



# GOD did it FIRST!

## FOG HARVESTING

**I**N some parts of the world there are deserts where it hardly ever rains. Yet in the cool nights there is sometimes fog, and fog is full of moisture. Is it possible to harvest the water from fog? Yes, it is, and the Namib Desert Beetle, which lives in the Namibian Desert in Africa, does just that.

This beetle has a very hard, armour-like shell which is covered in tiny bumps. The beetle stands still when the morning fog sweeps across the desert. The moisture sticks to the bumps, and forms drops. When the drops become large and heavy enough, they trickle down into channels that lead straight to the beetle's mouth, and it gets a drink!



The Namib Desert Beetle

By Harry & Rowena Kennedy, CC BY-NC-ND 2.0



A fog-harvesting experiment in a desert in Chile

After studying these beetles, scientists in many parts of the world have designed "fog fences" to harvest water from fog. A "fog fence" is made of wire mesh. This collects moisture from the fog, which runs into a trough, then into a collection tank. The water collected in this way has been used to water crops, and even to provide people with drinking water.

Scientists use their intelligence to design fog harvesting devices, yet many of them would tell us that the Namib Desert Beetle — which they are copying — had no Designer, but evolved gradually! How could these beetles have survived if they had to slowly evolve those bumps which collect the moisture from fog? We believe this is the work of God, the Creator. He did it first!

## THE WATER OF LIFE

The Bible tells us that when God created the world it was covered in water. We read: "God's Spirit was moving over the water." (*Genesis 1: 2*). Then God made the land appear, and began to create living things — plants and animals. Life on earth is only possible because we have plenty of liquid water. Water is precious, and we should never take it for granted, or waste it. Also, if we can, we should support those who are working to provide clean water for everyone. Without water we become thirsty, and couldn't survive for more than about three days without a drink.



There is another kind of thirst which water can't quench. It is spiritual thirst. God created us to know Him, and we can never be fully happy or satisfied apart from Him. The Bible tells us that in the beginning human beings and God were friends, but that friendship was broken by sin (*Genesis chapter 3*). All of us have done wrong things, and this keeps us from knowing God. The Bible tells us that God came to us in the Person of His Son, Jesus. He died on the cross to

take away the sin which separates us from God, and rose from the dead to make a way for us to live with Him forever. When we accept God's forgiveness through faith in Jesus, He gives us "living water." He promised, "Whoever drinks the water I give will never be thirsty again. The water I give will become a spring of water flowing inside him. It will give him eternal life." (*John 4: 13*).

**All the water in the world could never give us what Jesus offers, and His supply will never run dry!**



## PUZZLE ANSWERS



Bible verse:  
Genesis 1: 20.

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Our World is published three times a year by the Creation Resources Trust (Reg. Charity No.1016666). Editing, design and layout by Geoff Chapman. Unless otherwise stated, articles are written by the editor. There is no subscription charge, but donations towards costs are invited. For more information about this, and other resources, please contact CRT at P O Box 3237, Yeovil, BA22 7WD, UK. Phone: 01935 850569. Email: info@crt.org.uk Website: www.crt.org.uk © 2021 CRT

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## WATER IS SPECIAL!

On earth, water exists in three forms: liquid, solid (ice) or gas (vapour). Water is very special in several important ways, and quite different from nearly every other liquid, which makes life on earth possible for us and all living things.

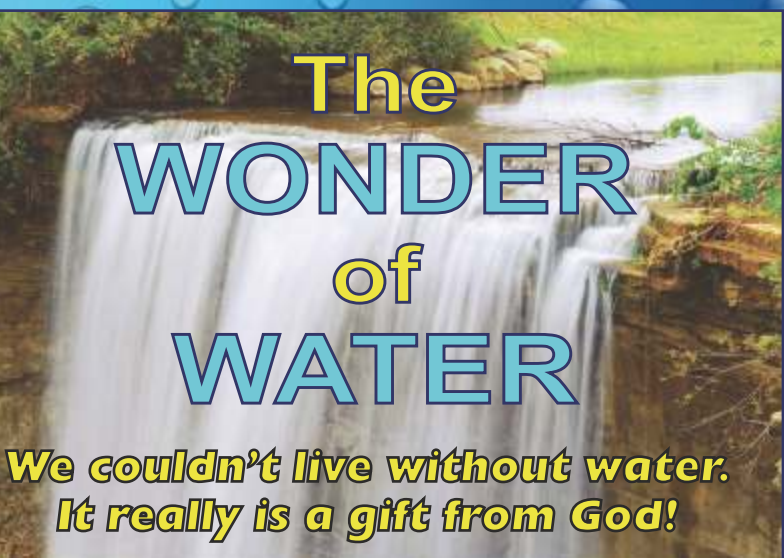


This photo shows water in its three forms: liquid (sea), solid (ice) and vapour (clouds). Nearly all of the earth's water (97%) is in the seas and oceans. The rest is frozen in ice or is up in the clouds.

**See inside to learn more about the wonders of water and how much we depend on it**

## WONDERS OF THE SNOW

In very cold weather, water vapour forms ice crystals which join together and fall as snowflakes. 100 years ago a man called Wilson Bentley (left) took thousands of photos of snow crystals, like those on the right. He called them "miracles of beauty", and never saw two that were the same! There are millions of snow crystals — all different. How wonderful!



## IMAGINE A WORLD WITH NO WATER!

We all use water every day — for washing and cleaning our teeth, washing clothes and dishes, and, most important of all, for drinking. It's not only us but all animals and plants that depend on water. In fact, it's difficult to imagine a world without water. As far as we

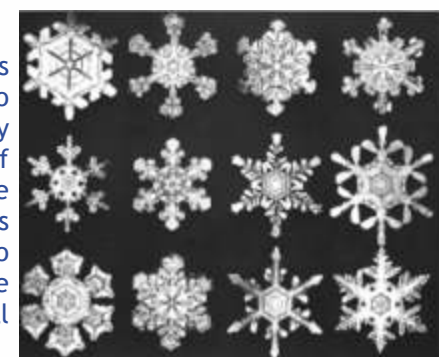
know, our planet is the only place in the universe where there is liquid water. That makes it very special! The earth is provided with water by what is called *The Water Cycle*. The heat of the sun draws water from the earth's surface into clouds. It then falls back to the earth as rain or snow. 3,500 years ago the Bible perfectly

described this: "God takes up the drops of water from the earth. And he turns them into drops of rain. Then the rain pours down from the clouds. And showers fall on people." (*Job 36: 26-28*)



## ALSO IN THIS ISSUE:

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## Water's special design

Most liquids contract (get smaller) when they cool, and so does water – until it gets near freezing-point (00C) – then it starts to expand. When ice forms, it floats to the surface. If water behaved like other liquids then, when it froze, ice would sink to the bottom, and lakes and ponds in the colder parts of the earth would turn to solid ice. Because ice forms on the surface it's like a blanket, keeping the water below much warmer than the air above. Without this, many fish and other creatures that live in the water would die. In cold countries people sometimes go "ice fishing." (left). The layer of ice means that fish are still alive and swimming around under it – thanks to the way water is designed.



When water is heated it expands (gets larger). You can see this when a kettle boils and the water turns to steam. Long ago, engineers realised that they could use steam to drive machines, like railway engines. Steam engines



have boilers which are filled with water. When the water is heated the steam provides the power to make the machine work.



Freefoto.com

Water is made of tiny *molecules* which stick together and form a kind of film on the surface. This is called *surface tension*, and explains why water forms into drops. You can see this if you dip your finger in water. It also means that some insects, like the water strider (below) can actually walk on the water!



Wikipedia photo

## NATURE NOTES by the editor



A desalination plant in Spain

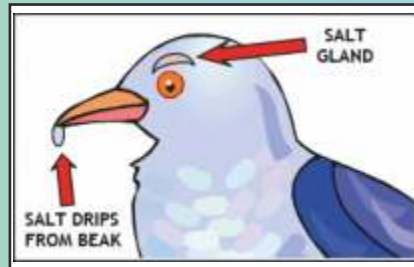
Most of the water on earth is too salty to drink. In some countries, where there is too little fresh water, engineers have designed special machines called *desalination plants*, which remove the salt from seawater and make it fit to drink. These plants are very large and expensive.

Some creatures, such as sea turtles and sea-birds, have to drink seawater, so how do they survive? They have special salt glands in their heads, which remove the salt from the water they drink and allow it to escape from their bodies. Sea turtles lose salt through their eyes – which make them look as though they are crying! In seabirds, the salt collects just above their beak, and they get rid of their salt sneezing it from their nostrils! Some plants, like mangrove trees, are also able to live in seawater. The salt comes out as crystals on their leaves (right), which are then washed away by rain.

God designed these "desalination plants" to enable these animals and plants to cope with seawater. They couldn't have evolved gradually, otherwise they would never have survived. —*Geoff Chapman*



Sea Turtles lose salt through tears



How a Herring-Gull gets rid of salt



By Peripitus: Wikipedia

## Water is powerful!

Moving water is very powerful. For hundreds of years people have used water wheels like the one on the right to drive machinery for such things as grinding corn. Today, water power is often used to make electricity. Usually a dam is built across a river (below right), and as the water flows through it turns *turbines* which produce the electricity.

Water can also be very destructive when floods happen, sometimes washing away roads (below) and carving canyons in rock in a short time (below centre). The Bible tells of a flood that once swept over the whole world. This changed the shape of the earth's surface, and we can still see its effects now.



By Daniel Casey: CC BY-SA 3.0



By Mark A Wilson: Wikipedia



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## WATER IS PRECIOUS!

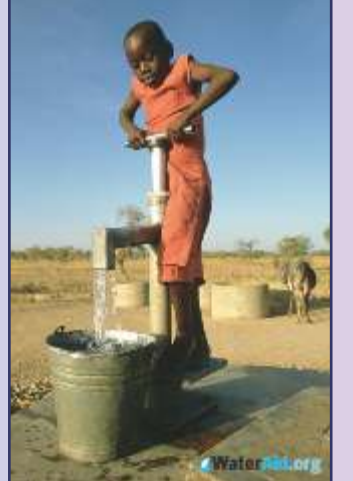


Most of us only have to turn on a tap to get all the water we need, and we expect our water to be clean and safe to drink. Sadly, in many parts of the world there is no clean water. Millions of people, including children, have to get their water from dirty rivers and ponds, and lots of people die every year from diseases they catch through drinking this dirty water.

Many charities are working to provide clean water for everyone. Why not find out more about them and help them provide more people with clean water? See [www.wateraid.org](http://www.wateraid.org)



By Bob Metcalfe: Wikipedia

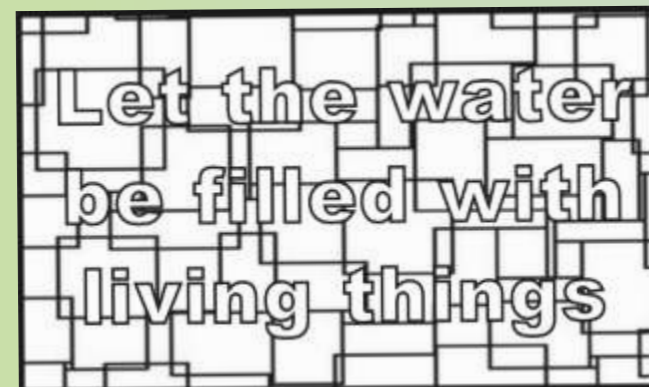


Imagine having to get your water from a dirty pool, like this girl in Tanzania. A well and water pump (right) make a wonderful difference and save lots of lives.

CLOUDS  
FLOOD  
ICE  
LIQUID  
POWER  
RIVERS  
SEA  
SNOW  
STEAM  
VAPOUR  
WATER  
WELL

## PUZZLE CORNER

Colour in the background pattern to read what God said on the fifth day of creation



(Answers on the next page)

Find the words in the square



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