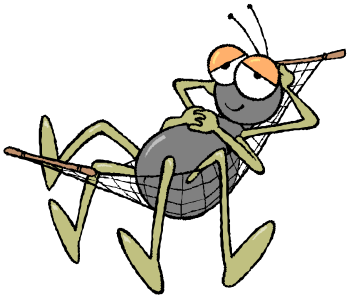


Nature's Web

Issue No.1 Spring 2006

Inside This Issue...

Photo: © Marcin Karetta

Spring is a busy time for birds. Those that migrated in the Autumn, including the **Cuckoo** (above), are now returning to join those that stayed for the long Winter. All birds will be busy building and preparing their nests for the eggs that will be laid over the coming months. Birds will lay anything from 1 to 15 eggs - each bird is different. Either one, or both of the parents will incubate the eggs (keep them warm) by sitting on them. Once they hatch the parents will then search for worms and other tasty goodies to feed the young.

Why not take part in the Spring Alive Project... Details on page 3

ALL THINGS NEW!

Spring is the season to watch Mother Nature at her best. There is new life everywhere, buds on the trees, flowers appearing out of the ground and birds frantically building nests and laying eggs. Everywhere you look nature is blossoming. On farms lambs and calves are happily dancing through the fields, in ponds frogs are busy laying frog spawn, in trees squirrels are stretching their legs after their sleepy winter, in hedgerows hedgehogs are carefully searching for insects, in caves bats are waking up to the sound of spring and flocks of birds can be seen on the horizon after their 'holiday in the sun'. So, wrap up and get out there exploring!

Photo: © Audrey Murphy

Willow in bud

Editor's Page

A wonderful thing about living near the sea is that you always have amazing sunsets. Here is a picture of a large cloud formation over Cape Clear, one of Sherkin Island's neighbouring islands, that I took one evening. It was a spectacular sight!

This cloud is a typical Cumulonimbus cloud with an "anvil" shape and is the type of cloud that brings rain and thunderstorms. Cumulus means "heaped cloud" and nimbus means "rain", so cumulonimbus is a "heaped rain cloud". This cloud forms when a cumulus cloud meets a continuous column of rising warm air. The icy "anvil" section on top indicates that the cloud has stopped growing vertically because the air has become stable above the anvil top. When a cumulonimbus has reached this stage, the base is usually dark, with rain, hail or snow falling.

Why not start a book club?

Why not start a book club with your friends by swapping your favourite nature books and then comparing interesting facts you have learnt.

Photos: © Audrey Murphy

Special Visitor

Each evening over the winter and autumn I've been having a little visitor to my house. 'Rua' as I have nicknamed her (not sure if it is a boy or a girl but I think maybe a girl!) is a cute little fox that appears when no once else is around! The Irish name for fox is Madra Rua, (which translate as Red Dog). She wanders around the house and on one occasion climbed in the bathroom window to use the toilet! Yes, it's true! Even though I don't feed her, she still comes around for a nose! She doesn't get too close but is happy to have her photo taken!

Seafood Recipe

Smoked Salmon and Pasta

What you need:

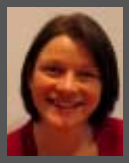
200g pack of smoked salmon - cut into ribbons
200g fresh linguine
1 small onion - chopped
250g of mushrooms - sliced
170 ml cream
Fresh basil
A little oil
Salt and freshly milled black pepper

What to do:

Under the supervision of an adult, heat oil, lightly fry onion until transparent. Add mushrooms and cook for 3 minutes. Add cream, simmer gently for 2-3 minutes to reduce, season. Meanwhile, cook pasta for 8-10 minutes, drain well. Add smoked salmon and torn basil leaves to sauce, combine pasta and sauce. Serve with salad and garlic bread.

Brought to you by BIM. www.bim.ie.

Welcome to the Spring Edition of Nature's Web!



Dear Reader,

Sherkin Island Marine Station is delighted to welcome you to the Spring issue of our newsletter *Nature's Web*. We hope to bring you this exciting newsletter every season to keep you up to date with news and trivia from the environment! There will be topics from around the world and articles on how we can make a difference. This spring we have included what to look for at this time of year, what you can do to protect the environment and many interesting articles on life in the natural world. We would love to hear your views and comments and suggestions for future articles. Have a good read!

Signed: Audrey Murphy

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Layout and Design: Audrey Murphy & Susan Murphy Wickens
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Foreign Correspondent: Michael Ludwig

Bird life

Photo: © Paulina Skoczylas

An easy and fun way for you to help us keep track of our spring migrants as they come to Ireland

www.springalive.net

Spring Alive is an exciting new project organised by BirdLife International and its national partners all around Europe, including BirdWatch Ireland. The main message of the project is that birds are migrating across the whole of Europe, crossing many borders, and that everyone can be a part of this fascinating event.

Taking part in *Spring Alive* is very easy: Children, their families and school classes around the continent are asked to go for a springtime walk around their neighbourhoods and look for their first Cuckoo, Swift, Swallow or White Stork* - four common European bird species - that have been chosen as the Spring Messengers. These observations should then be entered on the specially-provided form on the project's web-site – www.springalive.net. The whole process requires mere seconds: a name, an e-mail address and a couple of mouse clicks are all it takes.

To show the progress of spring, the computer system creates maps based on the submitted data, showing the rate at which the four Spring Messengers are returning from their wintering sites. These maps are also available on the web-site and will be updated daily. Participants can check the maps, as soon as the following day, to see if their observations have pushed the march of spring forward in Europe. A country-by-country breakdown of the figures is also provided, and it is even possible to watch the spread of each species in Ireland on an individual county or provincial basis.

To help you get to know as much as you can about the four species covered by the project, key information about them is available at www.springalive.net, including photos, sound recordings, video clips, and interactive games. The scheme makes an ideal project for schools, and is perfect for kids (and adults) of all ages.

*White Stork is also included, but it is unlikely to occur in Ireland.

Photo: © Marcin Karetta

Above: Swallow; Left: Swift (Front Page: Cuckoo)

Every single observation is important for us - thanks to your input we will be able to check the arrival dates every year and see how different factors influence the arrival of birds. With time, the data we gather should reveal some interesting annual patterns and may become very useful for the monitoring of other important environmental issues, like climate change or habitat loss. Please remember that every observation is valuable!

We are particularly hopeful for a large Irish participation in *Spring Alive* this year, so please do have a go yourself and send in your records. After all, if you have seen some of the Spring Messengers, wouldn't it be nice to share this news with the rest of the world?

For Teachers

The project is expected to be an exciting experience for children, but as such it can become an exceptional educational opportunity for the teachers. *Spring Alive* is based on the internet, making it particularly easy to take part in and even more attractive for young participants. The project can be a useful way to introduce children to bird migration, wildlife and citizen science activities. It can also be a great way to demonstrate the importance of cross-border conservation and the close connection between children's local environment and the European natural heritage.

To meet the needs of teachers that are interested in participating with their classes, there is an additional web-site with special teaching materials (www.springaliveresources.net). These materials include information sheets on the four *Spring Alive* species, educational games and lesson scripts. All the activities included in the materials are dedicated to general knowledge about observations, bird migration and habitats, in context of the *Spring Alive* species.

Aquatic Life

The Salmon

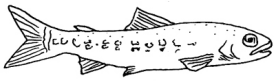
During the winter salmon gather in pairs on a gravel bed where the water is clear. The female makes a nest or 'redd' in the gravel and lays up to 5,000 eggs called **spawn**. The male fertilises them and the female covers them up with gravel. These eggs begin to develop and about two months later in the spring the young salmon or **alevins** emerge and begin life in a stream.

The young salmon, or **fry** as they are now called (salmon up to 1 year old), feed on small insects and over the next two years the **parr** (salmon aged 1-2 years) move down-stream looking for more food and more space to survive. In the spring of the third year the **smolts** (salmon aged 2-3 years) are ready to go to the sea and remain there for a year. The smolts feed on as many small fish as possible and grow very quickly. After a year the salmon are fully grown and are known as **grilse** (salmon aged 3 years and older). At this age they begin their return journey to the river and back into the stream where they were born. On entering the river the salmon are very strong, healthy and fat but on their journey up the river they do not eat, so by the time they reach the spawning site they are weak and tired. After mating and spawning many salmon die from exhaustion or are caught by predators. Only the very strong return to sea and repeat the journey.

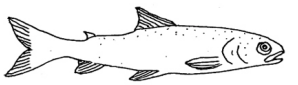
spawn

alevin

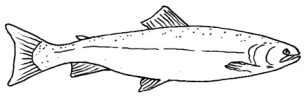
fry



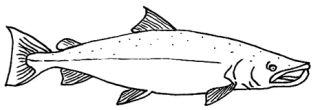
parr



smolt



adult female



adult male

Problems

There are many things that can prevent the salmon from reaching the spawning ground and also the young salmon from reaching the sea.

Pollution – it can kill the fish or kill the organisms they eat.
Predators – salmon are eaten by birds, larger fish and mammals.
Overfishing – if too many fish are caught, not enough will make it back to spawn.
Competition – Salmon will compete with others for food and space.
Dams – these can prevent salmon from reaching their spawning ground.
Erosion – mud eroding in the streams can cover the gravel making it unsuitable for young salmon.

How many survive?

Many things can happen to the eggs and young salmon during their journey. Can you work out how many survive until the end in order to spawn?

A salmon lays 5,000 eggs in its 'redd'.

- 500 of these were not fertilised and therefore died.
- 60 were washed out of the gravel when a tractor crossed the stream.
- Mud from a new building site washed into the stream and suffocated 1,000.
- 300 alevins died because they were weak.
- Once the alevins developed into fry, 500 were eaten by other fish in the stream.
- 41 were eaten by birds.
- Near the ocean, 260 smolts died after they were caught in a pool that was hot and polluted.
- In the ocean, 1,550 were eaten by bigger fish.
- Seals ate 95.
- Fishermen caught 596.
- On returning to their spawning ground 80 were eaten by otters and other land mammals.
- 10 salmon died from exhaustion before they reached their destination.
- 3 were crushed against rocks trying to jump a waterfall.
- The remaining salmon spawned, how many were there?

Answer on page 13.

Deer in Ireland

Photo: © Malene Thyssen, www.mtfoto.dk/

Sika hinds (females)

Photo: © Bob Cooke

Red Deer with Stag, Hinds and Calves waiting for hay.

Photo:© : B.Navez - Vallée des daims (Jurhac - Cantal - France) - 10 AUG 2005)

A buck (male) fallow in velvet.

The Sika Deer – *Cervus nippon nippon* – Fia Seapánach

The Sika deer is the smallest deer in Ireland and was brought here in 1860 from Japan. The males are called stags, females are hinds and the young are called calves. During the summer the deer is reddish-brown with pale spots along its flank and has a beige belly. In the winter the coat changes to a dark grey brown colour without spots and has a grey belly. A black line can be seen all year round extending from the head down to the tail. All sika deer have a white heart-shaped rump. The male is about 80cm high to the shoulder and the female has a height of 70cm. The stags V-shaped antlers fall off in April but a new pair begins to grow straight away. During the mating season (rutting) he can be heard calling out in loud whistles and squeaks. A single deep chestnut coloured calf is born covered in white spots. Sika deers can live for 18 years.

The Red deer – *Cervus elaphus* – Fia rua

Red deer have been in Ireland for about 26,000 years. The males are known as stags, females as hinds and the young as calves. The stag is about 1.5 metres in height to the shoulder and the hind grows to about one metre. In the summer the deer's coat is a deep chestnut colour with cream underbelly which changes to brown in winter. It has a short tail and a beige or creamy coloured rump. The male has antlers, which are U-shaped when seen from the front. These are shed in the spring and a new set begins to grow straight away. During mating the male red deer gives out a huge roar, which can be heard from far away. Calves are born in early summer with a spotty coat. Red deer have been known to live for 15 years.

The European Fallow deer – *Dama dama dama* – Fia bui

The Fallow deer originally came from England in 1244. The males are called bucks, the female does and the young are fawns. The height of the male to the shoulder is about one metre and the female is about 85 cm. Fallow deer can vary from black, chestnut brown to ginger brown and sometimes have white spots. The rump is white with a black edge and has a long tail. The male has a set of broad flattened antlers, which he loses in the spring. Fallow bucks give out a barking grunt during the rut (mating time). In June the does give birth to a single fawn that has a spotty coat. Fallow deer can live for up to 18 years.

For more information visit the ENFO website: www.enfo.ie

Spring Highlights!

Photo: © Robbie Murphy

Slimy Tale!

From February onwards look out for frog spawn near the surface of ponds and slow moving streams. The clumps of jelly each contain a black spot, which is the egg. This hatches into a tadpole with a long tail and feeds on the jelly and other things in the pond. For about the first month it lives at the bottom of the pond and breathes like a fish using its gills. First its hind legs begin to grow, followed by the front legs. Once its lungs form the frog gradually makes its way to the surface and the tail slowly disappears.

Sketch: © Audrey Murphy

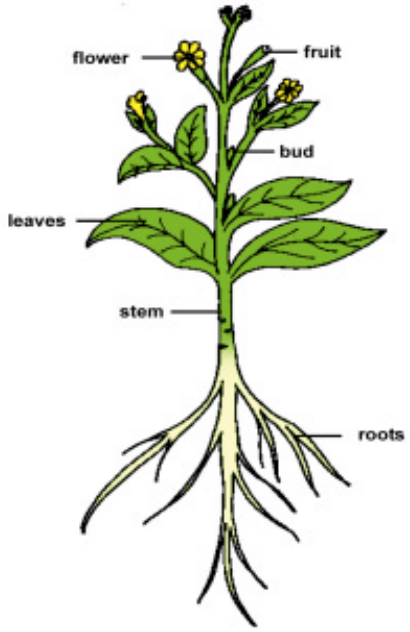
Rise and Shine!

As soon as the warm weather of spring arrives the Peacock butterfly wakes up from its hibernation. It is one of the few butterflies that hibernate for the winter, one of the first to be seen in Spring and one of the few butterflies that live for almost a year. It is easy to identify by the four 'peacock eyes' on the upperside of its wings. These 'eyes' are used to frighten off predators. It can also give off a hissing sound if it is disturbed.

Plant Life

Studying Plants

The study of plants is called Botany.



Roots

The water and raw materials that the plant needs for making food are absorbed through the roots. Roots, as well as storing food, also anchor the plant in the ground.

Stems

The stems bring the water and raw materials from the root to the leaves, as well as bringing the food made in the leaves to other parts of the plant. Not all stems stand up straight; some run along the ground while others climb.

Leaves

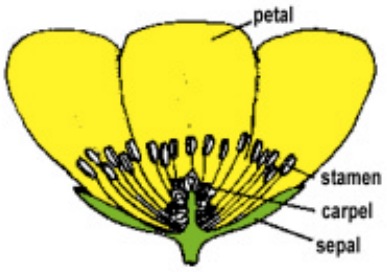
Leaves are often used to identify plants. They are an important part of the plant as they gather energy from the sun. Through their leaves plants purify the air. They take in carbon dioxide, which they build into sugars and other foods, and send out pure oxygen. This process is called photosynthesis. Leaves have a network of veins. Down the centre of the leaf is the mid-rib; veins branch from this mid-rib and lesser veins branch off again from these. This network of veins brings raw materials from the roots, through the stem, and distributes them throughout the leaves where they are combined into food. The veins then distribute this food throughout the plant. Some plants store their food in special leaves packaged together in fleshy bulbs (in the case of Bluebells) or root-like rhizomes (in the case of Yellow Flag).

Flowers

Flowers are the brightly coloured parts of a plant, but looking beautiful is not their main purpose. A flower produces the seeds from which new plants develop. In some cases the "flowers" are actually coloured leaves, with only very small flowers producing the seed. Brightly coloured, the flowers attract insects and other animals to help with pollination. Nectar may also be produced to help attract animals, such as bees. Some flowers are male and some are female, while others are both male and female.

The Structure of a Flower and How it Reproduces

A typical flower is made up of four different parts arranged in circles, one inside the other. The outer circle, the calyx, is made up of leaf-like sepals. These sepals are usually green and, while in bud, they envelope the flower, protecting it. When they fold back they reveal the petals and inside these are the male stamens, which can vary in number from two to several hundred. Each stamen consists of a stalk (called a filament) and a sac (called an anther) that contains pollen. In the centre of the flower are the carpels, which are made up of the stigma, style and ovary. The style is a stalk which is topped by the stigma. These together are the female pistil. When the stigma is ripe it has a sticky surface which catches pollen grains. Pollination takes place when the cells from the pollen fuse with the ovule cells in the ovary at the lower end of the style. It is then that the ovules develop into the seeds from which new plants grow. When a plant grows, flowers, seeds and dies all in one year it is called an annual. When the plant takes two years to complete its life cycle, producing seeds in the second year, then it's a



biennial. When the plant lives on for many years, each year producing seeds, then it's a perennial.

Pollination

In plants that self-pollinate the pollen from the stamen often just falls on the stigma of the same flower and stays there. However in plants that don't self-pollinate the pollen needs to be carried from the stamens of one plant to the stigma of another. This is normally done by the wind or by insects or other animals. Plants that wind-pollinate, including grasses and grains, have flowers that are neither brightly-coloured nor sweetly scented. This is because these qualities serve no purpose. The flowers that need the help of insects and other animals to pollinate have more developed petals and scents and some produce nectar to attract such insects as bees. While collecting the nectar, bees are brushed with pollen, some of which in turn rubs off on to the stigma of the next plant it visits. This transfer of pollen from one flower to another is called cross-

Photo: © Robbie Murphy

Bluebells & primroses

Spring Highlights!

Spring is a wonderful time as this is when gardens and hedgerows spring back to life! Daisies, which are present nearly all year round, are joined by snowdrops in winter and early spring. Wild daffodils, violets, bluebells and primroses hang around for most of the spring followed by Sea pink along the coast in late spring. Trees also have a flash of colour at this time of year with catkins appearing on the birch, poplar and willow trees and spikes of white flowers on the horse chestnut in April.

All in a Day's Work

Maria Coleman: Irish Olympic Sailor

PROFILE

Photos: © Maria Coleman

Maria Coleman is one of the world's top female sailors and was once ranked 2nd in the world. She began sailing in Baltimore in Co. Cork when she was a child and continued when she went to University. She has a degree in Biology and a Masters in Oceanography but sailing is her passion. She has travelled the world sailing in regattas in Europe, Australia and America and has won the European and World Championships. In 2000 she sailed in the Sydney Olympics and in 2004 she was the only female on Ireland's Olympic Sailing Team in Athens. She is also the first female to receive the Irish Sailor of the Year award in 2001. Sailing is a tough and expensive sport but Maria loves a challenge. She often had to tow her own boat, sleep in her van and, in order to learn everything there was to know about boats, she even worked as a boat builder! Here she tells us what life as a sailor is like!

A Day in the Life of Maria Coleman

What made you decide you wanted to be a sailor?
I loved being on the water and it was great fun learning the sport.

How did you first find out about being a sailor? Growing up in Baltimore, my father bought some boats and we sailed them in the harbour.

Did you have to study to become a sailor? No, it helps to study so your concentration on the water is better and your knowledge of technical problems is better but you can be a good sailor without this help.

What is the best thing about your job?
When I was sailing, the best thing was being able to do something I loved and being challenged to the highest level.

What's the worst thing about your job?
Being away from home and my friends for long periods.

What was the most exciting race you ever sailed in?
The last race of the Athens Olympics.

What advice would you give to anyone wanting to be a sailor? Keep practising on the sea and you will only get better. You will learn something new every time.

What is the first task you must carry out at the start of ever day/race? Check how the sky and sea look to see what kind of day it will be.

What safety issues must you consider when working? Always wear a buoyancy aid and let someone know you are on the water.

What dangers are involved in your job?
Getting too cold, drifting out to sea and drowning.

What is a typical day for you?
When I was training it would involve 2 hours working on boats and sails, 3 hours sailing and up to 2 hours in the gym or training another way.

Do you travel with your job?
Yes, all over the world.

Do you work alone or as a team?
It depends on the boat. Sometimes I sailed with others, sometimes by myself. Even when I was by myself there was a team of people around me helping so I never thought of it as working alone.

What would you do if you weren't a sailor? I'd be a surfer or kite surfer or windsurfer!

School Talk

Sherkin Island Marine Station
Sherkin Island
Skibbereen
Co Cork
Ireland

Hi everyone,
This is the page where we would like you to have your say. Tell us about environmental work you carry out in your school or what you would like to hear about in the next issue of Nature's Web. Send us your letters, emails or stories and if we can we will print them in our next issue. Tell us about an issue in your environment that bothers you, one that you would like others to hear! Here are some letters I received from Union Hall N.S in Co. Cork asking questions about nature. I'd love to hear from more of you so write to me at the above address or email me at editor@naturesweb.ie and I'll do my best to answer some of your questions!

Best Wishes
Audrey. The Editor.

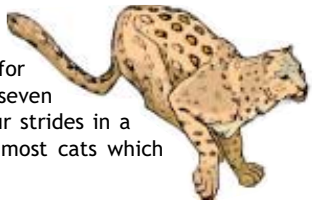
Dear Editor, Please can you tell me how long tortoises live?
From Sarah, age 9

Large tortoises have been known to live over 300 years but usually live anything from 50-100 years. Generally water turtles live for about 30-40 years.

Dear Editor, How long is the longest shark?
From Aidan, age 8

Whale sharks are fish and are the largest sharks in the world, reaching maximum lengths of 12 to 20 metres. Don't worry though, these 'gentle giants' don't eat people or even fish, they eat plankton that they sieve out of the water!

Dear Editor, How fast are cheetahs?
From Paudie, age 9.



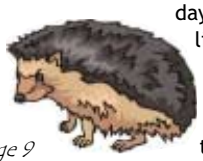
The cheetah is the fastest terrestrial mammal with a speed of up to 71 mph, which it can only keep up for roughly 275 metres. The cheetah moves forward roughly seven to eight metres in a single stride and can complete four strides in a second. Their paws are less rounded and harder than most cats which helps the cheetah make quick turns.

Dear Editor, Please can you tell me how many horses there are in the wild. Thank you.
From Kate, age 9

There are two types of horse that live in the wild. 'Wild' and 'feral' horses. Wild horses are really and truly wild, their ancestors were never domestic (used by humans) where as feral horses were once domestic animals but then ended up in the wild. There are many feral horses to be found in the U.S.A. and Canada (Mustangs), Australia (Brumbies) and New Zealand (Kaimanawa horses). The only truly wild horse left today is Przewalski's Horse which can be found in Mongolia in Asia. Hope that helps!

Dear Editor,
Please can you tell me how long giraffes necks are. *From Katie, age 9*

An adult giraffes neck is about six feet or 1.8 metres long. It is very muscular and is used to reach high into trees to eat the leaves. There are special valves in the blood vessels that help the blood get all the way up to the head! Long necks are also useful as they help the giraffe see long distances so it can see predators coming!



Dear Editor, How many spikes has a hedgehog? *Conor, age 9*
Hedgehogs are covered on the back and sides with up to 500 smooth spines. The face, legs, tail and belly are covered with fur.

Dear Editor, Please can you tell me how many fish are in the ocean?
From Ellen, age 9.
There are more than 20,000 identified species of fish, but how many fish there are altogether is anyone's guess!

Dear Editor, Can you tell me, how high trees can grow?
From Michael, age 9

It is believed the tallest tree ever measured was an Australian *Eucalyptus regnans* in, Victoria, Australia, reported in 1872 by forester William Ferguson. It was 132.6 m (435 ft) tall and almost certainly measured over 150 m (500 ft) originally. In 1991, a coast redwood called The Dyerville Giant was thought to be 1,600 years old when it fell. It was 113.4 m (372 ft) high, not counting the 1.5 m (5 ft) of buried base. It grew in California, USA and was the tallest tree of modern times.

Dear Editor, How do birds get across the ocean?
From Csaba, age 9.

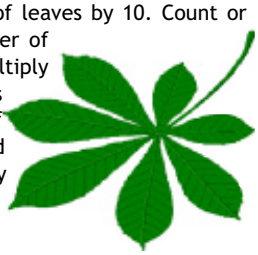
Birds' bodies are especially light (they have hollow bones) so they add on extra fat stores to give them energy for the long flight during migration. During the trip some feed during the day and fly all night. Some appear to have a little sleep while they fly (only for a minute or so) while others can send one half of their brain to sleep as the other half stays awake!It is thought that birds use the position of the sun and the stars as a compass to find their way but unfortunately strong winds over the sea during migration sometimes push birds off course causing them to get lost. Hope that answers your question. For more information on migration have a look at the "Bird Page" in the Trial Issue of Nature's Web.

Dear Editor, Can you tell me how many teeth a Sperm whale has?
From Joshua, age 9.

There are 18-28 functional teeth (teeth that it uses) on each side of the lower jaws, but the upper teeth are few, weak and are not used by the whale. The lower teeth fit into sockets in the upper jaw. The gullet of the Sperm whale is the largest among cetaceans and is the only gullet large enough to swallow a human!

Dear Editor, How many leaves are on a horse chestnut tree? *From Cathy, age 9*

There is no specific number of leaves on a tree. It can depend on species, location, and many other factors.
To work out roughly how many leaves on a tree first count the leaves on say...10 branches. Then work out the average number of leaves per branch by dividing the number of leaves by 10. Count or estimate the total number of branches on the tree. Multiply the number of branches by the average number of leaves per branch to find out roughly how many leaves on the tree. Let me know how you get on! Best of luck!



Experiment With Nature

Here are some activities you can try at home or at school. Please ask for permission from a grown-up before you begin.

To examine the movement of water up a plant

What you need:
A Jar of water
A Celery stalk with leaves
Food colouring

What to do:
1. Add a few drops of food colouring to the water and then add the celery stalk.
2. Leave for about an hour in a warm sunny room.
3. Examine the leaves and the outside of the stalk and then cut through it and look at the inside.

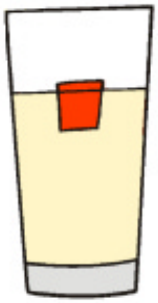
What happens and why?
Water is transported through plants in veins in the leaves and the stalk. By adding food colouring to the water you can see where the water has travelled. The veins in the leaves and stalk should now be red.

Homemade Dye

What you need:
White wool
A white t-shirt
A few daffodil flowers
An old saucepan
Sieve

What to do:
1. Boil the daffodil flowers in some water (be sure to have an adult with you) until the water turns yellow.
2. Using a sieve strain the water to remove the flowers.
3. Add the wool or t-shirt until it changes colour.
4. You can experiment with other brightly coloured flowers to see if it will work with them.

Experiment to show that water is heavier than ice



What you need:
An empty glass
Water
Cooking oil
Food colouring
An ice cube tray
A freezer

What to do:
1. Fill the ice cube tray with water and add a few drops of food colouring. Put into freezer until frozen.
2. Pour the oil into the glass until it is half full.
3. Gently put an ice cube into the oil and record what happens next.

What Happens and why?
The ice cube floats on the surface of the oil but because water is heavier than ice, melting drops of water gradually sink to the bottom of the glass. (Food colouring makes this easy to see.) Now you can understand why icebergs float on the sea!

Watch a Bean Grow

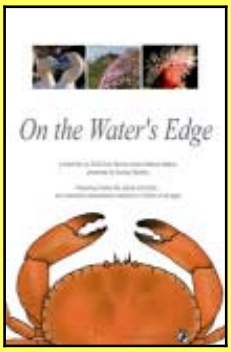
What you need:
An empty jam jar
Cotton Wool
A bean (a runner bean from your local garden centre)
Water

What to do:
1. Fill your jar with cotton wool.
2. Gently push the bean down the side.
3. Using the water, wet the cotton wool until it is all completely wet.
4. Place near a window with the seed facing the sun and watch what happens.

What happens?
After a while the bean will sprout a root and a shoot. The shoot goes up so as to get closer to the sun and the root goes down to find more water. It uses both the sun and water to make food grow.

Learn More

NEW DVD!!

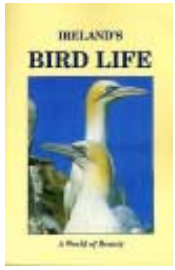


"On the Water's Edge"

Sherkin Island Marine Station has launched a new dvd called *'On the Water's Edge'*. It is made up of a short film on life beside the sea and is presented by Audrey Murphy. It includes interactive material for children of all ages. *Available from: Sherkin Island Marine Station, Sherkin Island, Co. Cork. €16.94 post free.*

A collection of photographs of Ireland's bird life, featuring over 200 colour photographs taken by one of Europe's finest wildlife photographers, Richard Mills.

€16.00 including postage



A Beginner's Guide to Ireland's Seashore is a pocket-sized guide, suitable for beginners of all ages. This book will help you to explore the wonders of marine life found on the shores around Ireland.

Only €6.97 including postage

Only €1.50 each including postage or €8.50 for all seven!

Sherkin Island Marine Station has published a range of colouring books, guides and activity books for children. Each thirty two page *Colouring & Guide Book* gives you the chance to colour, identify and learn about the wildlife around Ireland. *My Nature Diary* and *Safety Sam* activity book will keep you busy for hours.

To order books, send your name and address along with a cheque or postal order made payable to Sherkin Island Marine Station to:

Matt Murphy,
Sherkin Island Marine Station,
Sherkin Island,
Skibbereen, Co.Cork. Ireland.

Careers in Science

Ever thought about working in science? Here are some areas in science that may interest you!

Fishing – Fish are an important part of our diet. There are many different types and many ways in which to catch them.

Aquaculture – This is the farming of fish, shellfish and seaweeds.

Biology – This is the study of living things such as animal and plant life.

Chemistry – Chemists are needed in industry to change raw materials into useful materials i.e. food, drugs etc.

Physics – Physicists study the science of matter and energy and the interactions between the two.

Veterinary Science – Be a doctor for zoo animals, farm animals and pets.

Teaching – Teach subjects such as Biology, Chemistry and Physics in schools, colleges or other centres.

Zookeeping – Zoos need helpers to care for and look after the animals in the zoo.

Museum Work – This can involve looking after the museum, the displays and giving tours of the science exhibits that are on display.

Agriculture – A chance to breed and look after animals and to grow and harvest crops.

Landscape Gardener – Design and develop gardens.

Environmental Control – This can involve studying and preventing pollution.

Wildlife Photographer – The chance to photograph animals and plants for nature books, newspapers and magazines.

Radio and Television – This can involve planning, gathering information and presenting nature programmes.

Publishing – Many publications need writers, artists and designers to create them.

Research – You could work in a lab to study how and why things happen in science.

Park Warden/ Ranger - Look after parks and nature reserves.

The World Around Us

"Foreign Correspondent" Michael Ludwig reports on the some strange goings on in the natural world.

Odyssey of the Rubber Duckies

In 1992 a container of bathtub toys headed for the USA spilled off a cargo vessel during a storm. Since then the yellow duckies, beavers, turtles and frogs have provided a view of the global circulation of the ocean. The escape occurred near the 45th parallel and the ducks floated northward along the Alaskan coast, reaching the Bering Strait in 1995. The gallant little seafarers circled the North Pacific in three years, visiting Alaska, Russia, South Korea, Japan and then returned to North America. A breakaway group visited the Hawaiian Islands. The main flock was trapped in slow moving ice for several years - it took them until 2000 to reach the Atlantic Ocean. But, in 2001, they were sighted in the area of the north Atlantic where the Titanic sank.

During their recent travels, some of the ducks broke away from the flock and headed for Europe. Their global journey is almost over and thousands of other duckies are expected to wash up on the coast of New England, USA in the near future. No information is available on the fate of the beavers, frogs and other escapees. If you find one of the ducks on your beach, it may be part of our flock!

Darwin's Tortoise!

A zoo in Australia, owned by the crocodile hunter Steve Irwin, is home to one of the oldest known animals in the world. Harriet the tortoise, who will turn 176 this year was believed to have been brought to Australia by the famous scientist Charles Darwin in 1835 an incredible 171 years ago! Harriet is a Giant Galapagos Land Tortoise named after the Islands off South America where Darwin found her. She is said to be fit and healthy and it is hoped she will live for many more years.

Invading Asian Carp Pose An Unusual Threat

Four species of imported Asian carp have been escaping from fish farms in the southern US. The escapees are a major ecological problem, but it is the fish's reaction to noise that is making news. Unlike common carp, the grass, silver, bighead and black carp are not bottom-feeders, they feed near the surface. And, they can grow very large, regularly reaching a weight of more than 25 kilos. The problem; the carp are easily startled, can leap 2 or more metres out of the water in reaction to noise and do not check to see where they're going. For boaters, the flying carp pose a serious airborne threat. When was the last time you were hit with a flying fish? However, the fish do taste good!

Exploding Toads

Last spring, in Germany, veterinarians were baffled when eye witnesses had reported toads that had apparently 'blown up' in a garden pond. Many suggestions were given as to why the toads had been found dead like this. Some thought it was poison and others thought it may be a disease. It is however, believed to be an attack carried out by crows while the toads were 'puffed up'. When frightened they fill their bodies up with air so as to make themselves look larger and thereby frighten off any predators. To find out for sure if this is indeed the cause, vets will have to go back to the same pond this spring to see for themselves if it happens again!

Whale Tusk Investigations

Scientists in San Diego in America have proved that the tusk of the narwhal is in fact a sense organ. The 9 foot long tusk is soft on the outside and hard on the inside and has millions of nerves running from the outside of its tusk up to its brain. Scientists carried out investigations on samples of narwhal tusk and on a captured narwhal. It is believed that the whale uses the tusk to detect changes in temperature and pressure in the water around the Arctic where it lives.

Starfish

Starfish and sea urchins belong to a group of animals known as echinoderms - the spiny-skinned animals. As their name suggests, they all have spiny skins, although in some the spines are quite soft and not very obvious.
As well as spines, echinoderms also share another feature; they have bodies which are divided into equal sections, radiating out from a central point - a little like the spokes of a bicycle wheel. This is more obvious in starfish than in sea urchins. However, if you look at the empty shell of a sea urchin, you can see that it is divided into segments, rather like an orange.

Common Starfish

Asterias rubens Crosóg mhara choiteann
This five-armed starfish has a very rough upper surface, with blunt spines that are embedded in its skin. The skin itself can vary in colour from orange to pale brown to mauve. Like many starfish, it has hundreds of tiny tube-feet underneath its arms, each ending in a sucker. These are used for movement and feeding. The tips of the arms are light sensitive and also help find food. Large starfish are uncommon on the shore, but small ones can be found under stones and in rockpools.

Cushion Star/Starlet

Asterina gibbosa Crosóg fhaoilinne

Looking like a small star-shaped pin-cushion, the Cushion Star is easily identified by its short stubby arms. It is one of the most common echinoderms to be found on the lower shore, often on or under rocks and seaweed. However, its small size and green to pale-brown colouring make it difficult to find. Even though it rarely grows bigger than 3cm across, like larger starfish the Cushion Star feeds on worms, brittlestars and other small encrusting animals.

Spiny Starfish

Marthasterias glacialis Crosóg choilgneach

This is one of the largest starfish to be found on the seashore. It has five arms and many tube-feet. Its upper surface bears distinct spines which are surrounded by tiny pincer-like organs. These pincers are used to clear debris from the skin surface, which is usually a blueish-grey colour. The tips of its arms are often tinged with purple, and may be light sensitive. Spiny Starfish eat shellfish such as scallops and mussels, prising the shells open with their tube-feet.

Scarlet/Henry's Starfish

Henricia oculata Crosóg Anraí

This starfish has bright blood-red or purple colouring, giving rise to its nickname of "bloody Henry". It has a rigid body and smooth, chalky skin that sometimes feels slimy because of a mucus coating. Its tube-feet can be pulled into grooves which run the length of the undersides of its five arms. These feet are small and have no suckers. As well as feeding on small invertebrates such as sponges and hydroids, this starfish also feeds on tiny food particles that stick to the mucus covering its arms.

Photos & Text: "A Beginner's Guide to Ireland's Seashore" ISBN: 1-87-049296-X © 1999

Fun Page

How much did you learn?

The answers to all these questions can be found in the newsletter...see if you can remember!

1. Name the four bird species chosen as the Spring Messengers in the Spring Alive Project._____
2. What name is given to 2-3 years old salmon?_____
3. Which is the smallest deer in Ireland?_____
4. Name a butterfly that hibernates during the winter. _____
5. Name three wild flowers that appear in the Spring._____
6. What must you always wear when out on the sea? _____
7. Name the science that involves farming shellfish, fish and seaweed. _____
8. How old will Harriet the Tortoise turn this year? _____
9. Name the whale that has a tusk on its head. _____
10. To what group do sea urchins & starfish belong?_____
11. Can you put meat into a compost bin?_____
12. What is the electrical spark that can be seen in clouds?_____
13. Is it safe to stand near a tree during a lightning storm?_____
14. What is the Irish name for a fox? _____
15. What does the word "nimbus" mean?_____
16. Name the fastest land mammal._____
17. What is the largest shark in the world?_____

Answers: (1) Swift, Swallow, Cuckoo & White Stork; (2) Smolt; (3) Sika Deer; (4) Peacock Butterfly; (5) Daffodils, Violets, Bluebells; (6) Buoyancy Aid; (7) Aquaculture; (8) 176; (9) Narwhal; (10) Echinoderms; (11) No; (12) Lightning; (13) No; (14) Madra Rua; (15) Rain; (16) Cheetah; (17) Whale Shark.

What am I saying....?

Have fun with your friends making up a title for this picture!

Photo: © Audrey Murphy

Answer to "How Many Survive?" on page 4:
The answer is FIVE.

Nature Jokes

Which side of a bird has the most feathers?
The outside!

How do you talk to a fish?
Drop it a line!

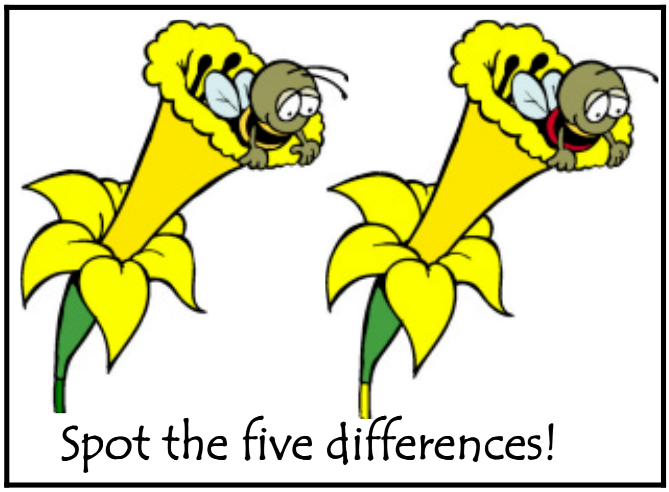
What fish likes to come out at night?
Starfish

Why are fish so easy to weigh?
They come with their own scales

What is a sharks favourite game?
Swallow the leader

Do fish ever have holidays?
No, they're always in schools.

Why do birds fly south for the winter?
Because it is too far to walk.



Spot the five differences!

Composting

One of the most important things that can be done in any household is to make compost. This is where items such as teabags, egg shells, fruit and vegetable peelings, paper, cardboard, grass cuttings, leaves and dead flowers are placed in a large bin or heap in the garden and left to rot. They eventually turn into a rich mixture, so this, not only means you get rid of waste from your house in an environmentally friendly way, but you also produce a fertiliser for your soil.

Any house with a garden could make compost. Although not everyone has a garden or space to make compost, you may have a friend or neighbour that would love to have your household waste for his or her compost. A compost bin is ideal for small gardens and should have holes underneath. If you have a large garden and lots of household and garden waste then a compost heap would be more suitable as a bin would be too small and fill quickly. Your compost heap should be placed out of direct sunlight and heavy rain, as decomposition may not occur if the waste is too dry or too wet.

When you add waste it is best to make layers of about 7-8 inches and cover each one with soil so as to keep away flies. It is also a good idea to add some lime to each layer and water when it gets dry. Some manure can help speed up the process, as can turning it with a garden fork every few days and covering it in soil. It may then take only a few weeks to turn into perfect compost. When it gives off an earthy smell and crumbles like earth it is ready to use. It can be put around vegetables, trees and even in potting plants.

Good Composting Items

kitchen scraps (uncooked items)
fruits & vegetables
banana skins
old potting soil/mix
paper/cardboard
twigs
leaves
tea bags
feathers
vacuum bag wastes
grass cuttings
seaweed
grains & rice
flour & oatmeal
stale bread
newsprint (b&w)
manures
egg shells
wood chips

fish scraps (buried)
straw and hay
pine needles
hair (human, animal)
wood shavings
natural fibres (cotton, linen, wool)
coffee grounds (with paper filter)
crop waste
flowers
bone meal
seashells (crushed)
peanut shells
yard waste
melon rind
potato peels
sawdust (not treated)
corncobs
ground bones
weeds (most, but not all)

Bad Composting Items

meat
grease, fat or oil
dairy products
unground bones
used kitty litter
treated wood
poultry
non-organics (e.g. plastics)
coloured newsprint
treated sawdust
heavily coloured paper
pressure treated wood
plywood
particle board
chunks of wood & branches
perennial or treated weeds
metals

Lightning

A thundercloud is formed when warm, wet air moves upwards in the sky and cools very quickly. Some of the rain drops inside these clouds freeze and turn into ice. The ice and the rest of the rain drops start bumping into each other as the cloud moves around, causing a lot of electricity. An electric spark shoots out to remove some of the build up of electricity in the cloud. This electric spark is called lightning. Lightning may travel from one part of a cloud to another, from one cloud to another, from a cloud to earth or from earth to a cloud.

There are two main types of lightning, sheet and forked lightning. Sheet lightning lights up the whole sky but flashes inside a storm cloud and does not come down to earth. Forked lightning begins when a flash of lightning zigzags to the ground; once it reaches the ground another flash shoots back immediately up into the sky. The flash we see is therefore a fork of lightning jumping between the ground and a cloud and looks like zigzag lines.

Lightning is so hot it is five times hotter than the surface of the sun. It reaches temperatures of 30,000 °C. Since things expand when heated the air around the lightning expands and expands. It does this so quickly that it explodes causing a big bang, called thunder. If there is a storm near you, you will be able to hear the thunder at the same time as you see the lightning, but if the storm is away in the distance you will see the lightning first because light travels much faster than sound. To work out roughly how many miles away a storm is from you, count the seconds between the flashes of lightning and the bang of thunder and then divide by five (for kilometres divide by three).

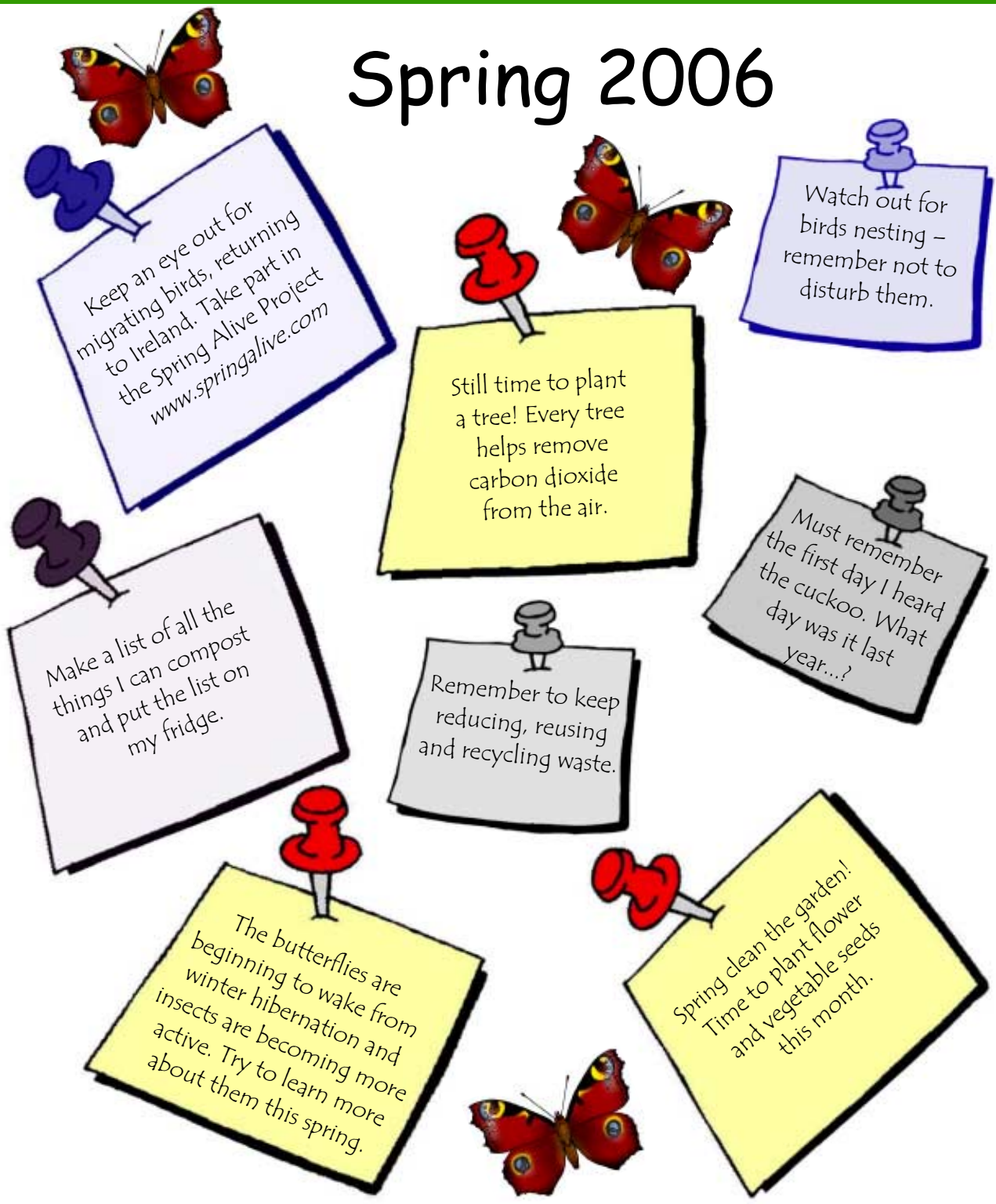
An electric spark shoots out to remove some of the build up of electricity in a thundercloud. This electric spark is called lightning.

"In a thunder lightening storm never stand under-neath a tree, tall building or on open ground"

Sometimes you can hear thunder rumbling in the distance. This is sound waves from the thunder bouncing from cloud to cloud and reflecting back to you.

If you ever find yourself outside during a thunder and lightning storm never stand underneath a tree, tall building or out on open ground. Lightning takes the shortest path to the ground so it will usually pick a tall object such as a tall tree, house, a tower, or a person standing alone in a flat field to go through to get to the ground. Lightning may also hit the same place or the same person several times. A safe place to be is inside you house or in your car.

Nature's Noticeboard!



Sherkin Island Marine Station would like to thank Pharmachemical Ireland for their support in making this newsletter possible. We would like to thank those who have contributed to this newsletter especially Maria Coleman, Bob Cooke, Michael Ludwig and Robbie Murphy.

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