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Artist's impression of some of the newly discovered stones. Inset: aerial photograph of Durrington Walls

STONEHENGE TWO?

Stonehenge is in Britain. Recently, a survey of a large area of land surrounding the stone circle began. It's called the Stonehenge Hidden Landscapes project. Its purpose is to look for traces of ancient buildings, graves, earthworks and henges that may be hidden under ground. A henge is a circular structure made of earth. It has a bank on the inner side and a ditch on the outside.

On September 7, an archaeologist working on the project made a dramatic announcement. He said that a new site had been discovered. It is one of Europe's largest stone monuments. The buried stones are only 1.9 miles (three kilometers) away from Stonehenge. Thousands of years ago, the site may have had as many as 200 standing stones. Most were about 15 feet (4.6 meters) tall. Stonehenge has 90 stones. The biggest are over 23 feet (seven metres) high.

Stonehenge is one of the world's most famous ancient monuments. It is made up of two circles of standing stones. Archaeologists believe that it was constructed over a very long period. They suspect that the site was used for hundreds of years before any stones were erected, or put up. The whole structure took several hundred years to complete. The first stones were erected around 2,500 BCE, or 4,500 years ago. This is about the same time that most experts believe the Great Pyramid of Giza, in Egypt, was built.

Stonehenge had a large outer circle of standing stones. This was made from upright stones with lintels, or horizontal stones, on top of them. Inside was a circle of bluestones. These were smaller than the outer circle of stones. They had no lintels. Archaeologists are puzzled by the bluestones. This is because they

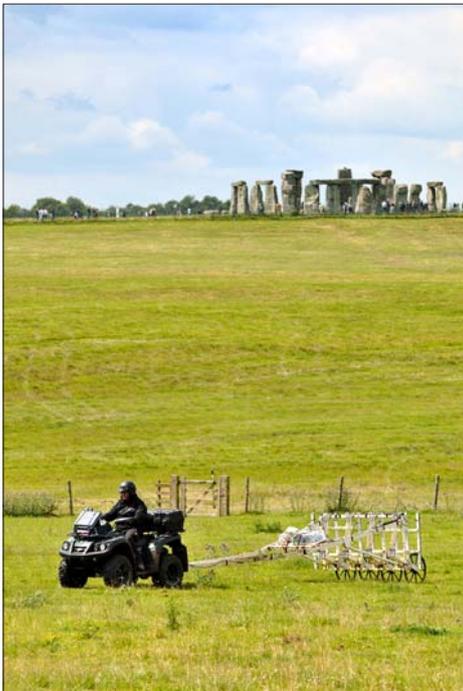
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came from a place over 240 miles (385 kilometers) away. It's not known why the people who built Stonehenge wanted to use them. Transporting these heavy stones over such a long distance must have been very difficult.

The taller stones are called sarsen stones. The stones in the outer circle are also sarsens. These stones probably came from a place about 25 miles (40 kilometers) away. It's thought that the bluestones were the first to be erected.



Using ground-penetrating radar near Stonehenge

No one really knows what Stonehenge was used for or why it was built. There are many ideas, or theories. It may have been a temple, a meeting place or a graveyard. A few people think it was a place where animals or even humans were sacrificed. Others say the monument was where a person's body was taken after they died. Their bodies were then burned, or **cremated**. Another idea is that people traveled to Stonehenge if they were ill or had something wrong with them. In



Artist's impression of what the horseshoe-shaped structure may have looked like 4,500 years ago

recent years tests have been done on human and animal bones dug up nearby. These show that people travelled to Stonehenge from hundreds of miles away.

Nowadays, most people believe that Stonehenge was used as a type of "calendar". Some stones line up with places on the horizon where the Sun rises on Midsummer's Day and sets at midwinter. The stone circle could therefore have been a way of tracking how the Sun appears to travel across the sky during different seasons.

The newly discovered stones are at a place called Durrington Walls. This is a large circular structure, or henge. With a diameter of 1,640 feet (500 meters), it is four times bigger than Stonehenge. Some people say that Durrington Walls was a fort. Yet archaeologists say that this is very unlikely. They think it was designed to be a huge arena where hundreds of people gathered. Some time ago the site of a woodhenge was found next to Durrington Walls. This was similar to Stonehenge, but made of tall wooden posts.

People working for the Stonehenge Hidden Landscapes project have been using ground-penetrating radar devices. These are pulled over the land by small vehicles. If anything is buried just below the surface, the radar records its shape. It will also detect areas where the ground has been disturbed in the

past. Over thousands of years earth banks of henges may be eroded, or worn away. Ditches can be filled in. This may mean that a henge is no longer visible. Yet the ground-penetrating radar will still record a circular shape and exactly where it used to be.

The radar detected the stones of the new site. They are buried below the surface. The stones are in a section of the earth bank that forms Durrington Walls. The archaeologists say that Durrington Walls was not always a circular shape. At first an earth structure was built in the shape of a large horseshoe, or "C". The stones were in a line along the edge of one side of the horseshoe. About 4,500 years ago they were pushed over. The archaeologists believe that this was done deliberately. Some stones were taken away. However, others were buried within the earth banks of Durrington Walls. It's not known why this was done.

In the past Durrington Walls was not thought to be important. A main road was even built through it. One archaeologist admitted that "the more we find out about places like Stonehenge and Durrington Walls, the less we know". ■

Artist's impression images by
Ludwig Boltzmann Institute for
Archaeological Prospection and
Virtual Archaeology

INTERNATIONAL MOTOR SHOW

The International Motor Show (IAA) opened on September 17. Held in Frankfurt, one of Germany's largest cities, it is the biggest auto show in the world. The first IAA was held over 100 years ago. The event, which is often called Frankfurt Motor Show, lasts for ten days.



International Motor Show Frankfurt

Nowadays, the motor show alternates between Frankfurt and Hannover, another large German city. In odd years (such as 2015) the show is for passenger cars. This takes place in Frankfurt. In even years the show is in Hannover. This one is for commercial vehicles. These are trucks, vans and other goods vehicles.

Around 15 of the world's biggest carmakers use the IAA to display their latest cars. Many have their own areas, often called pavilions, inside the huge exhibition hall. Usually the bosses of all the companies go to the show. This year Mary Barra traveled to Frankfurt to reveal the new Vauxhall Astra car. Ms Barra is the boss of General Motors (GM). Her company is one of the "big three" American automakers. Ms Barra is the first woman to lead one of the large international car manufacturers. Vauxhall Astra cars are made at a factory in Britain.

The other large American companies are Ford and Fiat Chrysler

Automobiles (FCA). Fiat is an Italian firm. It bought the American Chrysler Company about 18 months ago. Other big worldwide car making companies include: BMW and Volkswagen, from Germany, and Toyota, from Japan. Renault and Nissan have worked together for over 15 years. Renault is a French company and Nissan is based in Japan. The Renault–Nissan [Alliance](#) is fourth in number of cars sold. Toyota sells the most followed by GM and Volkswagen.

Companies display their "production" and "concept" cars at the Frankfurt show. Production cars have already been fully designed and tested. Therefore they are ready or almost ready to go on sale. Concept cars are different. Car companies may only ever make one or two of each concept car. Most are built to test new ideas. Concept cars are also a way for designers to try and work out how cars might look in the future. They are unlikely to be built and sold. Yet some of their designs and technology may be used in the future production cars.



Toyota's new Prius

This year many companies displayed new SUV vehicles. SUV stands for "sport utility vehicle". These types of cars are usually larger and have four-wheel drive. They can be driven "off road" and in bad weather such as snow and ice. Bentley and Jaguar both displayed their first ever SUVs at the show.

These companies are based in Britain. Both are better known for their luxury cars. Volkswagen now owns Bentley. Tata Motors, an Indian car maker, bought the Jaguar Company, eight years ago.

Most car manufacturers have been working on new technologies to reduce the amount of pollution their cars produce. Many displayed new electric cars or cars that use hydrogen. Others showed off hybrids. These are cars that run on both gas and electricity. The biggest selling hybrid car is Toyota's Prius. These cars were first sold around the world 15 years ago. Toyota used this year's IAA to unveil its latest Prius model. ■

NEW HOMININ DISCOVERED

Scientists in South Africa made an important statement on September 10. They announced that they had discovered some ancient bones deep inside a cave. The bones, they explained, come from a new hominin species. Hominin is the name used for humans and all species related to humans.

The new hominin has been given the name *Homo naledi*. This means that it is part of the *Homo* genus, or group. This is the genus to which modern-day humans belong. In a local language "naledi" means star. The bones were found in a cavern called the "Rising Star" cave. In the past, bones from other ancient hominins have been discovered in the same area. For this reason this part of South Africa is often called the "Cradle of Civilization".

Normally, only small [fragments](#) of ancient hominin bones are found. The discovery in the Rising

Star cave was very different. The scientists managed to dig up 1,550 bones. They are believed to have belonged to 15 individuals. It took many months to get all the bones out of the cave. In 2013 some cavers told the scientists that they had seen some ancient bones in the cave. The bones were in a large chamber. However, in places, the passageway that leads to it is only seven inches (18 centimeters) wide. Therefore the chamber is very difficult to get to. What's more, the passageway enters the chamber near its ceiling. From there, it is a long drop to the floor of the chamber.



Homo naledi bones (Lee Roger Berger research)

The scientists advertized for six female paleoanthropologists. These are researchers who study ancient humans and ancient human fossils, or bones. The women needed to be thin and not too tall. This was so they could get through the narrow tunnel. Over 60 people applied. Six were selected. They came from several countries. Working in pairs, the women took turns digging up the bones in the chamber.

Trying to work out early human history, or evolution, is difficult. Modern humans are known as *Homo sapiens*. So far, eight other

members of the *Homo* genus have been discovered (including *H. naledi*). Most of them lived in Africa. The oldest was alive about 3.5 million years ago. Some species lived at the same time as others. The most recent (apart from modern-humans) was *Homo neanderthalensis*, or Neanderthals. Like modern-humans, Neanderthals, over a long period, moved out of Africa to other parts of the world. They lived in Europe, the Middle East and parts of central Asia. The last Neanderthals died out about 40,000 years ago. No one knows why.

The scientists have not been able to date the *H. naledi* bones. So they are not sure when this hominin lived. Things found nearby can often be used to date bones like these. These could be certain types of rock or animal bones. However, nothing has been found in the cave that could help date the bones. *H. naledi* was about five feet (1.5 meters) tall. It had a small brain. Yet its feet and hands are more human-like.



Homo naledi skull (University of the Witwatersrand)

From the hominin's appearance, the scientists think that the bones are around 2.5 million years old. If this is correct, *H. naledi* lived just before *Homo erectus* appeared. Of all the *Homo* genus, *H. erectus* was the most "successful". These hominins survived for 1.6 million years. They died out about 200,000 years ago. Thus, modern humans have existed for about 400,000 years.

How the bodies of the hominins got into the cave is a mystery. The scientists think that they may have been deliberately put there, or buried. If true, *H. naledi* must have been able to use burning torches. This would mean that these hominins lived in organized groups or communities. ▣

FISHING CATS

A wildlife organization in Cambodia has photographed two fishing cats. These animals are very elusive. This type of cat has not been seen in the country for 13 years. Pictures of the fishing cats were taken in different parts of the country. They are about twice the size of domestic, or pet, cats.

Camera traps took the photographs. Recently, the wildlife organization put 32 camera traps in five different parts of Cambodia. Workers at the organization set up the traps as part of a wildlife survey. There are several types of camera traps. Some are motion sensitive. So any nearby movement activates the camera. Others have a heat sensor. When an animal comes close, its body heat automatically triggers the camera.

Many cats are known not to like water. Fishing cats are different. They live in wetlands. These are low-lying areas where there are swamps, marshes, lakes, and slow moving rivers and streams. The cats prefer places with thick, or dense, vegetation. The animals are known to live in parts of Nepal, Bangladesh, Sri Lanka, and southern India. They are also found in several South East Asia countries such as Myanmar (also known as Burma), Thailand, Laos, Cambodia, and Vietnam. However, fishing cats have not been

seen in Laos and Vietnam for a very long time.

Fishing cats are very good swimmers. Their legs look a bit short for their **stocky** bodies. The animals' tails are a flattish shape. The cats use them to steer, or as a type of rudder. The animals have olive-gray fur with dark spots. On the top of their heads and along their backs, the spots join together to form dark lines, or streaks.

Adult fishing cats are believed to be nocturnal. This means that they are more active at night. They are also solitary, so fishing cats live on their own. They can spend a lot of time swimming. The cats have even been recorded swimming for long distances under the water. They mainly eat fish. Yet studies have shown that fishing cats also feed on frogs, snails, snakes, rodents, and aquatic birds such as ducks.



Fishing cat (Duloup)

Larger animals such as tigers and bears may prey on fishing cats. Yet the greatest danger to these animals is habitat loss. More and more land where they live is being used for roads, buildings and farming. Many wetlands have been drained or polluted. Another problem is animal traps. Some fishing cats are still deliberately caught for their skins. The animals are now listed, or classed, as an endangered species.

After discovering that fishing cats are living in Cambodia, the wildlife officials made a

conservation plan. They plan to protect the areas where the cats were recorded. If this is done, the number of cats living in Cambodia should increase. ■

WEARABLE SMOG?

A designer from the Netherlands has created a large new device that cleans the air. It does this by removing all the pollutants, or dust particles, in dirty air. The device is called the Smog Free Tower. The designer also makes cubes of carbon out of the collected particles. He calls them "gem stones". The small cubes can be set onto a ring or made into cufflinks.

The word "smog" is used to describe heavy air pollution over cities. It is a mix, or combination, of the words "smoke" and "fog". The word became commonly used in Britain in the 1950s. Then, many people burned coal to warm their houses. Smog would form over cities if the weather was foggy and there was no wind. Smoke particles became attached to water droplets in the air. It was difficult to see very far in the thick smog. Breathing in the smoke particles made some people ill.



Smog Free Tower (Studio Roosegaarde)

Nowadays, the air in Britain is much less polluted. However, many of the world's cities have very bad air pollution. This can get worse at certain times of the year. Much of this pollution comes from the fuel

that cars, trucks and buses use. China still burns a lot of coal in many of its big power stations. Seven of the world's ten most polluted cities are in China. It's estimated that smog kills 4,000 Chinese people a day. Most are older people who already suffered from breathing problems. Twenty-five percent of people in the U.S. live in places where there is bad particle air pollution.



Gem stone ring (Studio Roosegaarde)

The Smog Free Tower is 23 feet (seven meters) tall. It looks like a giant air filter or purifier. Polluted air is sucked into the top of the tower. Ions are atoms of molecules with an electric charge. The tiny particles of carbon and other pollutants in the air are attracted to positively charged ions in the tower. The ions are then pulled to the inner sides of the tower by its negatively charged surface. There, the particles are collected and the clean air released. The tower uses a small amount of electricity, which can be generated by wind power.

Carbon particles are a common pollutant. Diamonds are made from carbon. They are formed when extreme pressures compress carbon. The gem stones made from the carbon particles are put inside see-through acrylic cubes. The designer has invited people to invest small amounts of money in his company. This will be used to build more towers. People who invest in the company can buy the ring and cufflink

gem stones. Each is made from the carbon particles in 35,300 cubic feet (1,000 cubic meters) of air.

The designer claims that his Smog Free Tower can clean 1,060,000 cubic feet (30,000 cubic meters) of air in one hour. So far, only one tower has been set up. It is in the Dutch city of Rotterdam. This is where the designer's company is based. He now plans to make many more towers. The first ones will be sent to countries such as China, India, Mexico, the U.S., and France. There, the towers will be set up as demonstrations. The designer hopes that officials from very polluted cities will decide to buy the Smog Free Towers. ■

AUSTRALIA'S NEW PRIME MINISTER

Malcolm Turnbull was sworn in as Australia's new prime minister on September 15. He is Australia's fifth prime minister in as many years. Mr Turnbull replaced Tony Abbott who was forced to stand down.

Like many other countries with a parliamentary system of government Australia has a lower and an upper "house". The lower house is known as the House of Representatives and the upper house is called the Senate. In Australia, elections are held every three years. Unlike many other countries, voting in Australian parliamentary elections is compulsory. People who don't vote have to pay a fine.

The prime minister is the leader of the party that has the most seats in the House of Representatives. Therefore it is the party that wins the majority of seats in the lower house that forms the country's government. The lower house has 150 seats. To have a majority, or be able

to outvote the other parties, the government needs at least 76 seats.

The two main political parties in Australia are the Labor Party and the Liberal National coalition. The coalition, which is usually called the Liberals, is made up of two parties that work closely together. The last election was held two years ago. The Liberals won 91 seats and the Labor Party got 55. The remainder went to one smaller party and several independents. These are people who are not members of any political party.



Tony Abbott

Tony Abbott was the leader of the Liberals at the last election. As his party won the most seats, he became the country's prime minister. At first, Mr Abbott was a popular leader. However, in recent months, he has made several controversial decisions. One example was to give a knighthood to Prince Philip. Also known as the Duke of Edinburgh, he is Queen Elizabeth the Second's husband. Many Australians thought that this was a strange thing to do. Mr Abbott has also made several gaffes, or blunders. These are unplanned remarks that cause embarrassment.

Mr Turnbull was first elected to Australia's parliament in 2003. He is a former lawyer and successful businessman. Mr Turnbull, who is also a member of the Liberal Party, is a popular politician. He worked for Mr Abbott as one of his government's senior ministers. In Australia people can challenge the head of their party for the leadership. When this happens, the party's elected members hold a vote. If a party leader loses this vote, he or she has to step down immediately. After speaking with other Liberal members of parliament, Mr Turnbull decided to challenge Mr Abbott.

Mr Turnbull said that he thought that the country needed a new leader. The next election will be held in 12 months' time. Mr Turnbull claimed that many Liberal Party members feared they might lose with Mr Abbott in charge. A vote was held on the same day that Mr Turnbull made his challenge. Fifty-four people voted for Mr Turnbull and 44 backed Mr Abbott.



Malcolm Turnbull being sworn in as Australia's new prime minister (gg.gov.au)

Three years ago a similar thing happened in the Labor Party. Then, its leader, Julia Gillard, was prime minister. Kevin Rudd, who was one of her senior ministers, challenged her for the leadership. He won. However, a few months later the Liberals easily beat his party at the election. ■

TERMITE AIR-CONDITIONING

Termites are a type of insect. There are many termite species. The insects live in most parts of the world. Some termites make huge mounds. Others build underground nests. Mound-building termites are found in Australia, India, Africa, and South America. Scientists have always known that termites must be “clever engineers”. Now, a team of researchers from the U.S. have discovered that their mounds even have air-conditioning.



Termites

Termites have six legs. Most are about 0.4 inches (9.5 millimeters) long. In Australia, termites are known as “white ants”. They eat wood. Termite mounds can be over 16.5 feet (five meters) tall. The insects make them from soil and partly digested wood. Termites stick these together with saliva and feces. When dry, this mixture is very hard. Some animals, birds and bigger insects eat termites. Yet termites are usually safe inside their mounds. Their homes can be amazingly long lasting. One mound recently found in Africa is thought to be 2,000 years old.

Bigger mounds contain as many as three million termites. Each mound or colony has a queen. The queen can live for 25 years. It lays eggs all the time. A queen is able to produce one egg every 15 seconds,

or 30,000 per day. Unlike ants and bees, a termite colony also has a king. The king and queen continue to mate until one dies. Termite colonies have tens of thousands or millions of worker and soldier termites. Workers build and repair the mounds. Soldiers protect it, usually from attack by ants.

Termite mounds have few entrances and no windows. Scientists have often wondered how air seems to pass through them. If this did not happen, the inner parts of the mound would become far too hot. There have been several ideas, or theories, about how the inside stays cool.

The American researchers now think that they know the answer. They studied several termite mounds in India. Some had termites living in them. Others were **abandoned**. The researchers did a number of tests. They blew air over the mounds and recorded outside temperatures during the day and at night. They used large plastic sheets to cover the mounds. This blocked off the air. The researchers also used special devices, which could be pushed into the mounds. These measured inside temperatures. They even sucked air in and out of the mounds with vacuum cleaners.



Termite mounds

Many people thought that wind blowing over a termite mound changed the air pressure inside. This then helped the air to flow in and out. However, the researchers say

that this is not what causes the air flow. They discovered that changing outside temperatures controls the air movement. Each mound has a chimney. This is like a tube that goes from the bottom to the top of the mound. Even though the chimney has thick walls, tunnels inside the mound are connected to it.

During the day, sunlight heats the outer part of the mound. The inner chimney stays cooler. Its thicker walls stop it from becoming as warm as other parts of the mound. Warmer air in the tunnels is then “pulled” into the cooler chimney. It rises up the chimney and out of the mound. At night the opposite happens. As the surrounding air gets cooler, it sinks into the chimney. This cooler air is then “pushed” through the connecting tunnels. Therefore, during the day and night, air is always flowing through the mound.

The researchers describe a termite mound as being like a large lung. Yet, it only breathes in and out once every 24 hours. During the day the mound breathes out and at night it breathes in. Copying the design of termite mounds might help reduce the need for air-conditioning in people’s homes and larger buildings. ■

OCEANIA MEETING

Leaders and senior officials from 16 Oceania countries traveled to Port Moresby on September 8. This is the capital of Papua New Guinea (PNG). There, they took part in a three-day meeting, or summit. This annual meeting is called the Pacific Islands **Forum**.

Peter O’Neill is the prime minister of PNG. He hosted the summit. PNG occupies the eastern half of New Guinea. This is one of the

world's largest islands. In the past, parts of New Guinea were controlled by Germany, the Netherlands and Britain. Later, it was administered by Australia. The western half of New Guinea now belongs to Indonesia. PNG finally became a fully independent nation in 1975.

The Pacific Islands Forum first met in 1972. This year was its 46th summit. A secretary-general leads the organization. This person is normally appointed for three years. Meg Taylor is the Forum's current secretary-general. She is a lawyer and diplomat from PNG. Ms Taylor is the organization's first woman leader.

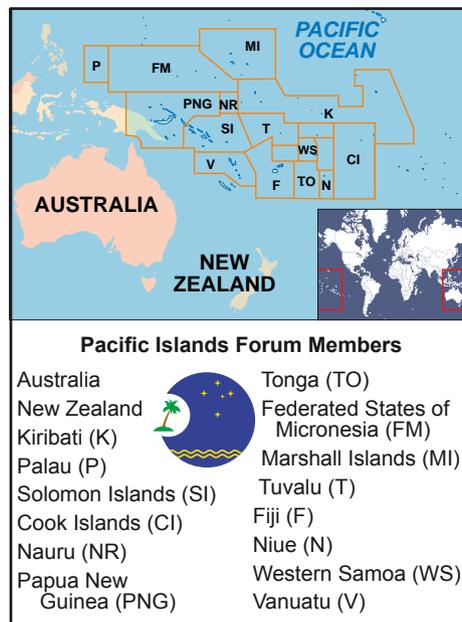
The Forum's members include Australia, New Zealand, PNG, and 13 Pacific island nations. This part of the world is known as Oceania. Not all member countries' leaders attend these meetings. Senior ministers often represent some countries. Unusually, this year, the prime ministers of Australia and New Zealand, Tony Abbott and John Key, both took part in the summit.



Pacific Islands Forum leaders in Port Moresby

Fiji's foreign minister was at the meeting. This was the first time that Fiji had been invited for six years. In 2009 the Forum voted to [suspend](#) the country. This was because leaders of Fiji's military forces deposed the prime minister and took over the country. The military commanders declared that a new election would be held. However, they did not say when it would happen. This was the

first time that the Forum had suspended one of its member countries. Australia and New Zealand are the Forum's biggest countries. Their leaders insisted that Fiji could not rejoin until it had a democratically elected leader. An election was eventually held in Fiji 12 months ago. The Forum's suspension was canceled, or lifted, soon afterwards. Frank Bainimarama is now Fiji's elected prime minister. He is a former leader of the country's armed forces.



A number of topics were discussed at the forum. They included climate change, illegal fishing and health. Many of the Pacific islands are coral atolls. Some are only a few feet above the sea. Sea levels in the Pacific Ocean are rising. Most scientists believe that this is a result of climate change and an increase in average world temperatures. Many of the Forum's island members are worried about rising sea levels.

The number of fish in the Pacific Ocean has been decreasing. This is because too many are being caught. Forum leaders talked about a ban on large commercial fishing boats. Some island members, such as

Kiribati, have set up protected areas in their surrounding seas.

The increase of non-communicable diseases is a problem in many Pacific island countries. These diseases are non-infectious. They cannot be passed from one person to another. Examples are: asthma, cancer, diabetes, and heart disease. Nowadays, many people living on Pacific islands are overweight, or obese. Smoking is popular. Obesity and smoking can cause diabetes and heart disease. ■

MECCA ACCIDENT

A large crane toppled, or fell, over in Mecca, in Saudi Arabia, on September 11. The crane crashed through the roof of part of the Grande Mosque. The building surrounds the Kaaba, which is Islam's holiest site. The disaster happened as Mecca is preparing for the annual Hajj. Officials in Saudi Arabia said that the accident would not disrupt the annual [pilgrimage](#).

This year's Hajj begins on September 21. It lasts for seven days. There are about 1.6 billion Muslims in the world. It is the duty of all Muslims to travel to Mecca for the Hajj at least once in their lives. This is as long as they are healthy enough, and can afford to go on the pilgrimage.

The Hajj is what's known as one of Islam's "five pillars". This means that it is one of the most important, or fundamental, things on which Islam is based. A pilgrimage to Mecca is a spiritual journey. Muhammad was born in Mecca about 1,400 years ago. All Muslims believe that he was a prophet and God's messenger. The Hajj is meant to help Muslims commit to their faith and cleanse their souls.

The pilgrims perform ceremonies that represent important ideas of the Islamic faith. As well as visiting Mecca, they travel to Mina and the valley of Mount Arafat to perform different [rituals](#). For instance, at Mina, pilgrims throw stones at pillars called the Jamarat. This represents throwing stones at the Devil. Mina is about three miles (five kilometers) from Mecca.



The Grand Mosque, in Mecca, during the Hajj

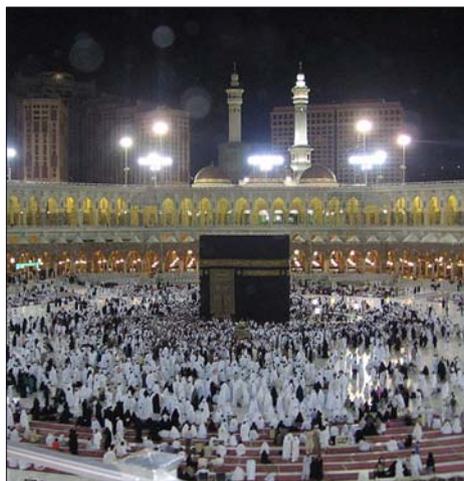
Nowadays, many pilgrims travel to Mina by road. They can use one of the 20,000 buses, or a specially built electric train. Yet thousands still decide to walk. At Mina, Saudi Arabian authorities have built a large tented camp for the pilgrims. Each tent is made from a special material that cannot catch fire.

At the end of the Hajj, pilgrims return to Mecca for a special ceremony. They walk around the Kaaba. This is a cube-shaped building covered in black cloth. It is in the center of the Grand Mosque. This is what Muslims face, wherever they are in the world, when taking part in daily prayers. Pilgrims in Mecca walk round, or circle, the Kaaba counterclockwise. This is so their hearts face towards it.

In recent years there has been a lot of building work at Mecca. A few years ago, a huge complex next to the Grande Mosque was completed.

The central part is a hotel. The building is one of the world's tallest. It also includes large shopping areas, or malls, and apartments. Near the top of the central tower is the world's biggest clock. At night its huge clock faces glow a green color.

Parts of the Grande Mosque are 1,400 years old. The building is now being enlarged. When the work is finished, the mosque will be big enough for two million people. Currently, more than ten tall cranes are close to the building. It was one of these that fell. The crane toppled over during a storm. There had been violent sand storms in many parts of Saudi Arabia in the days before the accident. The crane that fell was a "crawler crane". These are on tracks, so they can be moved easily.



The Kaaba, in Mecca (Mardetanha)

Around 800,000 people were in the mosque at the time of the accident. Over 100 were killed and nearly 400 injured. Many who died were from Bangladesh, Egypt and Iran. The day after the incident, Saudi Arabia's leader, King Salman, traveled to Mecca. He visited the hospital where many injured people are being looked after. The King said that there would be an investigation to find out why the accident happened. ■

QUEEN ELIZABETH'S RECORD REIGN

On September 9, Queen Elizabeth the Second became the longest reigning monarch of the United Kingdom (UK). The UK is also known as Britain or Great Britain. On this date, Queen Elizabeth had been the country's monarch for 63 years and 217 days.

The UK's previous longest-reigning king or queen was Queen Victoria (1819 – 1901). Queen Elizabeth is one of Queen Victoria's great-great-grand-children. Born in 1926, Queen Elizabeth will be 90 years of age next year.

The history of the UK's royal family goes back about one thousand years. Since 1688, the country has been a constitutional monarchy. This means that the king or queen is the nation's head of state or figurehead. An elected prime minister and parliament run the country. The reigning monarch therefore does not make any important decisions. However, the prime minister has frequent meetings with the monarch. These are to let him or her know what the government plans to do.

Today, the UK is made up of four separate states: England, Scotland, Wales, and Northern Ireland. The UK's king or queen is the ruler of each state. Originally, England, Scotland, Wales, and Ireland were separate kingdoms. England took over Wales around 700 years ago. In 1603, Queen Elizabeth the First of England died. She had no children. The leaders of England then asked King James the Sixth (1566 – 1625) of Scotland to be king of England and Scotland. He accepted. This arrangement is known as "the Union of the Crowns". King James was a distant relative of Queen Elizabeth the First.

Around 100 years later Scotland had many problems. The parliaments of England and Scotland decided to form one kingdom with one parliament. The parliament in London, England's capital city, would run both England and Scotland. This agreement, or treaty, was finalized in 1707. It is called the "Treaty of Union" or "Acts of Union". Then, Scotland and England (which included Wales) became the United Kingdom.



Queen Elizabeth the Second (MOD)

English governments and wealthy English landowners had controlled Ireland for hundreds of years. Ireland formally joined the UK in 1801. In 1919 an independence war broke out. Two years later, the UK government signed an agreement with the Irish leaders who wanted their own government. This ended the war. Ireland then became a new nation called the Republic of Ireland. However, most people who lived in northeast Ireland did not want to join this separate country. This is why Northern Ireland is still a part of the UK.

Queen Elizabeth the Second's reign began in 1952 after her father, George the Sixth, died. She was 25

years old. As well as the UK, Queen Elizabeth is the head of state of 15 other countries. Together these are known as the Commonwealth realms. They include Canada, Australia, New Zealand, Jamaica and Papua New Guinea (PNG).



Queen Elizabeth the Second on the day of her coronation in 1952 (Victoria and Albert Museum)

Queen Elizabeth married in 1947. Then, her husband was called Prince Philip of Greece and Denmark. After their wedding he was given the title Duke of Edinburgh. They have four children. The eldest, Prince Charles, is expected to succeed his mother.

During Queen Elizabeth's reign there have been 12 UK prime ministers, 12 American presidents and seven popes, or leaders of the Roman Catholic Church. Currently, Queen Elizabeth is the world's second longest-reigning living monarch. The longest is King Bhumibol of Thailand (also known as Rama the Ninth). He became Thailand's king in 1947 at the age of 18. ■

TIBET'S ANNIVERSARY

Celebrations were held in Lhasa, the largest city in Tibet, on September 8. They included a big parade in which thousands of schoolchildren and soldiers took part. The event was organized by Chinese officials. It was held to celebrate the 50th anniversary of the formation, or set up, of Tibet as an [autonomous](#) region within China.

Tibet is a mountainous region in southern China. It is home to about three million people. Nearly all of Tibet is part of the Himalayan [Plateau](#). This is one of the highest regions in the world. Most people in Tibet live above 16,000 feet (4,900 meters). At this altitude there is less oxygen in the air.

Traditionally, Tibet was a very [isolated](#) place. Most people are Buddhist. Tibet used to have many ancient monasteries and temples. In the past both the British and the Chinese tried to control this part of the world. At that time it had a feudal society. Wealthy families or large monasteries owned nearly all the land. Most Tibetans were very poor. They had to work on land owned by the rich families and monasteries. This is known as serfdom.



Lhasa, Tibet's largest city

Tibet's leaders were known as Dalai Lamas. They were both political and Buddhist spiritual leaders. Many Tibetans claim that their homeland has always been a separate country. However, China's communist leaders disagreed. They insisted that Tibet had always been a part of China. In the late 1940s the Chinese government accused Tibet's leaders of treating the people like slaves, or serfs. In 1950 Chinese soldiers marched into Lhasa. China's leaders have always said that they did this to help poor Tibetans.

Tibet's leaders made an agreement. The region would be a part of China, but the Dalai Lama would

still be in charge. Tibet would be able to make many of its own decisions, or be self-governing. A few years later some Tibetans organized an uprising. It failed. Thousands of Tibetans were killed in fighting that followed. Many, including the Dalai Lama, fled across the borders into India and Nepal. They eventually settled in Dharamsala, in northern India. There, they set up a Tibetan government-in-exile.

The Dalai Lama is now 80 years old. To many people he is still the leader of all Buddhists. In 2011 he announced that he would retire. He said he would still be a religious leader, but no longer wished to make political decisions. The Tibetans living in northern India then elected their own prime minister.

Since leaving Tibet in 1959 the Dalai Lama has visited many countries. He is admired by millions of people around the world. The Dalai Lama is known as a man of peace. For example, he believes that any protests must be non-violent. During his travels he has met hundreds of world leaders.

However, the Chinese government accuses the Dalai Lama of being a separatist. It claims that he is planning for Tibet to become an independent, or separate, country. China's government frequently asks leaders of other countries not to meet with the Dalai Lama.

The Dalai Lama insists that he does not want Tibet to be an independent nation. Yet he and his followers worry about Tibet's ancient culture. They claim that under Chinese rule it is being destroyed. The Dalai Lama believes that Tibetan leaders should be in charge of the region. This, he explains, would be the best way to protect the Tibetans' ancient Buddhist

customs and their traditional way of life.

In 1965 Chinese leaders declared that Tibet would be an autonomous region within China. Chinese leaders say that they have greatly improved the lives of all Tibetans. In recent years China has constructed many new buildings and roads in Tibet. A modern railroad that connects Beijing, China's capital, and Lhasa, was opened in 2007. This is the world's highest railroad.



Potala Palace, in Lhasa (Xiquinho)

The celebration parade in Lhasa was held in front of the Potala Palace. This large old building is in the center of the city. It used to be the home of Tibet's Dalai Lamas. ■

HAZE RETURNS TO SOUTH EAST ASIA

Riau is one of Indonesia's 34 provinces. It is part of the island of Sumatra. On September 14, the government of Indonesia announced a state of emergency in the province. Much of the area is covered in thick smoke. This comes from forest fires. The smoke, or haze, has made it difficult to breathe. Thousands of people have moved away from the worst affected cities and towns.

Winds have blown the haze to nearby countries such as Malaysia, Singapore and Brunei. Brunei is a small nation on the island of Borneo. Most of this island belongs to Indonesia. The remainder is a part

of Malaysia. Other fires are burning in Kalimantan, or the Indonesian part of Borneo.

On September 15, officials in Malaysia declared that schools in some parts of the country would be closed. These places include Kuala Lumpur, Malaysia's capital city. In Singapore, the smoke has been so thick that it is difficult to see the city's taller buildings. Most people use facemasks when going outside. Elderly people with breathing difficulties have been told to stay indoors. Doctors in Malaysia and Singapore say that the number of people seeking medical treatment has greatly increased. The smoke is also affecting airports. Some flights have been canceled or delayed. This is because of poor visibility.



Satellite image of smoke haze

Forest fires in Sumatra and Kalimantan are not unusual. A similar problem happened two years ago. The places where many fires are burning are only 155 miles (250 kilometers) from Singapore and the southern part of Malaysia. Most of the fires have been lit deliberately. This is mainly done to clear forestland for palm oil and timber plantations.

Oil palms have become a popular crop. Companies that own large plantations of oil palms can make a lot of money. Nowadays, many foods, cosmetics, shampoos, and

cleaning products contain palm oil. It can also be used as a biofuel. These fuels are made from certain plants. In some instances, biofuels can replace gas or diesel. These fuels are made from oil. Wood from trees grown on Indonesia's timber plantations is mostly used to make paper.



Forest fire in Indonesia (CIFOR)

Much of the smoke comes from burning peat. This is a thick layer of rotting, or decomposing, plants. Peatland is normally very wet or boggy. Yet, if it dries, peat can catch fire easily. Peat fires create a lot of smoke and can burn under ground. They may last for many months and are difficult to put out. Peat fires can be extinguished by very heavy rain. Yet in recent months the weather in Sumatra has been much drier than usual.

Several large companies own timber and palm oil plantations in Sumatra. However, their bosses insist that they are not responsible for the fires. Senior workers from larger plantations blamed farmers who own smaller areas of land. For them burning is the easiest way to clear the forest. When land is cleared in this way, the flames can easily spread to a bigger area.

Joko Widodo is the president of Indonesia. He sent over 1,000 soldiers and 17 helicopters to Sumatra. The soldiers were ordered to help local firefighters put out the flames.

Mr Widodo also sent officials to find out who had started this year's fires. Anyone who had done this, the president said, would be punished. ■

FAITHFUL PENGUINS

Researchers working in Argentina have completed a study on rockhopper penguins. After they breed males and females spend most of the year apart. Yet, these penguins mate for life. So the same male and female meet up again year after year. This means that, unlike many other animals, rockhopper penguins are "faithful to each other".

There are many different species of penguin. Apart from those kept in zoos, all penguins live in the southern hemisphere. Many people imagine the ice and freezing temperatures of Antarctica when they think of penguins. However, only two penguin species, Adélie and Emperor penguins, breed in Antarctica.

Chinstrap and Gentoo penguins live on islands around the Antarctic Peninsula. King, macaroni, royal, and southern rockhopper penguins are found on islands in the Southern Ocean and around the coast of the southern part of South America. Other types of penguins live farther north in places like New Zealand, Australia, South Africa, Brazil and even the Galapagos Islands, off the coast of Ecuador.

Emperor penguins are the largest. They grow to a height of 48 inches (122 centimeters). Rockhoppers are one of the smallest types. Adults are about 20 inches (50 centimeters) tall. All penguins eat squid, fish and krill, which are small shrimp-like creatures. Penguins are birds. They cannot fly but are very good swimmers. Penguins spend about half

their lives on land and the other half in the water.

Some penguins slide on their bellies, or stomachs, to move around. Rockhoppers do not do this. They get their name from the way that they jump over rocks. In early October, thousands of rockhopper penguins return to their breeding grounds, or nesting areas. This is the beginning of summer in the southern hemisphere. The penguins' nests can be near the sea, on cliffs, or farther inland, if they breed on an island. When penguins gather together in large numbers they are known as rookeries or colonies.

The females lay two eggs. The males and females take turns looking after them. Eggs hatch after about four weeks. The penguins then look after their chicks for between two and three months. The males stay with the chicks while the females go off to hunt for food. The baby chicks in the rookery will group with others before all the penguins return to the sea.



Southern rockhopper penguins (Ben Tubby)

The researchers wanted to find out what happened when the birds left the nest. Did the males and females stay together or split up during the winter months? The researchers attached devices to the wings of 20 penguins, or ten pairs. These lightweight devices are designed to track the birds. The researchers then followed the penguins' movements for the next six months.

While hunting for food in the ocean, the pairs were usually hundreds of miles from each other. At one time, a couple were 1,550 miles (2,500 kilometers) apart. The males arrived back at their old nest six days before the females. The researchers say that, as they return to the same nest, it is not difficult for the penguins to find each other. When it's time to go back to the sea, the females leave first.

The researchers do not know why males and females leave and arrive at different times. However, this probably explains why they do not stay near each other during the winter. Of the 20 penguins tracked, seven pairs returned. Two came back on their own. The researchers say that the “missing” penguins may have died at sea or gone to a different breeding ground. ▣

BASQUES ORIGINS

The Basque people (or Basques) are a distinctive ethnic group. The Basque region, or Basque Country, is at the western end of the Pyrenees Mountains and along the coast of the Bay of Biscay. The larger part of the Basque Country is in northern Spain. It also includes an area of Southwest France.

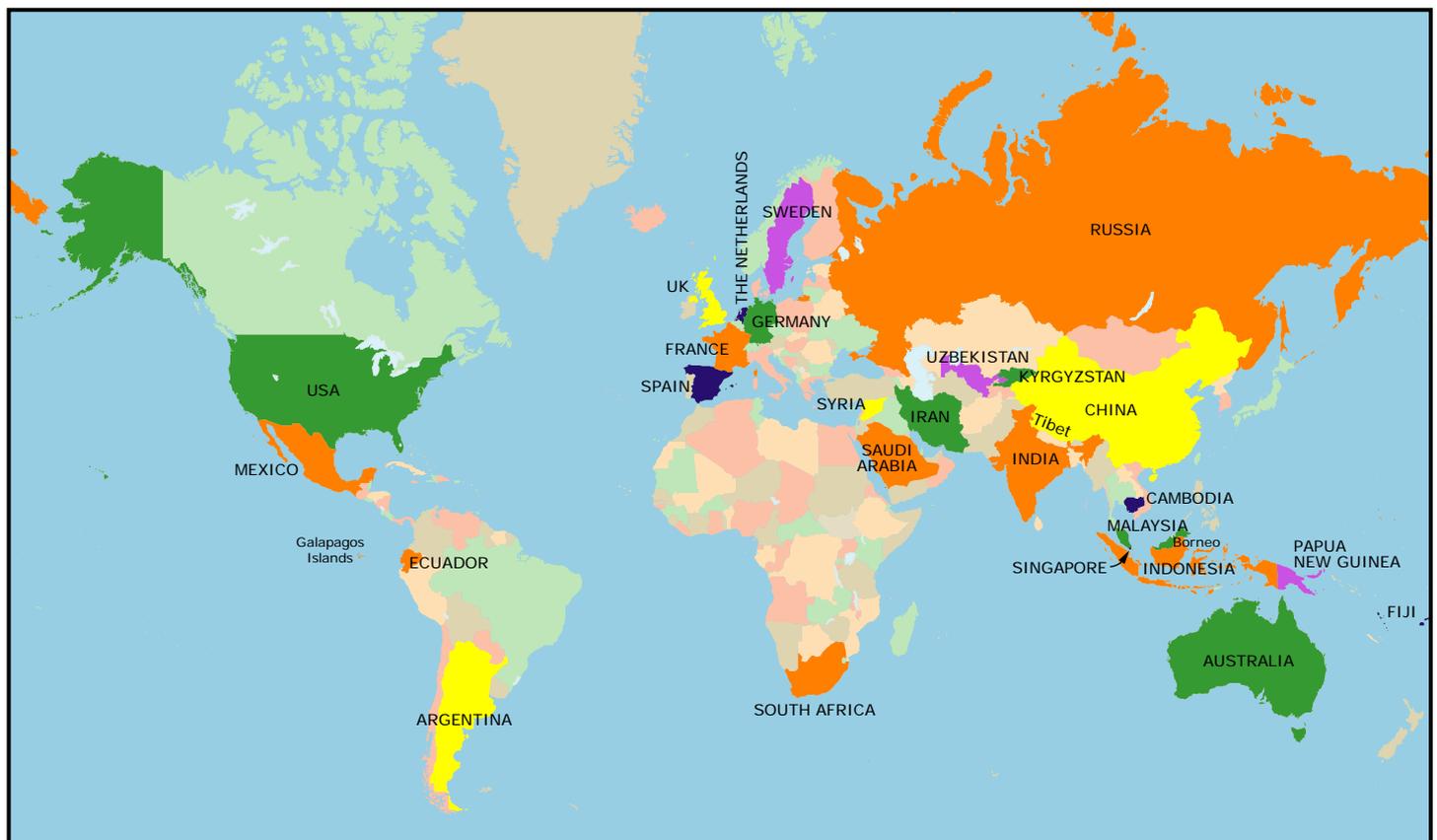
The Basques have their own language and culture. The language is called *euskara*. It is very different from any other European language. Other languages spoken in Europe, including Latin, are all based on what are known as Indo-European languages. These languages originally came from farther to the east. Over thousands of years, they spread westwards. The Basque language is believed to be the oldest in Europe. It was therefore spoken long before

the rise of the Ancient Greek and Roman Empires.

Today, about three million people live in the Basque Country. Of these around 700,000 are able to speak *euskara*. Over the last four hundred years many Basques have moved to other parts of the world. Their descendants are known as the Basque Diaspora. Countries where many people of Basque descent now live include: Chile, Argentina, Colombia, Venezuela, Cuba, Mexico, Canada, and the U.S.

The Basque people have puzzled anthropologists for many years. Anthropologists are scientists who study humans and human behavior. Where the Basques came from and who their ancestors were was a mystery.

Over 10,000 years ago most people in what is now known as Europe were hunter-gatherers. They moved



This map shows countries to which news stories refer in this issue. Visit www.newsademic.com for more detailed world maps.

from place to place, hunting wild animals and collecting fruit, nuts and berries. The change from hunter-gatherers to farmers is often called the Neolithic Revolution. It was an important time in human history.

This “revolution” happened at different times in different parts of the world. The first farmers are thought to have lived in the Middle East 10,000 years ago. By about 7,000 years ago these “farming people” had spread to most of southern Europe. Once the farmers arrived they mixed with the hunter-gatherers. Therefore, over time, the hunter-gatherers died out or were “taken in” by farmers. Farmers did not join hunter-gatherer groups.



Some people suspect that the Basque people’s ancestors were hunter-gatherers who did not join farming groups. So the part of Europe where Basques live was never part of the Neolithic Revolution. However, a recent study by a team of scientists from Sweden shows that this is unlikely.

The scientists studied DNA taken from eight human skeletons. They were all discovered in a cave. The cave is in northern Spain close to the Basque Country. The skeletons belonged to people who had died

between 3,500 and 5,500 years ago. This was after farmers had arrived in Spain and France. The DNA results show that these early farmers are the Basques’ ancestors. It also shows that the ancestors of these farmers mixed with hunter-gatherers.



Basque traditional dance

The scientists say that the Basque people are not as old as some suspected. However, over the last 3,000 years there were several other migrations from the east. Then, the Romans conquered most of Europe. Later, Muslims occupied much of Spain for about 700 years. They originally came from North Africa. It seems that the Basque Country was not affected by these later migrations. This, the scientists say, would explain why Basques are different from French and Spanish people.

The DNA of some of Europe’s first farmers has been studied. It shows that people from Sardinia are their closest descendents. This large Mediterranean island is part of Italy. However, unlike the Basques, their ancestors never mixed with hunter-gatherers. ■

FISH EYE ENERGY EXPERIMENT

Researchers at a university in Sweden have carried out an unusual experiment. It seems to prove that a species of small fish, over time, lost its eyes to save energy. The fish, the researchers say, was unable to find

enough food to make enough energy to “power” its eyes.

The fish are called Mexican tetra or blind Mexican cave fish. These fish live in some of Mexico’s rivers. They are about 4.7 inches (12 centimeters) long. There are two kinds of Mexican tetra fish. One has eyes and the other is sightless. Those with eyes live in normal rivers. The blind ones are found in rivers in caves. The fish eat small freshwater shrimps, insects and tiny worm-like creatures called annelids. The ones that live in caves also eat the remains of dead animals and plants.

A long time ago some of the fish must have swum into an underwater cave. There, they either became trapped, or could not find their way out. The Mexican tetra fish swimming in surface rivers did not change. Yet the cave-dwelling ones did. Over time, their eyes disappeared and they became sightless. In the caves there is not much food for the fish to eat. For those swimming in normal rivers this was not a problem. In these rivers there is always plenty of food.

The sightless cave fish is not totally blind. It can sense darkness and light. Many fish have lateral lines. These are like long sensory organs that run along each side of a fish’s body. Lateral lines can pick up nearby movement in the water. The blind cave fish is able to use its lateral lines to find its prey.

Living things need to produce enough energy to survive. Different parts of the body need different amounts of energy. For example, if they are going to work correctly, the eyes and brain need enough energy. This energy is made from the food that living things eat.

Scientists have long suspected that some animals will change, or

evolve, if they have trouble making all the energy they need. These evolutionary changes are therefore caused by the need to save energy. Until now scientists have not been able to measure how much energy evolving in a certain way can save. It is not possible to study a live creature before it began to evolve tens or hundreds of thousands of years ago. However, the Swedish researchers realized that they might be able to do this by experimenting with Mexican tetra fish.



Mexican tetra fish in an aquarium: surface-dwelling with eyes, cave-dwelling without eyes (R. Borowsky)

The tetra fish that have eyes are what the blind ones were like tens, or hundreds, of thousands of years ago. The researchers managed to work out how much energy the tetra fish need to see. This amount of energy was therefore what the cave-dwelling fish saved by going blind.

The researchers collected some of the fish with eyes and some that are blind. They then cut out their eyes and brains. These organs were kept alive by placing them in a special fluid and supplying oxygen. The blind fishes' organs needed less oxygen to be kept alive. From the measurement of oxygen, the researchers worked out how much energy the eyes needed. This figure was about ten percent of the fish's total energy supply.

The researchers believe that the blind fish use ten percent less

energy than those that can see. If they had not saved this energy by losing their sight, the cave fish would not have survived. ■

CHINA'S MOON MISSIONS

China has announced its plans to land an unmanned spacecraft on the far side of the Moon. This has never been done before. Before then, a different spacecraft will land on the Moon, collect some rock samples and then return to the Earth. China's last space mission, a spacecraft called Chang'e 3, landed on the Moon nearly two years ago.

The Moon is almost one-third of the size of the Earth. Other planets in the Solar System have many moons. Jupiter has 67. Saturn has even more, but most are very small. When compared to the size of the Earth, our Moon is much bigger than the moons, or natural satellites, of the other planets.

The Moon is not round like a ball. One side seems to bulge outwards. The other side is much flatter. The side of the Moon with the bulge is often called the "dark side" or the "far side". This is because it can never be seen from the Earth. The time taken for the Moon to orbit, or circle, the Earth is about the same time as our planet takes to spin once on its own axis. This is called synchronous rotation. This explains why it is always the near, or flatter, side of the Moon we see in the night sky.

A Russian unmanned spacecraft was the first to fly around the far side of the Moon in 1959. Later, when scientists studied photographs taken by this spacecraft they were surprised by what they saw. The far side has many more craters. The Moon's crust is much thicker on

this side and there are many more mountains. Unlike the far side, the near side has large flat darker areas known as basins. They are often called "seas" or "mare" (the Latin word for sea). Scientists believe that magma, or very hot liquid rock, coming up from below the Moon's surface many millions of years ago, formed these basins.

China's first Moon mission was called Chang'e 1. It was launched in 2007. This spacecraft orbited the Moon for two years. Chang'e 2 began going around the Moon in 2010. Chang'e 1 and 2 were what are known as lunar orbiters. Chang'e 3 was a lunar lander. It carried a six-wheeled vehicle, or rover. This lunar rover was named Yutu, which means "Jade Rabbit".

The Chang'e name comes from an ancient Chinese legend. In the folk-tale a woman called Chang'e swallowed some magic pills. She then flew to the Moon, where she became a goddess. The woman took Yutu, her pet white rabbit, with her. The legend says that Chang'e and Yutu still live on the Moon.

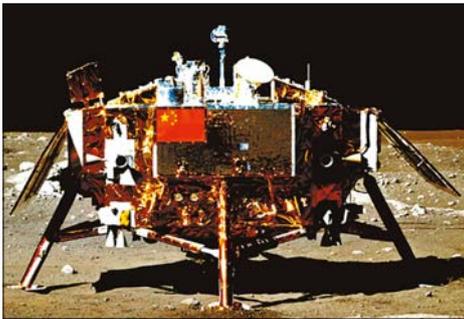


The Moon's near side

The Moon's far side

Chang'e 3 landed on a lava plain called *Sinus Iridum* (Latin for "Bay of Rainbows"). Scientists in China were able to remotely control the Jade Rabbit lunar rover. A few hours after the landing, the rover was driven down some ramps and onto the Moon's surface. Chang'e 3 and Yutu then took pictures of each other. Unfortunately, Yutu, after being on the

Moon for one month, had technical problems. Eventually it closed down. The mission to collect some Moon rocks will be called Chang'e 5. The only countries that have landed spacecraft on the Moon that have taken off again are the U.S. and Russia. The spacecraft due to land on the far side of the Moon is Chang'e 4. Chinese officials now say that Chang'e 5 will happen in 2017. Chang'e 4 has been postponed until 2019 or 2020.



Chang'e 3 on the Moon's surface

Chang'e 4 will study the geology of the far side of the Moon. This is the type of rocks and how they were formed. This mission may also lead to the placement of a radio telescope on this side of the Moon. Here, a telescope would be shielded from all the Earth's radio [interference](#). ▣

RUSSIA AND SYRIA

On September 15, Vladimir Putin, Russia's president, talked about Syria. He declared that his country would be increasing its military support for Syria's president, Bashar al-Assad. The war in Syria began over four years ago. Now there are many opposing groups in the country. Leaders in the U.S., Britain and France believe that the war will not end until Mr al-Assad leaves the country. They claim that Russian involvement in Syria is likely to cause more problems.

Mr al-Assad and his family have controlled Syria for over 45 years.

He took over after his father died 15 years ago. Mr al-Assad's father led the country for 30 years. Traditionally, Russia has supported the al-Assad family and their governments. Syria buys many things from Russia including weapons. Its government allows Russian navy ships to use Tartus. This is one of Syria's ports on the Mediterranean Sea.

Recently, several Russian ships have arrived at Tartus. Large Russian cargo planes have been landing at an airfield near Latakia. This city is not far from Tartus. These planes, called An-124s, are some of the largest cargo planes in the world. Reports say that Russian tanks and military advisers have arrived in Syria. Changes are being made to the Latakia airfield. The reports say that Russian warplanes will probably use the airfield as a base.

The war in Syria began when protests were held in several towns and cities. The protesters said that Mr al-Assad and his government should stand down. They wanted to elect their own leaders. However, the Syrian army was ordered to stop the demonstrations. In some places soldiers shot and killed many demonstrators. An opposition group was formed. Some soldiers were unhappy about what had happened. They [deserted](#) and joined the opposition. This group became known as the Free Syrian Army (FSA).

Soon after it was set up, other countries said they would support the FSA. They included the U.S., Britain, France, Saudi Arabia, and several other Arab nations. However, the FSA has never been strong enough to defeat the Syrian army. In recent years other armed groups have appeared in Syria. One is called the al-Nusra Front. It is also fighting against the Syrian army.

Al-Nusra is an Islamic militant organization. It wants to take over Syria and govern the country using religious laws. The U.S., Britain and France claim that al-Nusra is a terrorist organization. Sometimes the FSA and al-Nusra work together. Yet the two groups are also known to fight against each other.

In 2013 another Islamic militant group arrived in Syria. It calls itself the Islamic State (IS). This group now occupies large parts of northeast Syria and western Iraq. Its headquarters is in the Syrian city of Raqqa. The IS wants to set up a new Islamic country, or state. Everyone living within it would have to obey strict rules.



The IS is fighting against the Syrian and Iraqi armies. It has between 20,000 and 30,000 fighters. Many people say that its supporters are fanatics who are prepared to commit mass murder. They wear black clothing and treat Shia Muslims, Christians and people of other religions very harshly.

Over 40 countries have joined an anti IS coalition. This group is led by the U.S. It includes many Arab and European nations as well as Australia, Canada and Turkey. Warplanes from the U.S., Britain, France, Australia, and Turkey have been attacking IS targets in Iraq and Syria.

By attacking IS targets in Syria, the anti-IS coalition is assisting Mr al-Assad. Mr Putin says that

he wants to help the Syrian government in its fight against the IS. He believes that Russia, Syria and the anti-IS coalition should join together and defeat the IS. However, the U.S. insists that Mr al-Assad must leave the country.



Russian An-124 cargo plane (Antti Havukainen)

So far, at least 250,000 people have been killed in the war in Syria. Millions of Syrians have been forced to leave their homes. Many are now living in refugee camps in Lebanon, Turkey and Jordan. Tens of thousands of these refugees are now trying to move to countries in Europe.

On September 17, military leaders from the U.S. and Russia agreed to meet for talks about Syria. ■

EU MIGRATION PROBLEM

Viktor Orbán is the prime minister of Hungary. On September 15, he announced that a new border fence between his country and Serbia had been completed. The fence was built to stop migrants crossing into Hungary from Serbia. Two days later the nearby countries of Croatia and Slovenia declared that they would need to control the number of migrants crossing their borders.

In recent months thousands of people have been traveling from Turkey into Greece. These people are mainly from Syria, Iraq, Afghanistan, and Bangladesh. Many, such as those from Syria and Afghanistan,

are trying to get away from the fighting in their countries. They all want to move to countries that are members of the European Union (EU).

All the migrants arriving in Greece claim to be refugees or asylum seekers. Under international law EU member countries must help asylum seekers. However, many of the migrants have not come from war zones. They are hoping to find jobs and improve their lives in a European country. These people are known as economic migrants. International law says that economic migrants can be sent back to the countries from which they came.

Several weeks ago Angela Merkel, the chancellor of Germany, said that asylum seekers from war zones would be welcome in her country. She announced that Germany would accept about 800,000 people each year. Mrs Merkel said that other EU member countries must agree to take in a certain number of asylum seekers. This number, she explained, would depend on the size of the country.



Angela Merkel, Germany's chancellor

Germany is a wealthy nation. In recent years its population has fallen. There are two ways of increasing a country's population. One is to persuade couples to have more children. The other is to invite people from other countries to come and live there.

Most migrants arriving in Greece from Turkey say they want to go to

Germany. Thousands have been arriving on Greek islands every day. To make the trip the migrants have to pay people smugglers for a place on small **inflatable** boats. Some boats have sunk and many migrants have drowned. The majority of these migrants are younger men. Yet some older people and couples with young children are also making the journey.

Greece is a member of the EU. So when the migrants arrive they can travel to other EU countries. Many choose to go to Hungary. This is because Hungary is part of the Schengen Area. This area includes most EU member countries. Schengen countries don't stop people when they travel from one member country to another. There are no passport or document checks.

Schengen arrangements were designed for people who live in the EU. It means that they can easily move from one EU country to another. However, Schengen also helps the migrants. If they get into one EU country, they can easily move to others. This is why the migrants have not been traveling to Romania or Bulgaria. These countries are EU members, but they are not part of the Schengen Area.

As most migrants wanted to go to Germany, Hungarian officials allowed them to travel through their country on trains and buses. They crossed into Austria. Officials in Austria did a similar thing. They allowed the migrants to travel onto Germany. Many people in Austria and Germany welcomed them. However, the numbers kept increasing. Then, to the surprise of many people, Germany declared that it would start to control its borders. This meant that Austria had to make a similar announcement. In Hungary, Mr Orbán said that his country's borders would be closed.

EU officials have held several meetings about the migrant crisis. Yet they are unable to agree on what should be done. Some EU member countries have offered to take in a set number of asylum seekers. Yet others, such as Slovakia and Hungary, are refusing to do so. They argue that the migrants do not want to go to their countries, so it would be unwise to send them there.

Some people say that Germany is right to try to help the migrants. Others argue that Mrs Merkel has made the problem worse. They say that her offer to accept 800,000 people every year has encouraged many more to make the dangerous journey from Turkey to Greece. ■

WALNUT FORESTS

There are many walnut trees growing in the wild in Central Asian countries, such as Uzbekistan and Kyrgyzstan. Researchers from the U.S., Italy and Britain now think that these trees are not “wild”. They believe that the walnut forests in Central Asia were planted by traders many hundreds of years ago.



Walnut trees in Uzbekistan, in Central Asia (CNR)

There are several species of walnut tree. Most live for over 200 years. Mature walnut trees are about 100 feet (30 meters) tall. They have large leaf canopies, which create a lot of shade. Older trees have deep ridges in their bark. These often form diamond-shaped patterns.

The bark can be dark brown or a grayish color. In spring walnut trees produce flowers. These are yellow-green catkins that droop, or hang down. Walnut trees are deciduous, so they lose their leaves in winter.



Walnuts

At first, the nuts are covered by a green outer layer, or husk. As the nuts ripen, the husks become dry and brittle. Inside each husk is the brown walnut shell. These look as if they are made of two halves that have been stuck together. Inside the shell is the “nut”, or kernel. This is the part that is eaten. The Ancient Greeks called the walnut “karyon”. This means head. The Greeks thought that the walnut shell looked like a head, or skull. The nut inside was similar to the brain.

Nowadays, it is known that walnuts are a healthy food. They contain many important vitamins. Chopped walnuts are often used in salads and desserts. Ancient walnut shells have been dug up. These show that people were eating them 12,000 years ago. So walnuts are the oldest known tree food. Wood from walnut trees is highly valued. It is used to make tables, chairs, musical instruments, and flooring.

Many years ago there was an important route between the eastern coast of the Mediterranean Sea and China. This route went through Persia (or modern-day Iran) and Central Asia. Today, it’s known as the Silk Road. The route was

given this name by a German writer in 1870. It comes from the traders who used the route to buy silk from China and take it to Europe. Large numbers of camels (known as caravans) carried silk, spices and other items along this trade route. The Silk Road was used for about 2,500 years. It was not a single road or track, but a route between cities, towns and places to stop and rest.

The researchers were surprised to discover that the word for walnut in Persian and the languages spoken along the Silk Road is similar. They studied walnut trees in 39 places in Asia. These trees are all similar to the ones that grow in Iran. The researchers believe that traders who used the Silk Road took walnuts with them. Many were deliberately planted along the route. The walnut forests that grew then became a useful source of food, wood and even shade for the traders.

Today, the biggest walnut plantations are in California, in the U.S. English walnut trees (also known as Persian walnuts) were first taken to California in the 1700s. Now, 75% of all the walnuts sold in the world come from California. Each year people eat, or consume, about 2.5 million tons of walnuts. ■

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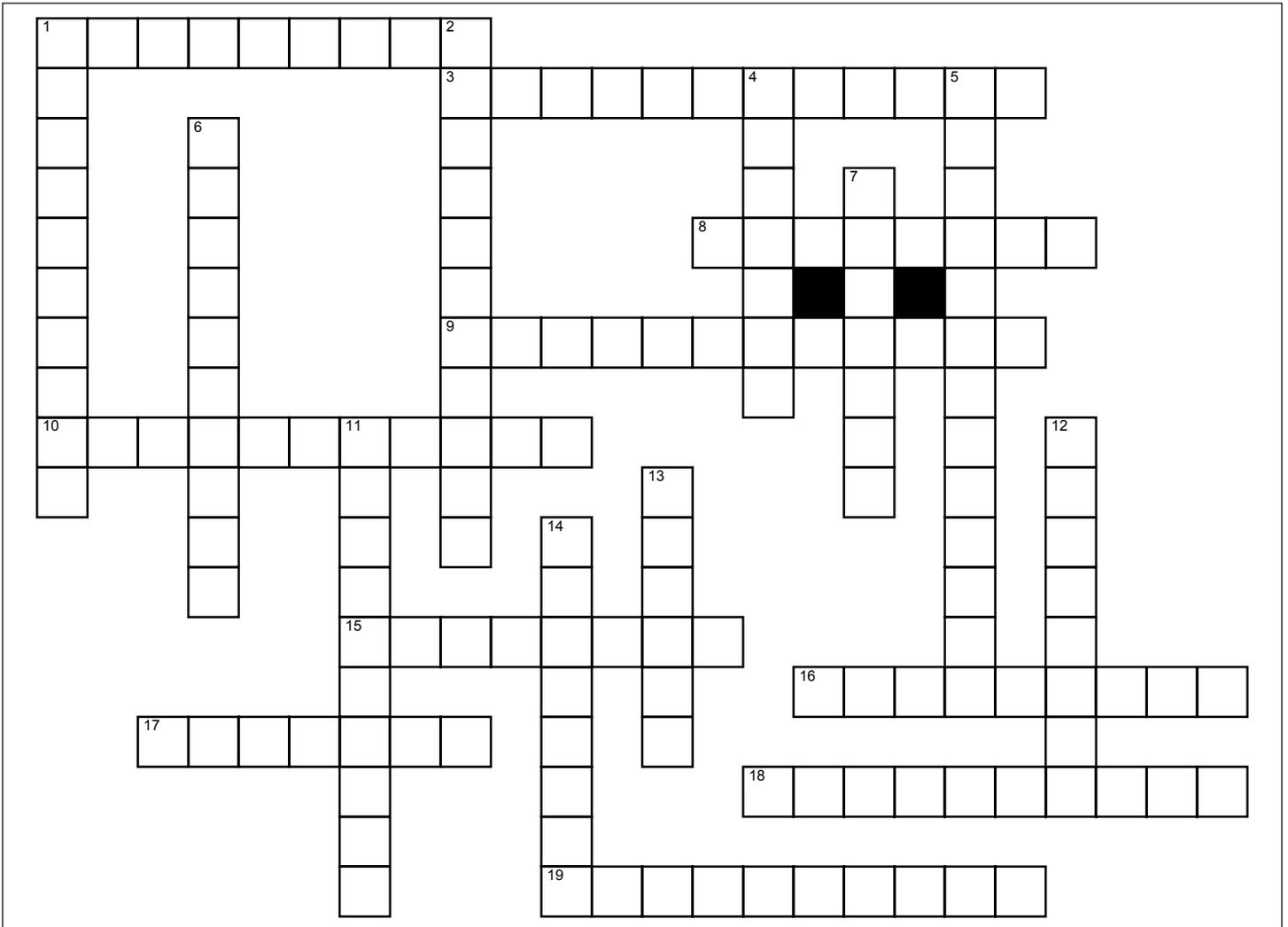
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GLOSSARY PUZZLE

INSTRUCTIONS: ① Complete the crossword. The answers are highlighted in orange in the news stories. There are 25 words highlighted and you need 20 of them to complete the crossword. ② Once you have solved the crossword go to the word search on the next page ➡



Across

- 1 Adjective** Describes something that has been left with no intention of returning to it
- 3 Noun** Electrical activity that can disrupt radio communication
- 8 Adjective** Separate or far away from other places or people
- 9 Noun** Looking after the natural environment and wildlife
- 10 Noun Plural** Groups of people or animals living in one place
- 15 Noun** A union of two or more groups that support each other
- 16 Verb** To invite someone to take part in a competition or fight
- 17 Noun Plural** Actions or words performed or spoken frequently as part of a ceremony
- 18 Adjective** Describes something that must be done; there's no choice
- 19 Adjective** Having the power to make your own decisions

Down

- 1 Noun** What something or someone looks like
- 2 Adjective** Describes something that is easy to recognise because it is different from other things
- 4 Adjective** Describes something that is difficult to find or catch
- 5 Adjective** Likely to cause arguments
- 6 Noun** A journey to a holy place
- 7 Noun** An area of high ground with a fairly level surface
- 11 Adjective** Designed to be filled with air or gas
- 12 Verb** Causes something to start
- 13 Adjective** Short, broad and strong, or sturdy (usually a person or animal)
- 14 Noun** Scattering of people who used to belong to one country or region

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GLOSSARY PUZZLE *CONTINUED*

INSTRUCTIONS: ③ Find 19 of the 20 crossword answers in the word search. Words can go vertically, horizontally, diagonally and back to front. ④ After finding the 19 words write down the 20th (or missing) word under the puzzle.

C O M M U N I T I E S L I F C W T D
 O O T W J S R E G G I R T E O T R I
 N K N W T H Q V W G G D C R M Y X S
 S C N T J X J D R M E N P O P W P T
 E W W C R J W K J N A S G C U I G I
 R F K V U O S O O R I V V M L N I N
 V W S M W Z V D A Y A K U G S S Y C
 A J S I O C N E H U I L R E O C U T
 T E L Q V A P H R E G I L L R E S I
 I U A L B P Q I L S M I A I Y I B V
 O A U A A A D B W A I T S N A U H E
 N E T E S E A I G W E A N T B N O R
 A T I C P T R E A D G X L L O Q C P
 G A R V A M G U D S U Z Z Y S C U E
 V L L L L U R H V I P O Q W A T K Q
 T P F F N D L S U O M O N O T U A Y
 E N E V I S U L E J E A R I M S S N
 I N T E R F E R E N C E Z A Y S G K

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MISSING WORD ANSWER =

ISSUE 257 ANSWERS

D I S M I S S E D