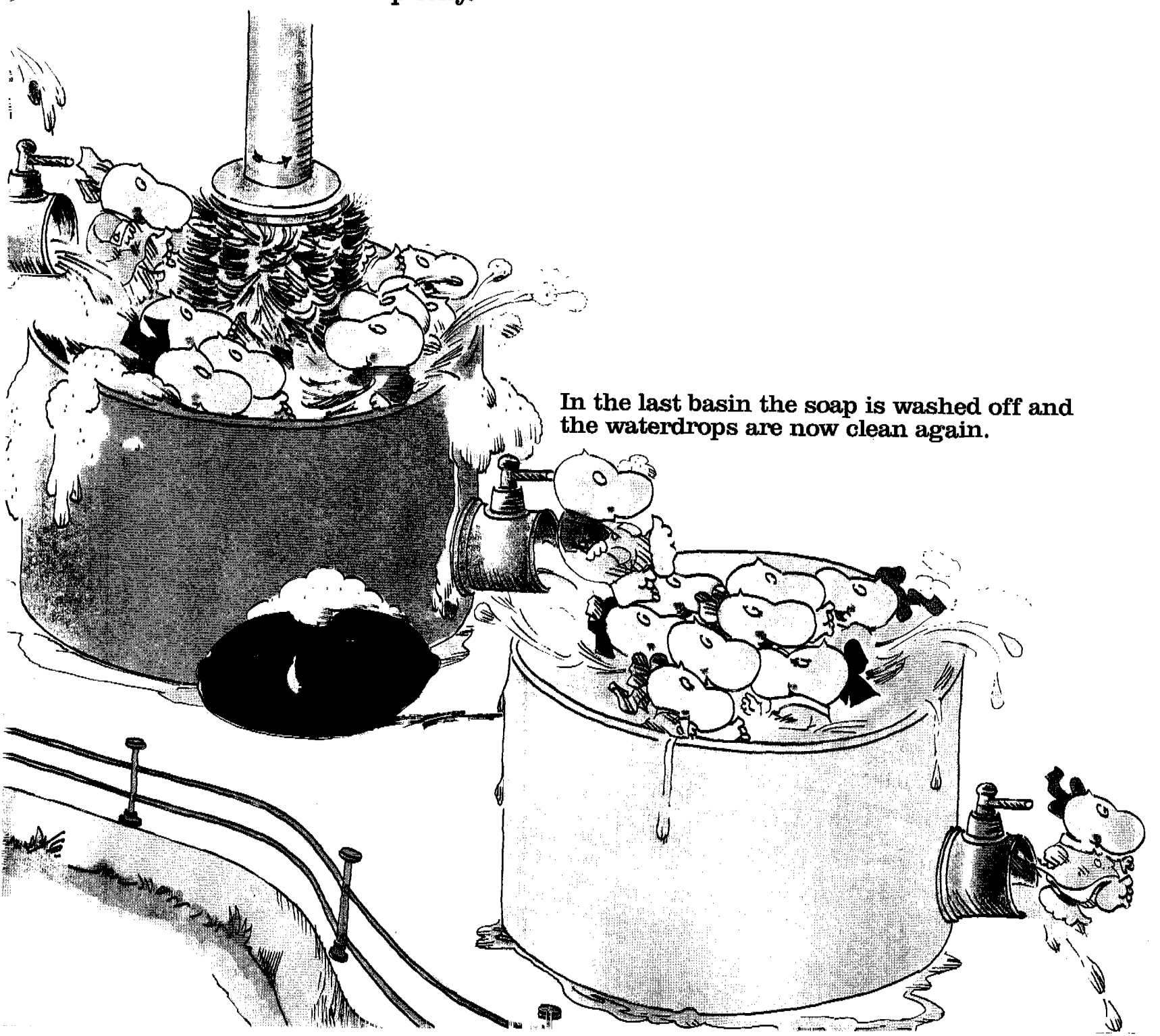
Waste-Water
Purification Plant



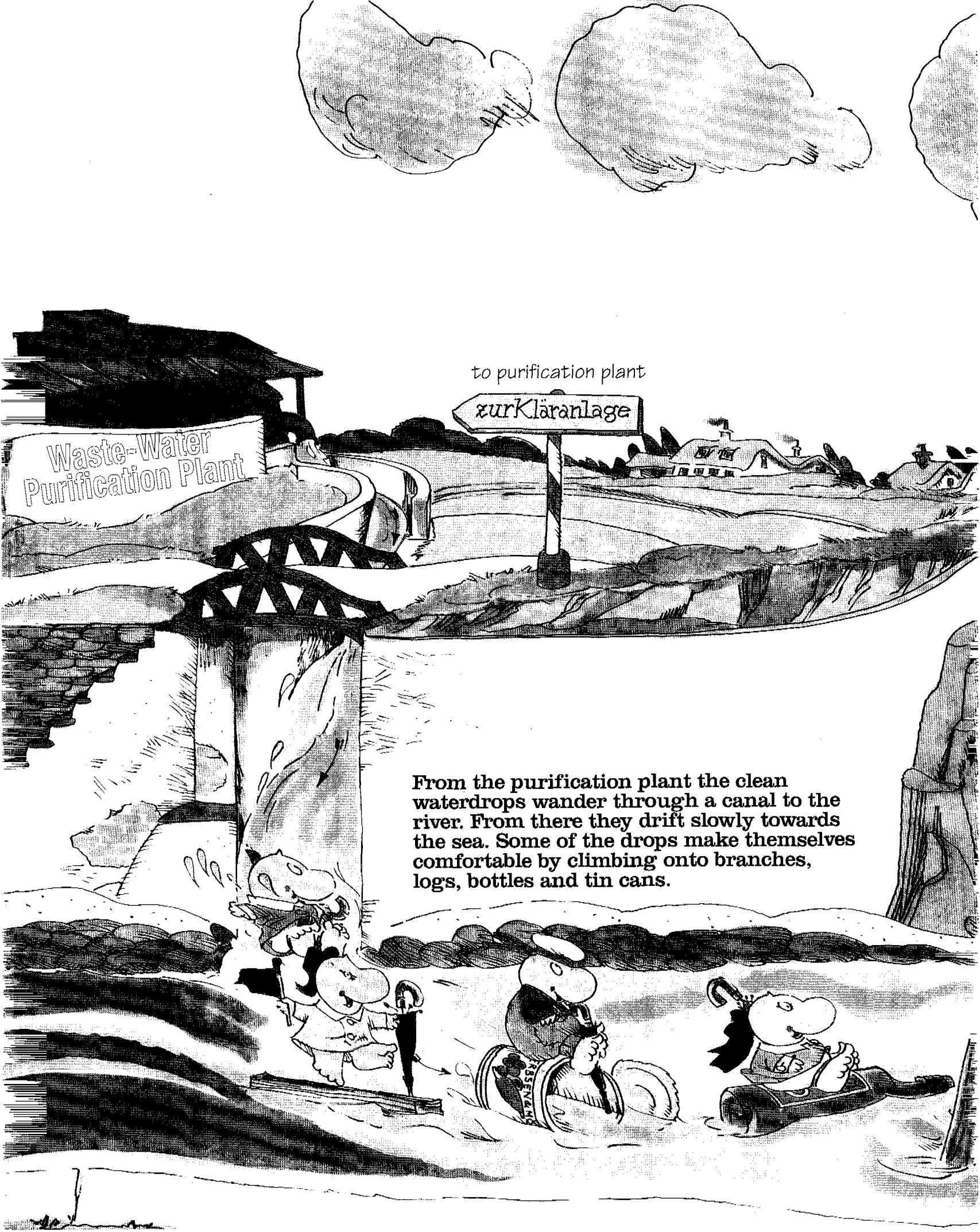
After that the drops plunge into a big basin where they get thoroughly bathed.



In the next basin the waterdrops get washed and brushed with soap. This whirls them around completely.



In the last basin the soap is washed off and the waterdrops are now clean again.

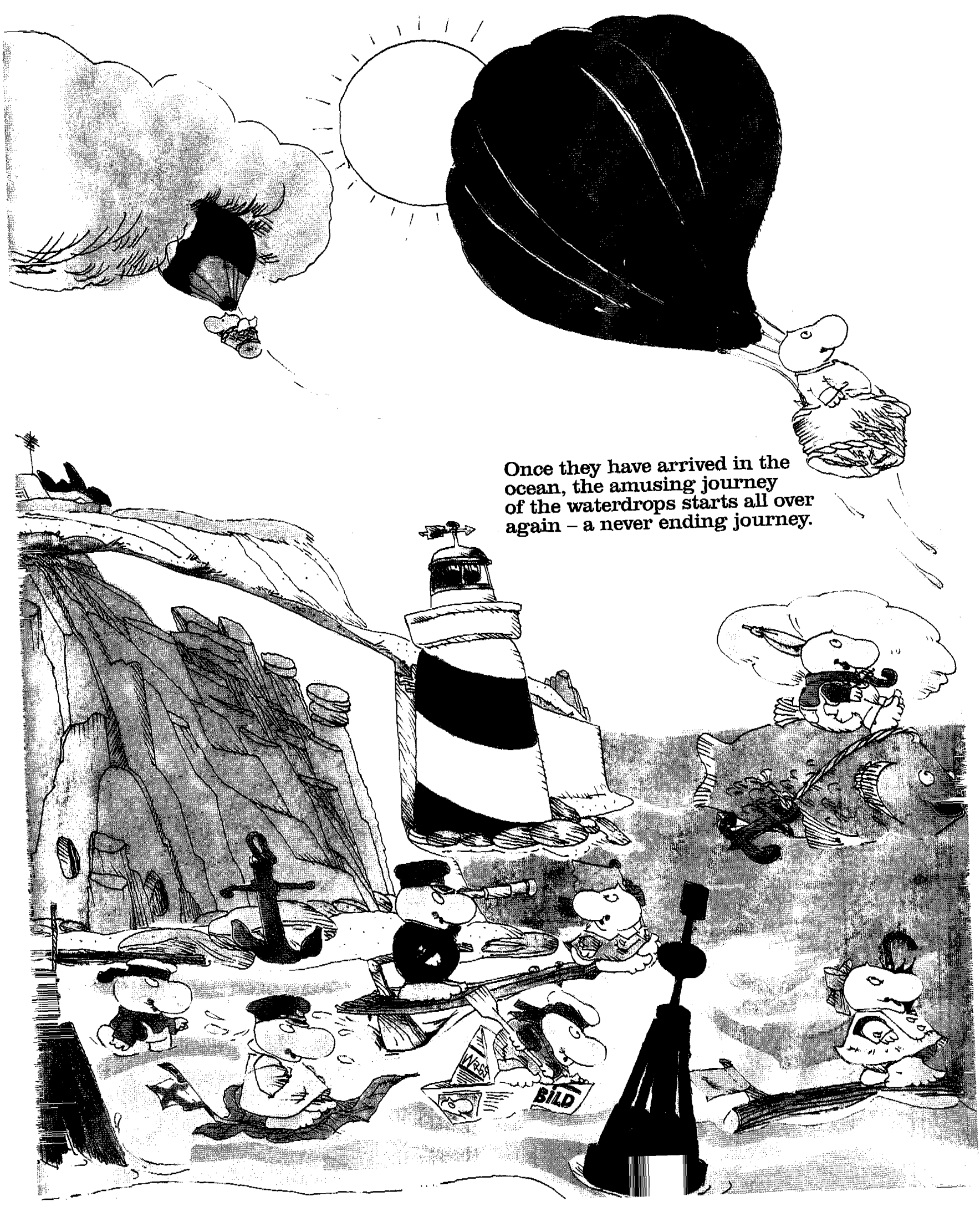


to purification plant

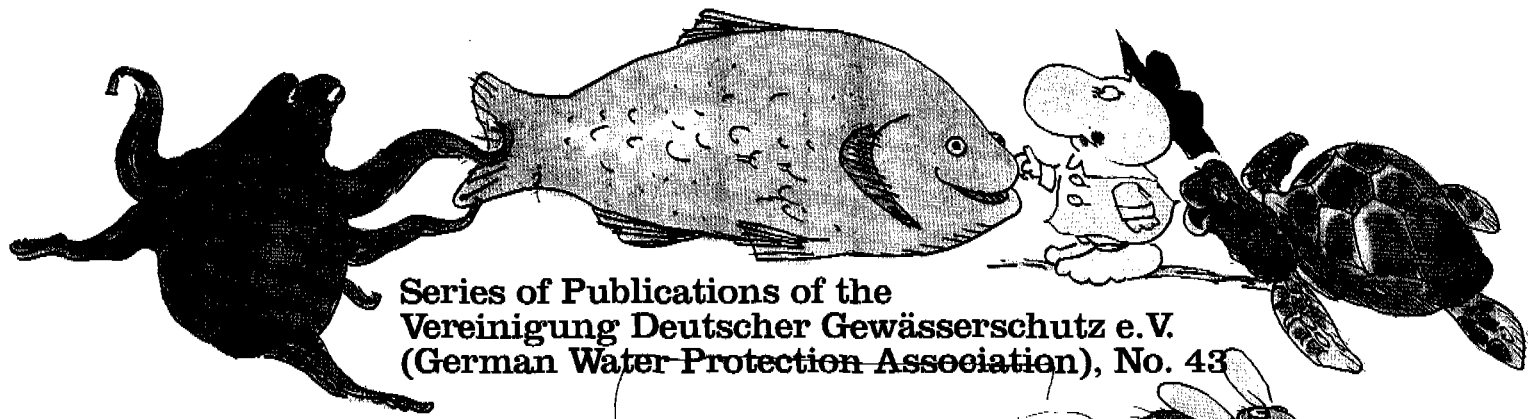
zur Kläranlage

Waste-Water
Purification Plant

From the purification plant the clean waterdrops wander through a canal to the river. From there they drift slowly towards the sea. Some of the drops make themselves comfortable by climbing onto branches, logs, bottles and tin cans.



Once they have arrived in the ocean, the amusing journey of the waterdrops starts all over again – a never ending journey.



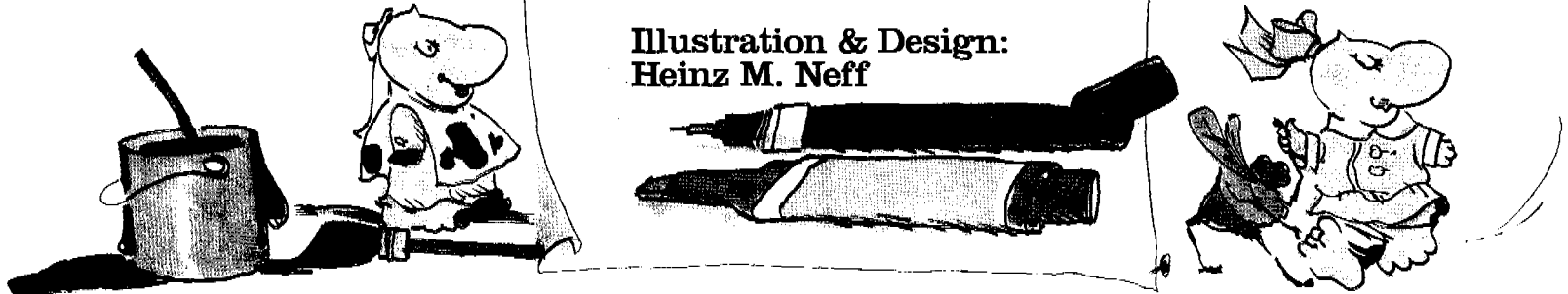
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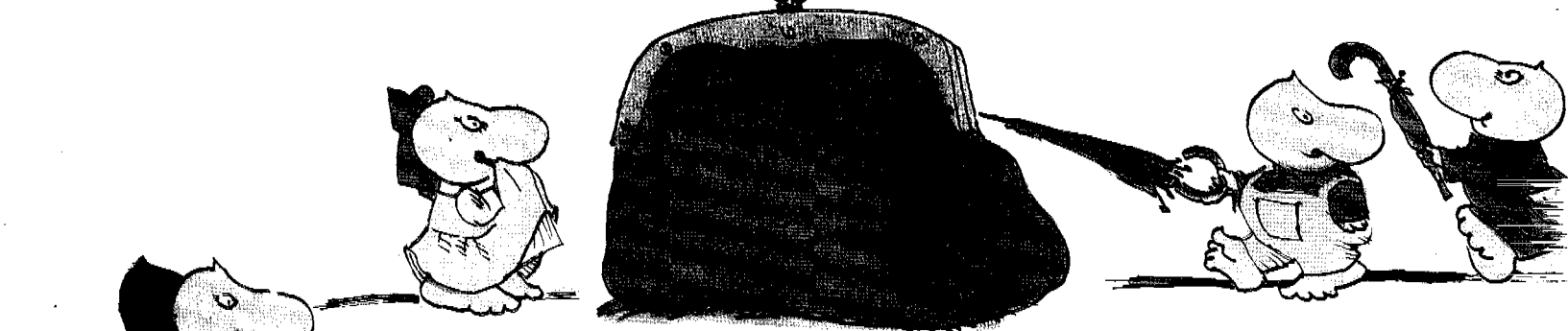


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