

# WEIRD and WONDERFUL

## The Mayfly

**M**AYFLIES live a really weird life. They begin as eggs laid in water, which hatch into whiskered nymphs that live for two or three years underneath stones on the bed of rivers or streams. Then, one spring morning, each nymph floats to the surface, and turns into a dark flying insect called a "dun", which flies off and lands on a plant or twig. This stage lasts no more than a few hours — sometimes only minutes — before another change happens. The insect's skin splits open, and a mayfly emerges, complete with beautiful wings. In some parts of the world thousands of mayflies take to the air at once — a truly amazing sight.

Strangely, this stage of the mayfly's life is also short — less than a day in fact! During this time the insects eat nothing, but spend their final hours finding a mate. The females lay their eggs in the water, and both males and females die. Then the whole life-cycle begins again.

Although other insects go through a nymph stage before they moult, and emerge with wings, mayflies are the only insects which take a two-stage step into flight: from nymph, to dun, to fully-fledged mayfly. Evolution can't explain how this strange life-cycle began. The fossils are no help, since mayfly fossils have been found in rocks that evolutionists claim are 300 million years old. Mayflies have also been found trapped in amber, said to be over 65 million years old.



Mayfly trapped in amber



Main picture: a mayfly, newly emerged. Inset: a mayfly nymph.

**We don't believe these fossils are as old as that, but they do show us that mayflies have always been mayflies, and have not evolved from anything else. They are part of God's weird, yet wonderful creation!**

Wikipedia photo by Richard Bartz

## Finding the way

The way that many creatures navigate around the world is really amazing. Scientists say they do it by instinct — which means they are programmed to do it, like a computer. We believe God designed them with the ability to make these long journeys, so they do what they were created to do.

We are travellers, too. Our journey is through our lives here on earth. The birds, fish and insects that migrate don't really have a choice, but we do. We can choose to live God's way or our own way. In the beginning, Adam and Eve chose to disobey God, and brought sin, death and suffering into the world. Living without God is like going on a journey without a map or compass. We are likely to get lost. But God doesn't want us to be lost, and sent Jesus, His Son to earth to be our Friend and Guide, and to die on the cross for our sin. "God gave his Son so that whoever believes in him may not be lost, but have eternal life." (John 3: 16). Jesus rose from the dead so that all who put their faith in Him will go to heaven when their life on earth is over. God has also given us a guide-book that tells us all we need to know for the journey of life — the Bible. Jesus said "I am the way." (John 14: 6). So follow Him, and the Bible's advice, and you will never lose your way, but will be sure of reaching your destination!



### PUZZLE ANSWERS

**Bible verse:**  
 The storks, doves, swifs and thrushes know when it is time to migrate." (Jeremiah 8: 7)  
**Spot the difference:**  
 1. Missing birds. 2. Petal colours. 3. Leg colour. 4. Leaf colour. 5. Worm colour. 6. Missing plant. 7. Extra flower. 8. Extra worm.

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Printed by CPO Worthing



## NATURE'S AMAZING TRAVELLERS

When people go on a long journey they often need some kind of direction. So how do birds, insects, fish and many other animals manage to find their way long distances?

### Finding our way



People often use maps to help them when they travel a long distance (left). Maps show us where we are, where we want to go, and how to get there. Where there are no roads or signposts, a compass can be used. The needle points towards the North Pole, attracted by the earth's magnetic field. For centuries sailors used the sun and stars to navigate. Many drivers now use

a "SatNav" (below right), which receives signals from a satellite orbiting the earth to guide them, showing the directions on a small screen.

Animals use a number of methods to guide them on some very remarkable journeys.



Pigeons have their own "compass."



For centuries people have wondered how pigeons find their way home over long distances. Some can fly 500 miles in a day. As long ago as 2,900 BC, the ancient Egyptians used pigeons to carry "air mail" messages, and they were also used to send messages during the Second World War. Scientists have now discovered that pigeons use the earth's magnetic field to navigate. Using X-Rays these scientists discovered that pigeons have tiny iron particles in their upper beaks which change direction like a compass needle. Compasses didn't come into being by chance — they were designed. The pigeons couldn't have evolved the "compass" in their beaks. This must have been designed too!

### The Incredible journeys of fish

Salmon (right) begin their lives in rivers or freshwater lakes, but travel to the ocean, swimming as much as 3200 km (2,000 miles) where they spend up to 4 years feeding. They then travel back to the river they came from to lay their eggs! They will even leap up waterfalls if necessary. Scientists don't fully understand how they find their way home, but believe the fish are guided by their sense of smell.

European Eels (below) undertake an incredible 5,000 km (3,125 mile) journey, from rivers to part of the Atlantic Ocean, known as the Sargasso Sea. There the females spawn (lay their eggs) and die. The tiny "elvers" then begin a 300-day swim along the Gulf Stream, back to where their parents came from. Although many are eaten by predators, some make it back, even wriggling through wet grass to find the right river or lake. When the eels are mature they start all over again. How they find their way is a mystery, though some scientists believe they may follow the earth's magnetic field.



Wikipedia photo by Hans-Petter Fjeld

Wikipedia photo by Ron Offermans

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## MONARCHS' MARATHON

Monarch butterflies (right) are one of nature's most amazing travellers. Every year millions of them migrate from Canada to the southern USA and Mexico to spend the winter — a distance of 4,000 km (2,400 miles) — covering 128 km (80 miles) a day! What is even more amazing is that the



butterflies that fly south have never been there before, and the ones that return the following spring are not the same ones which flew south in the autumn! This is because the butterflies only live for a few months.

In the spring, as they fly north, the females lay eggs (left) and die. The eggs hatch, and after going through the caterpillar and chrysalis stage, the newly-hatched butterflies continue the journey their parents began. But even this generation won't live long enough to complete the journey, so another lot of eggs must hatch. The butterflies which eventually arrive back where the migration started have never been there, and may be the great-grandchildren of those that left the previous year!

How do these tiny insects find their way year after year? Scientists have discovered that monarchs

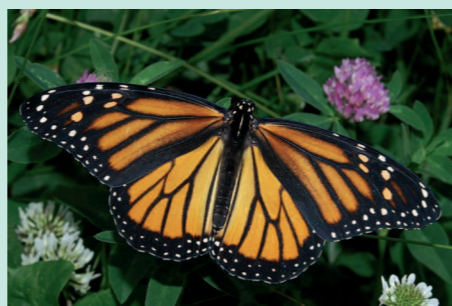
have tiny "clocks" in their feelers (antenna) which help them use the sun's position to navigate. But even this doesn't explain how they can fly to places they have never seen. They must have been specially created by God with the ability to do this.



Painted Lady  
 Wikipedia photo by Alvesgaspar

### Lady's Flight

Painted Lady butterflies breed in early spring in the Sahara desert of Africa. Millions of them hatch, then they fly north to England and other parts of western Europe, a journey of about 3,300 km (2,000 miles), where they spend the summer. In the Autumn they fly south again to North Africa — another amazing journey!



Wikipedia photo by Kenneth Dwan Harrison

## Fantastic flyers

**B**IRDS are some of the most amazing of nature's travellers, flying from one part of the world to another, often across wide oceans, to breed and find food. Here are just five of them.

**Golden Plovers** nest in Canada and Alaska. After the young have hatched, the parents fly south over the Atlantic Ocean to Argentina, 16,000 km (10,000 miles) away. Later, the young birds follow, taking a different route over the land, and arrive safely in the same place, even though they have never been there before!

**Short-tailed Shearwaters** nest in the Bass Strait between Australia and Tasmania during the summer. After the young have hatched, they fly north-west over the Pacific Ocean to Japan, then to an island near Alaska. They return south in autumn and arrive in time to lay their eggs between November 24th and 26th every year, having flown about 32,000 km (20,000 miles)!

**European Barn Swallows** spend the winter in southern Africa, returning to Europe every spring — usually to the very same barn or roof — to lay their eggs and hatch their young. They then fly south to Africa again, a distance of about 8,000 km (5,000 miles), covering 200 miles a day.

**Blackcaps** fly from northern Germany to the Mediterranean Sea, then south to Kenya, where they spend the winter. They fly at night, and by placing some birds in a planetarium with an artificial sky, scientists have discovered that they use the stars to guide them. It seems that blackcaps have the pattern of the stars stored in their brains.

However, the winners must be **Arctic Terns**. Although no larger than a thrush, these birds fly from the Arctic to the Antarctic and back every year — a total distance of 40,000 km (25,000 miles)! This means that they enjoy endless daylight and continuous summer!

None of these birds could have learned how to migrate gradually. We believe God created them with the ability to make these amazing journeys.



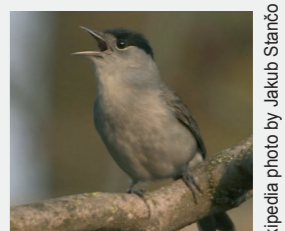
Golden Plover



Short-tailed Shearwater



Barn Swallow



Blackcap

US Fish & Wildlife Service

Wikipedia photo by Mike Baird

Wikipedia photo by Samsee

Wikipedia photo by Jakub Slančo



Arctic Tern

Wikipedia photo by Erik Christensen

## NATURE NOTES by the editor



Photo © Steve McWilliam Dreamstime.com

During the summer months many people spend time at the sea-side. Have you ever explored rock pools on the seashore? If so, you will have discovered that lots of creatures live in them — things like limpets, barnacles and mussels. They depend on the tides, which rise and fall twice a day, caused by the pull of the moon on the oceans (see *Our World* No. 87). The tide brings water into these pools, and along with it comes food for the creatures that live there. They are fixed firmly to the rocks, so they can't move around to find food. Barnacles use specially designed legs to reach out and capture food particles from the water. Mussels, which stick to the rocks with a specially designed foot, are "filter feeders". They suck water in through a siphon and trap food particles. If you look carefully at the sides of a rock pool, you can tell how high the tide rises by the position of these creatures, which can only survive for a short time without water.

Barnacles and mussels stick to rocks with a special underwater glue. Scientists have studied this, and have been able to copy it to make strong glue that works in wet conditions. If we had no moon, there would be no tides, no rock pools, and none of the interesting creatures that live in them. If you explore rock pools this summer, remember how wonderfully God has designed everything in the world, and how we can learn so much from the things He has made.

—Geoff Chapman



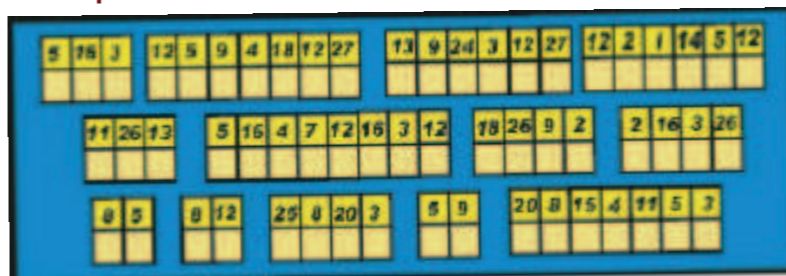
Above: Limpets and barnacles.  
 Below: Mussels



Wikipedia photos by Mark Wilson

## PUZZLE CORNER

Decipher the Bible verse using the keyboard below



(Answers on the next page)

Can you spot eight differences between pictures one and two?

