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The Beetles of Sherkin Island & Roaringwater Bay

The beautiful iridescent Rose Chafer beetle. Photograph © Tom Daguerre
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By Matt Murphy

Guardians of Our Lands

WHAT a resource we have in our land. It fulfils a multitude of roles. It gives us food – such as dairy, meat, vegetables and grains – provides us with recreational activities and above all a landscape that is enjoyed and which attracts millions of people to our shores each year. There are a number of elements of that resource, which are often taken for granted. The farmers have the largest input.

The subsidies that farmers receive annually under various schemes, through the European Union, are criticised by the non-farming community and media. The IFA (Irish Farmers Association) in answering these critics on behalf of the farmers rightly point out that without those subsidies farming would be uneconomic for many now on the land.

The knock-on effect would be much dearer food, which would affect society as a whole. Even with subsidies, many farmers would not make a reasonable living without some off-farm work.

These subsidies from Europe have more and more environmental conditions attached to them. These conditions are there to ensure that the landscape is being protected for future generations and are particularly strict about protecting our wildlife. One of the schemes is the Rural Environmental Protection Scheme (REPS 4), involving 30,000 farmers. When they joined REPS, farmers signed up to farm in an environmentally-friendly way. The farmer must employ an independent planner to prepare a REPS plan for the period of the scheme. There are eleven measures, or sections, with subsections, some applicable only to dairy or tillage farmers.

Farms taking part in the scheme are subject to REPS inspection. The Department of Agriculture inspectors do spot checks at farm level to ensure that farmers have done what they have undertaken to do in their farm plan. Farmers who are found not to have complied can be subject to penalties of up to 50% reduction in their grant.

Some of the measures within the scheme require the farmer to:

• Manage nutrients spread on their land.
• Protect and maintain watercourses, water bodies and wells with fencing
• Manage grassland and soil to include stock density during out wintering of animals.
• Drainage maintenance to improve the drainage of certain areas.
• Controlling of noxious weeds.
• Retain wildlife habitats.
• Maintain farm and field boundaries.
• Establish biodiversity buffer strips surrounding features of historical and archaeological interest.
• Maintain a 1.5m margin around the headland of each field. No ploughing, sowing, spraying or fertilising can be carried out.
• Maintain and improve visual appearance of farm and farmland.
• Restrict the use of pesticides and fertilisers near field boundaries, ponds, streams and wells.
• Not burn straw and stubble.

Much of the above requires financial investment and labour input. The environment, without a doubt, gains in a very positive way from the requirements of REPS.

The semi-state body, Coillte, is another guardian that many do not realise has a huge stake in the sustainable management of our natural resource. It is a commercial company operating in forestry, land-based businesses and renewable energy. They cover 0.6 million hectares (7% of the land cover of Ireland), most of which is forested. The forestry side includes log sales, farm forestry services, plant sales. Within their forests Coillte give free access to miles of walking, hiking, cycling, orienteering, fishing picnicding and wildlife watching. It is to be hoped that if Government decides to sell off Coillte that free public access is retained for all time. Strict environmental guidelines must be laid down for any would-be purchasers.

The National Parks and Wildlife Service (NPWS) is also a committed protector of our environment and plays a unique role in the guardianship of six very special landscape – our National Parks. They have around 10,000 hectares of small nature reserves. The parks:

Ballycroy National Park in northwest Mayo, comprises 15,000 hectares of Atlantic blanket bog and mountainous terrain.
Burren National Park in the southeast of the Burren, comprises 15,000 hectares.
Connemara National Park, in West Co. Galway covers some 2,957 hectares of mountainous, boggy, grasslands and woodlands.

Gleneagle National Park in north-west Co. Donegal with over 16,000 hectares of rugged mountains, pristine lakes and peatlands.
Killarney National Park with mountains, lakes, wood and waterfalls, covers 10,236 hectares.

And finally, Wicklow National Park covers part of a mountain range that extends over most of Co. Wicklow.

The National Parks are of special scientific, educational and recreational interest and contain a natural landscape of great beauty, which visitors can access for free.

There is now development of national and local walks throughout the country, which are helping us to get outdoors, to appreciate the landscape and above all to help us to be more health conscious. They feature both coastal and inland walks, taking in archaeological and historical sites, local flora and fauna and villages. The Beara and Sheeph’s Head walks in southwest Cork Millennium Stone Loop, which explores the unspoilt Glen of Aherlow, the Spink Look walk in Glendalough, the Cavan Way and the Kerry Way are but a few. There are many local and some national groups such as Birdwatch Ireland and An Taisce that contribute to the protection of Ireland’s National Resources.

We have a very precious natural resource in our land and we should all be interested in its protection. Throughout the world there are many people suffering from famine because continuous droughts have destroyed their meager lands. What these people would give for this wonderful green landscape to feed their families and the health to enjoy it.

Matt Murphy, Director, Sherkin Island Marine Station, Sherkin Island, Co. Cork.
Mediterranean Gulls

By Oscar Merne

Those of us interested in wildlife conservation have become used to reading depressing news about loss and destruction of habitats and more and more species being listed as threatened or endangered. However, not all is doom and gloom, as some species are doing very well, and extending their ranges. Here in Ireland we have seen a number of birds arriving here in recent decades and establishing breeding populations. Some good examples are Collared Dove, Reed Warbler, Little Egret, Great Skua, Great Spotted Woodpecker … and, the subject of this article, the Mediterranean Gull.

Mediterranean Gulls are restricted to the Western Palearctic Zone, with the core breeding area in the Ukraine, on the northern side of the Black Sea and in the Sea of Azov. In the latter half of the 20th century the population underwent a rapid increase in numbers, now estimated to be between 120,000 and 320,000 breeding pairs – the wide range is due to movements of major Ukrainian colonies from year to year, making population estimates difficult. But with the range expansion outlined above, non-breeding, overwintering birds were also found increasingly in north-west Europe, including Britain and Ireland. Before 1966 there were only four records of vagrant Mediterranean Gulls in Ireland, but between then and 1980 the species turned up almost annually in very small numbers, mainly on the east and south coasts. Thereafter, non-breeding birds increased in numbers and during the last decade flocks of 50–100 have been seen, and a few (up to 15 pairs per annum) have been breeding regularly in mixed gull and tern colonies in Co. Wexford and Down, and occasionally elsewhere.

Adult Mediterranean Gulls in full breeding plumage are usually easy to distinguish from the somewhat similar and much commoner Black-headed Gulls, even in flight at long range. The two species resemble each other superficially, but the Mediterranean Gulls are larger and bulkier-looking than the Black-headed Gulls, have a black head rather than the dark brown of the Black-headed Gull’s head, and the black on the head extends further down the nape. Both perched and in flight, the Mediterranean Gull’s wings can be seen to be pure white, while the wings of the Black-headed Gull have a prominent white leading edge and blackish trailing edge. In winter plumage, the black or dark brown head of the two species are lost, but the wing patterns remain a good way of separating them.

Close up, the bill of the adult Mediterranean Gull is “heavier” than that of the Black-headed, is mainly red, with a yellowish tip and a narrow black band separating these colours. The bill of the Black-headed Gull is slimmer, and red with a dark tip. Both gulls have red legs. Before the gulls moult into their adult plumage described above, they progress through several plumage phases from juvenile to first winter, first summer, second winter and second summer. Field identification becomes progressively less difficult as they approach adulthood.

Since 1999, when 25 Mediterranean Gulls were present at Sandycove (between Dun Laoghaire and Dalkey, on the south side of Dublin Bay) from August to December, this location has become the premier site for the species in Ireland. Numbers of gulls have increased there annually, reaching a peak of 101 in autumn 2010. Observations throughout the year are showing that the gulls are present for much of the year, not just in the winter months. Adults in full breeding plumage, immature birds, and even recently-fledged juveniles, are now appearing as early as the end of June, with many staying until late April or even early May of the following year. At Sandycove, the gulls spend most of the day time loafing on the granite rocks between the East Pier at Dun Laoghaire and the Forty-foot swimming place at Sandycove, apparently doing very little if any foraging for food, except taking bread thrown to them by local people. Recent studies have shown that the gulls fly inland to feed on worms and other soil invertebrates at parks and playing fields up to 10 km from the coast. Many do so early in the morning, but if the ground is waterlogged by heavy rain they can be seen at any time during the day. Another activity that has been noticed recently is the foraging of Mediterranean Gulls to freshwater stream outfalls on the south side of Dublin Bay, between Sandy mountain and Booterstown. What the gulls do at night is still a mystery…

Ornithologists have been ringing many Mediterranean Gulls (both chicks and adults) in colonies in Europe in recent decades. Together with standard numbered metal rings, many birds have been fitted with brightly-coloured plastic leg rings with alpha-numeric codes that can be read in the field with binoculars or telescopes. Each year a number of these marked birds have been seen in Ireland – mainly at Sandycove and in Cork Harbour – and from these we know that Mediterranean Gulls are coming here from as far away as Hungary, Denmark, The Netherlands, Belgium, northern France and England. We also know that they are not simply passing through on passage migration, but are often staying for long periods (some from July through the winter to April), and also returning to the same place in successive years. It will be interesting to see what other findings about these attractive and enigmatic gulls emerge over the coming years.

WOOD SHIPS AND IRON MEN

By Daphne Pochin Mould

HOW ever did they do it? Forge engines and the GPS. These days it will guide you from your own front door to your favourite pub, though maybe not your staggering route back. But I am thinking of the hours full of wooden sailing ships, all powered by the wind; no engines but travelling and trading with the world. Could you, modern sailor, on sail alone, and only with an outline of a map, get yourself to Iceland to raid the Westman Islands and carry a load of slaves back to Africa? Yet the Algonquian "pirates" (explorers/empire builders?) did, as well as taking Baltimore in Co. Cork and many other places one presumes. They were tough sailors, with years of load. They were tough fellows, with years of

Theorists still use "lunars" instead of the new latitude. Combining the two gives a position on 2nd of May,ὸ 3pm admission 2s 8d. But for 8s 1d you could go and visit as often as you liked. There was plenty to see. With maps and charts, it covered Birds, Beasts and Fishes and included some live kangaroos. It also gave an account of the native population and their customs, part of our far off ancestors’ activities with ropes and logs, have given birth to countless log books.

Every ship keeps its log book, and log books from old sailing vessels make fascinating reading. “From here I take my departure” (from a known point, say the Old Head of Kinsale) and then working on dead reckoning. But the sea is no millpond but very much on the move, so a canny captain would factor in “I allow for the heave of the sea”.

An article in the Hibernian Chronicle of 1801 describes how these little ships were able to put a girdle round the earth and go on doing it. The writer says that not so very long ago people thought the accounts of great voyages, even of Sir F. Drake, were read with interest but disbelief. Now for real, the ships set out from Ireland across the Atlantic and would arrive at the Brazils. They would then turn eastward, round the Cape of Good Hope, and keep south of India and its islands, going on for Australia – that is if they were not to pick up items from India or tea from China, in which case they diverted to do this. Otherwise they picked up the Australian coast and sailed along to Port Jackson and Botany Bay. Learning for home, they went east across the Pacific, round Cape Horn to the Atlantic and eventually Ireland. The southern part of their trip took them into those seas where the waves drive unbroken round the world. Cold, moutaineous and iceberg strewn they move around lands of the albatross and the penguin. You had to be tough for that sort of life. What the emigrants and convicts thought of it all, we can only guess at – perhaps the road to fortune and the excitement of a new world? Whatever they dreamed of, they made the tough, proud Australian nation. Sadly, as in other newly colonized countries, they had no time for the native people and their culture, and treated them brutally.

Now it is hard to imagine Cork Harbour full of sailing vessels and trading caravans wide – convoys of 100 sailing ships, protected by naval, armed war ships, setting off for the East or the West, and round the Cape. Then, in the first years of the 1800s, a small barge on the Forth and Clyde canal was given a steam engine and it worked. Ships and engines got bigger. For a while captains of "steam kettles" could be left far behind as a fast sailing ship swept past. Captain Richard Roberts steamed "Sirius" of Cork across the Atlantic and back, hotly followed by Brunel’s "Great Western". The age of large, engine-powered ships had begun. Advising a young friend who had worked both in sail and early steamers, told him the future lay in steam, but SAIL IS PLEASANTER. As indeed it is, and may yet make a comeback as some freighters are experimenting with auxiliary sails or kites. When wind power is there, why not use it.

Ships were and are built to last. In days of wooden ships, every ship carried a spare keel and even of Sir F. Drake, were read with interest but disbelief. Now for real, the ships set out from Ireland across the Atlantic and would arrive at the Brazils. They would then turn eastward, round the Cape of Good Hope, and keep south of India and its islands, going on for Australia – that is if they were not to pick up items from India or tea from China, in which case they diverted to do this. Otherwise they picked up the Australian coast and sailed along to Port Jackson and Botany Bay. Learning for home, they went east across the Pacific, round Cape Horn to the Atlantic and eventually Ireland. The southern part of their trip took them into those seas where the waves drive unbroken round the world. Cold, moutaineous and iceberg strewn they move around lands of the albatross and the penguin. You had to be tough for that sort of life. What the emigrants and convicts thought of it all, we can only guess at – perhaps the road to fortune and the excitement of a new world? Whatever they dreamed of, they made the tough, proud Australian nation. Sadly, as in other newly colonized countries, they had no time for the native people and their culture, and treated them brutally.

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The Beetles of Sherkin Island & Roaringwater Bay

By T. R. Daguerre

History of the Collection: 1981 to 1995

Since surveys began in 1981 Sherkin Island Marine Station has compiled a truly stunning collection of beetles. It contains 550 different species in fifty separate boxes with well over 1000 individual specimens. There have been five contributing Coleopterists (someone who studies beetles) that have put this impressive collection together over the last thirty one years.

The first to survey beetles and the founder of the collection was Rosemary Moore. She began work in 1981 and 1982, recording an astounding 358 different species in the two years of her survey – a most remarkable achievement. Of these species 49 were new records for Cork, 14 new to Munster, and 4 new species to Ireland. She set the bar for all future work, laying the foundations for all who have followed her.

After Moore’s amazing discoveries ten years went by until the next Coleopterist arrived at Sherkin Island Marine Station in 1991 and 1992. Simon Bird took the reins and added 104 new species of beetle to the collection – 34 new to County Cork and 8 new to Munster. He was instrumental in starting to expand the number of islands included in the survey, recording species from nine other islands of Roaringwater Bay. In 1993 Anna Wood added a further 20 species to the checklist and in 1995 Stuart Munro added 6 more, also surveying three other previously unsurveyed islands and expanding the records of species distribution.

2010

In 2010 the project was resurrected. It was designed to increased the knowledge of distribution of beetles across Roaringwater Bay as well as to discover species that had been overlooked in the last decade and a half. It was successful in compiling 187 new records of 107 species from nine islands of the bay, also recording from two previously unsurveyed islands. Of these records 15 were new species to the marine station’s checklist taking the total to 550 species recorded from across 15 islands. 5 species were seemingly new to Co. Cork and 1 new to Munster.

2011’s Additions

In 2011 further work has been done to expand the recorded distribution of species across the islands of Roaringwater Bay. Eight islands were surveyed, two new to the study. 167 new records of 93 species were recorded across these islands with twelve new species added to the checklist, currently subject to confirmation. The additions of 2011 will take the overall number of species recorded by the Sherkin island marine station to 562 with records of distribution from 17 islands, an amazing and unequalled survey in south west Cork. From the distribution records it has been possible to identify the most common and the rarer species across the bay’s islands.

Sherkin’s Modern Day Beetles

Approaching the project in 2010 it was apparent that no work had been done on the population numbers of Sherkin’s larger and most abundant beetle species for fifteen years.

The Station has compiled a collection of 550 different species of beetle. Assessment of the of the abundance of certain indicator species across varied habitats on Sherkin was undertaken to explore whether these habitats still supported populations that compared to numbers recorded in past research. It was found that the relative abundance of the selected species was comparable to results of the previous surveys from 1991, 1993 and numbers were even up on 1995 suggesting that the island is ecologically healthy. Good news for beetles and the other wildlife associated with them.

Unique and Biologically diverse

The amazing diversity and high abundance of beetles recorded by the Sherkin Island Marine Station is a clear reflection of the abundance and variety of plants and other wildlife of the area. Invertebrate life has been shown to indicate the over-all health and quality of the wider ecosystem. This diversity in beetles alone illustrates the value of the islands of Roaringwater Bay and qualifies them as some of the richest natural habitats in Ireland. If the other factors such as the rare plants, animals and people are taken into consideration its apparent this area is a wealth of natural phenomena that is prevalent in every aspect of day to day life, a culmination of wildlife and culture that is thoroughly unique.

The beetle collection resides in the archives of Sherkin Island Marine Station.
This position as apex predator gives rise to a common misconception – that sharks, and shark populations, are highly resilient to human activities. Sharks, in fact, display remarkably vulnerable biological traits: slow growth, late sexual maturity, relatively few offspring and longevity. In short, they do not fare well in the face of commercial fishing – a vulnerability magnified by the wasteful practice of shark finning which has emerged to exploit this increasingly lucrative resource.

**Shark finning**

To many people in the UK and Ireland, shark finning is something that happens in the faraway Pacific Ocean or South China Sea. The reality, however, is much closer to home: Spain, an EU Member State, is the world’s third largest shark fishing nation, while approximately one third of all shark fins sold in the Hong Kong market, the largest shark fin market in the world, come from Europe.

In the twenty-first century shark fins have become a commodity in a global trade worth billions of euros each year, supplying the incessant demand for shark fin soup. And with the fins of up to seventy million sharks passing through the fin trade on an annual basis, shark finning is now the greatest threat to sharks. However the issue is far more complicated than an easy media headline would suggest – any fins on a vessel without a carcass would be illegal, and the ability to identify the species landed would aid data collection and species-specific management. An increasing number of countries are adopting this option.

Europe has had a finning ban since 2003, but there is the option to derogate – for Member States to issue permits, until late 2008/early 2009 Germany and Portugal still remove fins at sea, and with Spain the third largest shark fishing nation in the world this is a significant issue. The EU finning regulation is currently under review and the Shark Trust, working with the Shark Alliance, will be heavily advocating for the EU finning ban to be tightened and enforced according to its original intent – that no shark fins are removed at sea.

To find out more about shark finning visit www.sharktrust.org/campaign and select Stop Shark Finning.

**References**


John Richardson is a Conservation Officer with The Shark Trust and was a volunteer at Sherkin Island Marine Station in 2007.
Lough Hyne
The Marine Researchers – in Pictures

Reviewed by Matt Murphy

USUALLY the history of a place is in the written word, however in a unique and accessible way the scientific research history of Lough Hyne, Europe’s first Marine Nature Reserve, is presented in a fascinating book of photographs and captions by Terri Kearney. The Reserve is a saltwater lake situated 5km south-west of Skibbereen in West Cork.

This visual archive spans over a century, from 1886 when scientists on a Royal Irish Academy was forced by rough weather to take shelter in Barlogue Creek just outside the lake. Little research was undertaken until 1923 when Prof. Louis Renouf of the Zoology Department of University College Cork made his first visit. Thus began a life-long dedication to promoting this unique salt-water lake.

Prof. Renouf’s first “field laboratory” in 1926 was amazing and is photographed in the book. It was a large timber packing case placed on its side, with the lid supported by two columns of stones. In 1928, the Professor erected a timber army hut at the Rapids, which was fitted out as a laboratory and aquarium. Early photographs show the Professor’s family, including his wife Nora. The photographs bring us through the 1930s, documenting the arrival of scientists from Britain who helped Prof. Renouf establish Lough Hyne as a unique marine site. The photographs are intertwined with local people and scenes. One of “Dancing at the platform just behind the North pier” shows couples in their Sunday best, with all the men in suits and wearing caps!

Through those early years of the 30s, 40s and 50s, the visiting university groups from the UK camped in their beautiful bell-type tents. A new laboratory was built in the early 50s, with the help of the students. Louis Renouf is seen placing the “time capsule” in the foundations. Photographs are abundant of students and scientists working in the outdoors. One of sampling on the rapids with Jack Ketching and Ronald Bassindale, shows them using butter boxes as an outdoor “lab”. A number of pages will bring back memories for local people of the mobile creamery at Ballymacrom, with the donkey and horse carts. The great Denny Salter of Salter’s Bar (now Bushes) in Baltimore is featured, with the present sailing club being built in the background.

It is amazing that there are now over 450 scientific papers based on studies carried out at Lough Hyne. None of this research would have happened but for the vision of Prof. Louis Renouf and his family’s support, especially his wife Nora, who would feed and entertain the many visitors in those early years. This is an extraordinary story brought so alive by Terri Kearney of Skibbereen Heritage Centre. I hope it will be an inspiration to present-day students and scientists that the finest of science can be carried out without luxurious laboratories and expensive “tools”.

The final pages of the book have two gems: the first is Prof. Renouf’s timber hut lab. This was swept into the lake by a high tide many years later. Neilly Bohane recovered it and brought it to his farm at Dromadoon, where it is still in use today. The second: the first boat used by the Professor in 1923 is still used nearly 90 years later by Denis O’Driscoll near Goleen. The boat was built by Skinners’ Boatyard at Rath in 1915 for £1 per foot by Denis’ father.

This wonderful book of photographs, which includes many local people and views would be a marvellous Christmas present.

MY favourite time of year on the Great Barrier Reef of Australia is November, when the trade winds are lighter and the grey and rain of cyclone season have yet to arrive. But if you want to see dwarf minke whales you need to be there in June and July, when the trades are usually at their strongest. In the southern summer (December to March) this subspecies of *Balaenoptera acutorostrata* – one of the smallest baleen whales – is found in the sub-Antarctic around 60 degrees south feeding largely on krill. They come north to calve.

I lived in Cairns in northern Queensland for six years, which had the advantage that I could watch the weather maps looking for the short breaks between the high pressure systems that generate the trade winds, and then phone around to see who had space on their boat. One year I was lucky to get the last bed on Undersea Explorer, more a floating commune than a dive boat, with minke guru John Rumney as skipper. There were minke researchers on board too, which added to the party atmosphere.

Queensland is highly regulated when it comes to interactions with marine mammals. When I first heard about what you must do to be in the water with minke whales I was incredulous. Thick floating lines trail from the drifting boat, the snorkellers must hang on to the lines at all times and wait for the minkeys to approach them. Yeah, right! I was suitably chastised by the whales’ behaviour. Although 9m long as adults, they are shy and take a while to get comfortable with people. People apparently attached to the boat are not much to fear, and the inquisitive whales circled, first at the limit of the 30m visibility, then closer. They vocalise to one another making a noise like pigs grunting. Over two and a half days of perfect weather and five knot winds, 58 different individuals were identified by the researchers Dr Alistair Birtles and the late Dr Peter Arnold. The boldest whales came within a metre, rising vertically right next to the snorkellers clutching the line. Sometimes there were half a dozen whales around the boat at once. Once they had found the boat, the whales would hang around for hours. Sometimes they will stay with the boat all day. During a single short season, more than 350 individuals have been identified using photo i.d. and some return repeatedly.

Permits for swimming with whales are tightly controlled and the code of practice that the operators adhere to is rigorous, but it certainly seems that the industry has no impact on the whales, yet creates thousands of ambassadors for whale conservation every year. By enforcing respectful and discreet behaviour by boats and people in the water, it seems that at least in this whale watching industry great encounters occur without adverse impact on the whales.

Pete Atkinson was a volunteers at Sherkin Island Marine Station over 30 years ago. Pete studied marine zoology at Bangor University, continuing a life-long obsession with the natural history of the oceans. In 1982 he bought Eila, a 1935 classic yacht, which he sailed all over Polynesia, writing articles and taking photographs. After 17 years and 45,000 miles, he bought Vigia, a 13.5m aluminium yacht to continue his travels in the Pacific. In 2004 Pete sailed to Cairns, bought a house, sold Vigia and married the Thai photographer Darin Limsuansub. They now live in Phuket, Thailand. www.peteatkinson.com
West Cork, a hotspot for rare Irish plants

By John Akeroyd

THE Wild Plants of Sherkin, Cape Clear and adjacent islands of West Cork (1996) was a milestone in the study of the plant life of Roaringwater Bay. Now the publication of its Supplement is an opportunity to reflect on the special wild plants of Sherkin and other islands, and the flora of this far western district of West Cork. For ‘Carbery’s Hundred Isles’ and the adjacent mainland have emerged as a veritable botanical hotspot, and a refuge for rare and threatened Irish plants.

Some islands – Sherkin, Cape Clear and Heir or Inis Ui Driscoll – are easily visited. Others, such as Castle, the Calfs and the Skeams, are remote, unpopulated and seldom visited, except by Sherkin Island Marine Station biologists. Each has its own botanical riches, although Sherkin has almost all the 635 plants recorded from the islands in Roaringwater Bay. An unknown person would say that’s because we’ve been recording there so busily! – in fact Sherkin has a much-indented coastline and varied topography and habitats. It’s rich in the habitats that are particularly good places to look for plants, including the rarest: rocky coastal pastures and heaths, blown sand and disturbed ground.

Other islands too have plants not found on Sherkin, such as Little Robin (Geranium purpureum) on a single strand on Long, otherwise largely restricted to walls in Cork City. This and other rarities are included in the Irish Red Data Book: the islands in Roaringwater Bay have 14 such rare plants, while three more occur on the adjacent mainland.

Spotted Rockrose (Tuberosa guttata) is West Cork’s floral ‘jewel in the crown’. It occurs in West Galway and Mayo, but its Irish headquarters is here: islands in Roaringwater Bay, on and around Mizen Head, and Bere Island in Bantry Bay. Recorded in the 1930s, it was re-found in 1992 – it’s more than 5 cm tall, usually much smaller. Since then we’ve discovered it on Castle and Long, with new populations on Heir. A plant of rocks among stunted heather, on thin peaty soil that dries in summer but remains wet in winter. It may have survived the Ice Age in the area, along with some mountain plants, and later grew on bare ground after the ice melted – it’s really a Mediterranean plant.

Rocky places in heathy pastures are home to rare Irish clovers and related ‘peaflowers’. Like Spotted Rockrose, these sub-Mediterranean plants need a mild climate but also habitats that dry out in summer. The most important is Hairy Bird’s-foot Trefoil (Lotus subflabellatus), which often grows with the more widespread Bird’s-foot (Orchitopus purpuratus) – West Cork and Co. Wexford are their main areas of Irish distribution. Both Soft Clover (Trifolium striatum) and Bird’s-foot Clover (Trifolium ornithopodoides) persist sparingly, especially around Horseshoe Harbour on Sherkin. We don’t see them every year, yet they never quite disappear! A plant of damper heaths near the sea is Pale Dog-violet (Viola lutea), with large white-violet flowers in May. This West Cork speciality has a few scattered sites elsewhere in Ireland.

Cultivated and disturbed ground is another place to seek rare plants. Most are less competitive than the usual docks and thistles of cultivated land, and they’ve decreased nationally since the 1950s. Five fumitories, plants almost restricted to cultivated land, occur on Sherkin and elsewhere, including the nationally rare Purple Ramp-fumitory (Fumaria purpurata) and White Ramp-fumitory (F. capesilvatica), the latter more a plant of hedges-banks than gardens. Fumitories, with feathery leaves and pinkish flowers, are hard to distinguish, but both these species have rather showy flower-clusters and down-curved fruit-stalks. Other rare plants of disturbed ground are two miniature snapdragons, purple- and yellow-flowered Sharp-leaved Snapdragons (Antirrhinum arvensis var. lilacinum), near the community centre on Sherkin – new to Ireland!

Other rare weeds, including old medicinal plants, persist around buildings and on waysides, vulnerable to improved road-vertues and tidiness. In particular, Elicampea (Undula helenium), a robust 1–2m-tall yellow daisy, and Marsh Mallow (Alcea paludosa), a hairy miniature hollyhock, survive here and there on Sherkin and Cape Clear. Both were once remedies for coughs and other illnesses of cold damp farmhouses.

There are plenty more examples, an astonishing richness of rare plants in need of our protection. Not only are Marine Station botanists recording all these plants and others, but also they are monitoring their ecology and numbers. The data from this long-term project will be published in due course.

Dr John Akeroyd has been visiting and recording plants on Sherkin and Roaringwater Bay for 25 years. He edited The Wild Plants of Sherkin, Cape Clear and adjacent islands of West Cork (1996), co-authored a Supplement (2011), and is author of A Beginner’s Guide to Ireland’s Wild Flowers (2008).
Cleaning up the mess we made

By Walter Mugdan

FROM time immemorial, a fundamental issue confronting human society has been how to dispose of our wastes. For the most part we have done a pretty bad job of it. The series of articles will focus on the witch’s brew of toxic chemical wastes that are the bitter fruits of the Industrial Revolution. The series will explore how we got into the mess we are in, and how we are now starting to try to get out of it.

From the time our first hominid ancestors tamed fire, the amount of waste each individual human makes has exceeded that made by any other animal of comparable size, and the disparity has only continued to grow. Over the millennia we learned how to make and use tools, grow food, domesticate animals, make implements from bone, wood, stone, clay, metal and glass, and build ever larger and grander structures. With every technological advance, our per capita waste “footprint” expanded also.

And what we have done with our wastes has almost invariably been to throw them away. Archaeologists are delighted that ancient societies often threw their wastes onto piles or into pits near their habitations. Ashes from cooking fires, food wastes, flakes from flint knapping and the making of arrowheads, ceramic shards, and broken items from totems to toys all found their way into these ad hoc landfills. They have proven to be an important window through which scientists can catch a glimpse of how our ancestors lived.

So where do we tend to put all our waste materials? Two favoured locations have been holes or depressions in the ground; and what we now call wetlands and used to call swamps. We know now that wetlands are among the most productive ecosystems on earth (along with coral reefs and tropical rainforests); but in the past they were often dismissed in as pestilential quagmires that served no useful purpose. Throughout the world, wetlands near agricultural communities have been drained to expand farmland, while wetlands near towns and cities have been filled – often with with wastes – and then converted to what people considered to be better uses. Large parts of London were swamps in Celtic times. Similarly, the islands that make up New York City are considerably larger today than four centuries ago when Henry Hudson first saw the area. Indeed, much of Manhattan’s current shoreline is hundreds of feet further out than it was in Hudson’s day; and all three New York area airports, as well as the World’s Fairs of 1939 and 1964–65, were built on filled wetlands.

Still, for most of human history the amount of waste each person created and discarded was relatively small, and was primarily organic and “natural” in origin – think food and agricultural wastes, wood debris, ash, etc. Construction materials such as quarried stone and fired brick, and metals like copper and iron for implements, were difficult to extract and work, and so they were used and reused and reused yet again.

But this rapidly began to change with the onset of the Industrial Revolution. In the 18th century coal replaced wood, peat and dung as a primary source of energy, and in the 19th and 20th centuries oil and gas augmented or replaced coal. The amount of energy available to human societies increased exponentially over the past 300 years, allowing the creation of the disposable consumer society prevalent today in most of the developed world. In consequence, the amount of waste generated by each person – directly and indirectly – has also increased exponentially. The average American generates about 4.5 pounds of garbage each day, and this doesn’t count the wastes generated by the industries that support America’s lifestyle, from automobiles to electronics to processed foods.

Along with an incredible increase in the volume of wastes that we as individuals and as modern societies create, the nature of those wastes has also changed dramatically … and invariably for the worse. In fact, the Industrial Revolution has also been a Chemical Revolution, as we have created a staggering number of compounds that never existed in nature, and to which earth’s organisms therefore never had a chance to adapt.

Among the first industries to experience a massive expansion at the start of the Industrial Revolution were mining and metal smelting. These were the enterprises necessary to extract and use the coal, and make the metals, on which the developing industrial society came to depend. These industries leave behind large quantities of wastes at every step of the way, from mine tailings to coal ash, smelter slag and foundry sand. Moreover, these wastes concentrate and expose chemicals that in nature are inaccessible. For example, coal is laden with impurities such as sulfur, mercury and other metals, which are then released as air pollutants when the coal is burned, or remain as residual contaminants in the ash. Similarly, many ores of desirable metals also contain undesirable substances. As an example, arsenic is commonly found in iron ore, and can become accessible and/or concentrated in mine tailings and smelter slag. Often, industrial chemicals never seen in nature are used to work the materials, such as harsh acids that are used to liberate metals from their ore...
matrix. These, too, end up as waste products. And of course, many useful metals are themselves hazardous, such as lead, mercury, and chromium.

A significant frontier in waste generation was crossed in 1792, when the Scottish engineer William Murdock pioneered the process of commercial coal gasification — that is, turning the solid lumps of hard, dark mineral into gaseous form. Murdock, a colleague of James Watt of steam engine fame, heated coal in the absence of air, converting most of the coal to methane gas. This gas is very similar to the natural gas that many of us use today to heat our homes or cook our meals.

Initially, Murdock’s technique was employed mainly to produce gas for lighting. Within just a few years gas lighting became common in many factories in Britain. By 1814, gas streetlights were being installed in London and by 1819 close to 300 miles of pipe had been laid in that city to supply some 51,000 burners. In 1816 the first coal gasification operation started in America, also primarily for use in lighting. For many decades, coal gas was the dominant fuel for indoor lighting, and for nearly a century it was dominant for urban street lighting. More than 1500 “manufactured gas” plants operated in the U.S. in the past. New York City alone had several dozen; the last such plant in New York State closed as recently as 1972.

In due course, gas gave way to electricity as a means of producing light, but gasification of coal continued to be important for many other industrial purposes. Indeed, we learned how to use some of the wastes from coal gasification as the raw materials for the predecessor of what today we call the petro-chemical industry. Coal gasification is an extremely messy business, leaving behind large volumes of coal tar — a thick residue loaded with hazardous or toxic compounds such as polyaromatic hydrocarbons (PAHs) that are known or suspected carcinogens. In 1834, German chemist Friedlieb Runge isolated from coal tar a chemical later called aniline, the basis of the aniline dye industry from which sprang corporate giants like BASF, GAF and IG Farben. Many other compounds that today we make from petroleum were first made from coal tar.

Coal tar continued to be a major feedstock of the chemical industry well into the 20th century. Nazi Germany, with plenty of coal but not much oil or natural gas, depended on gasification to create some of the substances on which its chemical, fertilizer and armaments industries depended. During World War II, Britain and France also used the technology, for similar reasons.

Alas, the same coal tar which spurred much of this chemical ingenuity also created an enduring legacy of toxic waste sites. The gooey stuff never really hardens, and when dumped on or in the ground (as it usually was) it oozes downwards until it reaches an obstruction like bedrock, and then keeps moving sideways. It severely contaminates everything in its path — not only the soil, but also any groundwater or surface water with which it comes into contact. For example, the mud underneath New York City’s infamous Gowanus Canal, home for over a century to three manufactured gas plants, contains nearly 5% coal tar waste.

Over the course of the 20th century, the petrochemical industry supplanted the coal tar-based chemical industry (although the process of heating coal to produce coke and gas is still used today in the metallurgical and other industries). The oil and gas industry, of course, has left its own legacy of pollution and toxic wastes to rival and eclipse that of its coal-based predecessor. These include massive oil spills like the 2010 BP spill in the Gulf of Mexico or the Exxon Valdez spill in Alaska two decades earlier; and wastes from the refineries and chemical plants fed by the industry that include pollutants like benzene, toluene, xylene and others far more exotic, many of them carcinogenic or otherwise hazardous.

The plastics industry traces its roots to 1868 with the invention of celluloid by the American printer John Wesley Hyatt. Three decades later Dr. Lee Baekeland introduced phenoformics, a more versatile class of plastics, made from coal tar or petroleum, which could be liquefied and formed into myriad shapes. Today, over 100 billion pounds of plastic, of dozens of different types, are produced each year in North America alone, primarily from petroleum. Much of that plastic ends up as waste — think, for example, of the vast numbers of water and soda bottles we toss out each day. And, of course, the manufacturing processes that make the plastics have their own waste streams to contend with.

Since the dawn of agriculture, humans have cultivated their farms. For most of the past 10,000 years this was done through application of animal wastes — manure and urea. In the early 1800s, we learned how to extract a new class of phosphate fertilizers from rocks, which of course had to be mined and processed. A century later German chemist Fritz Haber discovered a way to extract ammonia from atmospheric nitrogen for subsequent transformation into synthetic fertilizers. This chemical process revolutionized agriculture (and a number of other industries as well), helping to make possible the unprecedented increase in human population over the last century, from less than 2 billion in 1910 to over 7 billion today. The manufacture of both phosphate- and nitrogen-based fertilizer creates hazardous wastes, often in large quantities. In addition, excessive use of the phosphorus fertilizers themselves also poses serious environmental threats.

As long as people have had farms they have feared agricultural pests. People have used pesticides of one sort or another for over 4000 years. The earliest known use was in ancient Sumeria, where elemental sulfur was used to protect crops. But the modern pesticides industry traces its roots to the first half of the 20th century with the invention of chemicals like DDT (implicated in worldwide population declines of eagles and other large birds), dieldrin, aldrin, the infamous Zyklon-B used in Nazi extermination camps, and the herbicide Agent Orange used by the U.S. in the Vietnam war which was found to be contaminated with dioxin, among the most toxic chemicals known. The purpose of most pesticides is to kill living organisms, so it is no surprise that wastes from the manufacture of these products, as well as their use, can pose serious risks to human health and the environment.

Coming in Part 2: more about the major industries that have shaped our lives, the toxic legacy they have too often left behind, and the steps we have taken to start to clean up the mess.
Fishing Salmon Sustainably

By Ciaran Byrne

INLAND Fisheries Ireland (IFI) is the State agency responsible for the conservation, protection, development and enhancement of the inland fisheries and sea angling resource, and quite logically it reports to the Department of Communications, Energy and Natural Resources, as our inland fisheries are a significant national resource, there to be sustainably exploited. The habitats and the fish themselves form part of Ireland’s rich culture and biodiversity and they also play a key part of Ireland’s tourism offering.

In looking at the various species that make up our native fish stocks, the salmon is the one that most Irish people can immediately relate to. Generations of children have learned about the salmon of knowledge, and the salmon is an iconic symbol of Ireland’s rich culture and biodiversity and they also play a key part of Ireland’s tourism offering.

In this regard not a lot has changed, it is estimated that all overseas anglers contribute approximately €105 million to the Irish economy and domestic anglers also contribute significant millions. In a 2003 study by INDECON it was reported that overseas salmon anglers had an average daily expenditure of €203 each, while a domestic salmon angler spent €136 per day. Thus, in the midst of one of the worst recessions the country has ever seen, where there has been a significant refocusing on the importance of tourism as a driver of economic growth, we have a natural resource which, if sustainably exploited, can deliver a massive boost to the Irish economy. Most importantly, most of the economic benefit from angling is generated in rural communities which have been hardest hit in the downturn.

You would think that with such an important resource that people would do all in their power to protect it and ensure it is sustainably exploited. Unfortunately this is not the case. Inland Fisheries Ireland is currently tackling a scourge of illegal fishing. “It was only a few fish for the freezer”, “why don’t you go and get real criminals”, “there are plenty more fish in the river” “I’m entitled to take” “why don’t you go and get real criminals”, “few extra fish” or who do not perhaps stick to the rules”. Let’s be clear, in both cases people are guilty of committing environmental crime and breaking the law, it is not a case of ‘I have only done a small thing, it is really the other guy that is guilty’.

There is a large suite of fisheries laws in place ranging from national legislation to local bye laws. What each of these laws is designed to do is to ensure that people can enjoy and exploit the fisheries resource sustainably, as this is the basis of all recreational angling. So clearly when a person puts a net across the river they are breaking the law but so too is the angler who does not tag a salmon or breaches the coarse fish bye laws.

It is important that the economic benefits generated by angling are closely linked with the negative economic effects of illegal fishing and this is done at the local community level. In this regard IFI are currently commissioning economic surveys to actually quantify the loss to local communities from illegal fishing. Thus when a person comes around to the local pub or goes door to door selling illegally caught cheap salmon, coarse fish or trout, it is not just €10 or €20 spent on fish, which typically provide the seller with money for a few drinks, but anything up to €1,000 which is lost from the local economy and this translates directly into jobs lost or curtailed. Why does the local restaurant only do one sitting on a Saturday night? Why does the local B&B owner have a shortened season? Why is the tackle shop not doing as well as previous years? How likely is it that a tourist will return to an area to fish if he or she finds a net across the river or witnesses illegal fishing activity or flagrant abuse of the laws? IFI have a large number of highly professional and trained fisheries officers who are protecting our rivers, lakes and coastline however they rely on information to target illegal fishing hotspots. This is where you come in. IFI operate a manned 24 hour hotline (1890 34 74 24) to report all illegal fishing issues, be it reporting an illegal net, an angler in breach of the law, a person or commercial establishment offering illegally caught fish for sale or to report any other fisheries offences, this hotline is how the public help eliminate illegal fishing from their communities.

Since its establishment in December 2010 it has proved remarkably successful and has led to a number of prosecutions, and it is IFI’s intention to continuing developing the hotline and working with local communities to overcome illegal fishing.

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Russian Leather from a Watery Grave

By Anthony Toole

THE link between an eighteenth century shipwreck off the south-west coast of England and a tiny, recon- doit workshop in the north-east of the country would seem to be very tenta- tive indeed. That this link has to do with Russia leather stretches the credulity to its limits. Yet the story holds together, for it is as remarkable as it is unlikely. Austin Winstanley’s workshop is not easy to find. It is one of a number that hide away in a small courtyard off the main shopping street in Hex- ham, Northumberland. Even as one stands within the courtyard, the workshop does not advertise itself, and its constricted space and some- what cluttered interior conceal the fact that its owner is a designer and manufacturer of extremely high quality leather goods.

“As a teenager,” he says, “I made a leather bag for my sister’s birthday. That was followed, over the years, by various pieces made as a hobby.” After attempts at careers as a cow- man and an engineer, and even a period in teacher training, he made a sitar case for a musician friend, then a guitar case, and the seeds of a life’s work were sown. During the early 1970s, Austin Winstanley operated from a work- shop in Birmingham, and later in Darlington, before finally settling into his present premises more than twenty years ago. In that time, he has made cases for a variety of musical instruments, attaché cases, handbags and overnight bags. These are nearly all made to his own designs.

“One customer for whom I made a case recently asked me to make him another. He had used the original case virtually every day for fifteen years, and it was still in good condition.” A typical attaché case requires some forty hours’ work, about a fifth of which included immersion for a week in birch oil, which penetrated fully into the leather. Marco Polo mentioned using this oil in the thirteenth century, and during the next half millennium, it came to be regarded as the finest leather in the world, and was used extensively for shoes and for binding books. The Russian Revolution brought its pro- duction to an end, so that the leather preserved for two centuries beneath the mud of Plymouth Sound in now virtually the sole remaining source.

“I generally buy a single hide at a time,” says Austin. “I average four or five in a year, depending on commis- sions. In addition to larger objects, I also make items such as jewellery boxes, from smaller off-cuts from a hide.” Some of Austin’s commissions are unusual, and cause him to draw on reserves of ingenuity.

“One particularly tricky job,” he confides, “was a small watch case with a sliding door, which required an intricate opening mechanism.” Others reveal often sad and poignant histories.

“I was also asked to make a carrying case for a clock that had been buried by a Jewish family for the duration of World War II. Most of the family died in Auschwitz, and the heirloom had been retrieved by the few survivors.”

“With a variety of leathers, he has made bell muffles for Hexham Abbey, bellows for Northumbrian pipes, upholstery for the seats of a recon- structed 1940s airplane and a toolbox for a 1904 Progress Voiturette motor car. He has supplied Beamish Open Air Museum with steam engine pipe covers, blacksmith’s aprons and belts for machinery.”

“One of my most recent commis- sions was for an assassin’s case for actor Bill Nighy, in the 2010 comedy thriller film, ‘Wild Target’.” Sadly, supplies of Russia leather are coming to an end, though there are stocks for the time being, suffi- cient to see Austin Winstanley and Robin Snelsom through to retirement. Ian Skelton, the driver who has been largely responsible for salvaging the leather from the Frau Metta Catharina has now retired, with no forthcoming successor. This means that the site is likely to silt up very quickly, leaving the remaining hides to sink back into their muddy grave. This will undoubtedly add scarcity value to the leather creations of Austin Winstanley and Robin Snelsom. Indeed, G. J. Cleverely advertises some of his Russia leather goods as ‘limited edition’. This should see them appreciate consider- ably in value over the coming years.

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Planning & Environmental Law in Ireland

Reviewed by Matt Murphy

A MOST important guide to planning and the environment in Ireland has recently been published. The author is Dublin solicitor, John Gore-Grimes, who enjoys extensive knowledge and experience of the topic, as a solicitor over many decades. His main audience may be the legal and planning professionals, however anyone with an interest or involvement in planning and the environment should consult it. Mr. Justice Ronan Keane, the former Chief Justice, in his foreword states “It reflects the extremely complex legal structures which now govern Irish planning and which demand treatment on this encyclopaedic scale.” He further states “One cannot help being depressed by the message which emerges from this book, that, during the years of recent prosperity, the huge arsenal of planning measures spectacularly failed to ensure that planning decisions involving economic renewal by harmonising development permission and directing it towards areas already targeted by the National Spatial Strategy (NSS) for development and for investment in infrastructure. The concern must be as to whether or not the NSS has been sufficiently thought out and advanced to give best advantage to the “core strategy” principle. The legal implications for the development plans of local authorities lays out what the objectives must include under the Planning and Development (Amendment) Act (PDA) 2010. They are eighteen in number, which include surface and groundwater, habitat, infrastructure, preservation, improvement and extension of amenities and recreational amenities. The “core strategy” of the Act requires planning authorities to provide evidenced-based information statements to demonstrate how both the development plan and the housing strategy are consistent with Regional Planning Guidelines and with the National Spatial Strategy. The Department of the Environment, Heritage and Local Government’s Planning Guidelines (No. 15), dealing with development plans, are discussed in detail and a number of important legal cases are summarised. Other issues include contents and making of development plans, taking in Planning and Development Act 2000. In chapter one there are 327 subsections which show the detail of the legal implications of PDA 2000 and PDA 2010.

Chapter Four. The decision of a planning authority either to grant permission or without conditions or to refuse permission, or the right to appeal to An Bord Pleanala, are addressed. The issues include: the role of the Board to hear appeals, limits for lodging an appeal, time limits, Minister’s entitlement to vary the time limit, submissions or observations, oral hearings, reports and documents of the Board.

In Chapter Six, there is strong criticism of the lack of progress made in terms of social and affordable housing and of the social integration principles involved. The suggestion from Sister Stanislaus Kennedy is still applicable and that paragraph is undoubtedly controversial: “It is shocking to see the level of shortfall in the delivery of social housing during the boom years. This is largely a direct result of a conscious decision by successive governments to, in effect, cut back on provisions of social housing while the level of need was rising year on year.” There is another controversial statement in paragraph 6.05, which suggests that the market does a poor job in regulating land prices. This is backed up in the preface with the following sentence: “All in all there is some recognition that land is becoming too scarce and too valuable to allow it’s worth to be recognised that land is becoming too scarce and too valuable to allow it’s worth to be accessed by the wild and irresponsible forces of a merry-go-round market economy. If we are to move towards a just and integrated society in Ireland price control of land may become an absolute necessity for no matter how repugnant such a concept is to many of our citizens.”

Chapter 10 discusses the statutory ground rules for environmental impact assessment (EIA) and deals with environmental impact statements (EIS). EIA is defined as a process of anticipating the effects of the environment caused by development. This is an assessment which is required in certain public and private projects, and the process has been incorporated into Irish Law. Chapter 11. The PDA Act 2006 provides a special planning application procedure for strategic infrastructural development whereby the planning authority is bypassed and the planning application is made directly to An Bord Pleanala. The author addresses development proposals by a local authority, state authorities, energy, transport, environmental and health infrastructure. There are nine categories of energy infrastructure, 4 categories of transport, 11 of environment and one of health. The requirements for the applicants, according to the various sections of the PDA 2006 Act, are explained and include submissions and observations, applications, the Boards decision and time limits.

Chapter 12. The author addresses the warranty which a house seller must give to say that all planning and environmental matters are 100% in order. In his view, the author believes that very few would have been advised of the obligations which this warranty imposes. However to date it has not had serious consequences but these consequences are around the corner and waiting to happen. Further he states that there is an absolute necessity for a planning amnesty after 15 years (for example) for properties without planning permission, after which time permission must be assumed. It is, he states, impossible to examine the planning history of development over the past 47 years and to give it a completely clean bill of health. That is what we are asked to do under the present legislation and as time passes that situation gets worse and worse.

The thoroughness of the book is shown in the various tables listed, and which are referred to, summarised and discussed in the over 2950 subsections.

• Court cases – over 400 listed.
• Statutes in over 160 acts – from the Planning and Development (Amendment) Act 2010 to the Dublin Corporation Act 1890.
• Statutory Instruments – over 56 Planning and Development Regulations.

• European Legislation – Council Directives.
• Treaties and Conventions – EC Treaty, European Convention on Human Rights; Transboundary Convenant, UN ECE Espoo Convention on EIA.
• Constitutions – Constitution of Ireland.

This book is essential reference for planners and lawyers on planning and the environment. John Gore-Grimes has the rarest of gifts; he has succeeded in bringing to the reader many complex issues in a very readable form. Though largely a reference book and quite a hefty tome of 1153 pages, lay people, outside of the professionals, will find much to help and guide them on issues such as house purchasing or selling, how to challenge planning decisions, the workings of An Bord Pleanala and development plans for a local authority.


Issues addressed in the book

Chapter 1: Plans, Policies, Guidelines and Directives
Chapter 2: Development and Exempted Development
Chapter 3: Control of Development
Chapter 4: Challenging Planning Decisions
Chapter 5: Enforcement and Planning Injunctions
Chapter 6: House Supply – Social and Affordable Housing
Chapter 7: Compensation and Compulsory Acquisition
Chapter 8: Additional Planning Controls on Land and on Buildings
Chapter 9: Subsidiary Consent and Appropriate Assessment
Chapter 10: The EIA Directive
Chapter 11: Structural Infrastructure Development
Chapter 12: Planning and Environmental Law for Conveyancers
Supporting Conservation in the Amazon

By William Milliken

In Ireland, when an area is declared protected, one can reasonably assume that its future is secure. This is not the case in so many other parts of the world. For the last few years our team has been working with Brazilian partners to help strengthen the scientific basis for conservation in northern Mato Grosso. This area, on the southern fringes of the Amazon basin, lies in the ‘arc of deforestation’ where cattle ranching, soya farming and logging are pushing northwards into the forest. The scale of destruction in the region over the last four decades has been staggering, and whilst in recent years the Brazilian authorities have made improvements in the control of Amazon deforestation, Mato Grosso remains a major problem.

In the Cristalino State Park, for example – a relatively small protected area that’s been the focus of much of our work in the region – substantial areas of forest have been cleared since the Park’s establishment in 2001. The authorities responsible for enforcing its protection are under-resourced, and the forces driving its destruction too powerful to combat them effectively. A heady cocktail of political corruption, greed and desperation.

Kew has been helping support conservation in the area by providing some of the information necessary for management planning. The essential first step – in a region previously unstudied scientifically – is to find out what’s there: mapping and cataloguing the vegetation and identifying priorities for conservation. Analysis of satellite imagery gives a useful overview and helps to identify targets, but it’s only by getting onto the ground that one can generate meaningful, reliable information.

In practice, this work differs little from what botanical explorers have been doing in the Amazon for the last two centuries: travelling up rivers by canoe, dodging rapids and rainstorms, establishing forest camps, and hacking our way through dense vegetation with plant presses and bundles of newspaper on our backs.

Technology, of course, has moved on since Richard Spruce was paddling his way up the Rio Negro. With Global Positioning Systems we now know where we are, our specimens are collected, and our observations are made, to within a few metres on the Earth’s surface. Aluminium canoes and outboard motors have made access easier and quicker, digital cameras and laptops have allowed virtually instantaneous data management, and satellite telephones offer the possibility of help in case of emergency. Nonetheless there remains little one can do about bees, mosquitoes and galloping foot-rot except grin and bear them.

Our expedition teams, the greater part Brazilians, include scientists, students, park managers and local people with key knowledge and skills. In the course of these surveys we’ve found ourselves in extraordinarily beautiful, cathedral-like forests, hellish tangles of vines and shrubs where it can take half an hour to move fifty metres, spectacular outcrops of sun-baked granite coloured in colourful orchids, and isolated patches of savanna that seem to have been frozen in time since the last Ice Age.

Coming round the bend of a river at dawn, the morning mist and the scents of night-flowering plants lying heavy on the water, unknown revelations at every turn in its twisting course, never loses its excitement. Sitting on a sandbank as the sun sets over the river, fresh piranha grilling on the fire and the last pairs of scarlet macaws making their noisy way back to their roosting trees, is an unforgettable privilege.

Our plant collections and studies, including the discovery of several species new to science, are helping to fill gaps in our knowledge of the Amazon. Maps and reports have helped to plan management strategies for new and existing protected areas. But in a region such as this, conservation will only be effective in the long term if it fits with the needs of the local people. Environmental education clearly has a role to play, and we’ve been working with a local non-governmental organisation to develop programmes that help to foster a sense of pride in, and responsibility for, the region’s biodiversity, particularly among children.

Addressing economic reality, however, is equally critical. The Brazilian land settlement agency, INCRA, has brought large numbers of immigrants to the region in recent years – often from poor parts of the arid northeast of the country – allocating them small plots of forest on poor soils on which to make a living. With little understanding of how to manage forest sustainably, these settlers soon find themselves in a wasteland of unproductive pasture, their water courses drying up and few options left.

Addressing economic reality, however, is equally critical. The Brazilian land settlement agency, INCRA, has brought large numbers of immigrants to the region in recent years – often from poor parts of the arid northeast of the country – allocating them small plots of forest on poor soils on which to make a living. With little understanding of how to manage forest sustainably, these settlers soon find themselves in a wasteland of unproductive pasture, their water courses drying up and few options left.

The challenge will be to ensure that any such payments make their way to the families scratching out a meagre existence in the forest. If they do, then the incentive for preservation could outweigh that for destruction. If they don’t, they might well find themselves sharpening their chainsaws again.

William Milliken, a former volunteer at Sherkin Island Marine Station, is Head of Tropical American Botany at the Royal Botanic Gardens, Kew, UK.

(See centre spread on pages 16 and 17.)
Supporting Conservation in the Amazon

Photography by William Milliken
(See article on page 14)
Rabbitfishes, Chimaeras & Ratfishes

(Holocephali: Chimaeriformes) in Irish Waters

By Declan T. Quigley

RABBITFISHES, Chimaeras and Ratfishes belong to a primitive sub-class of fishes (Holocephali) dating back to the Devonian Period (416-359 million years ago) which share many morphological characteristics with sharks, skates and rays (Subclass: Elasmobranchii) indicating a common albeit unknown ancestor. For example, in common with sharks, they have a cartilaginous skeleton, and reproduce using internal fertilization, the males bearing clasper organs (males of some species, e.g. Chimaera monstrosa, also have an additional frontal tentacle on the head that is used to grasp the posterior edge of the female’s pectoral fin during copulation). However unlike sharks, Holoccephalians have a single operculum covering the gill arches and their upper jaw is fused to the braincase (Holocephali = “whole heads”). The first dorsal fin, with its poisonous spine, is erectable, not fixed and the body lacks scales or denticles. Chimaeras have three pairs of hypermineralized tooth-plates in the upper jaw and a large pair of mandibular tooth-plates at the bottom (hence the name “Rabbitfish”). The anterior plates are blade-like, whereas the posterior plates are flattened for crushing hard-bodied benthic invertebrates on which they mostly feed (e.g molluscs, crustaceans, echinoderms and anemones). The body generally tapers posteriorly to a pointed tail, hence the alternative common name “Ratfish”. In Greek mythology a Chimaera was an imaginary monster constructed of incongruous parts. Extant Holoccephalan species represent a small fraction of a previously successful and diverse group. Although only 43 living species (including 3 families) are currently known worldwide, several others remain to be described. The increasing commercial exploitation of deep-water fishes and scientific surveys of deep-sea biodiversity, aided by improved knowledge about the taxonomy of the group supported by recent DNA barcoding techniques, has facilitated the description of several new species. Indeed, since 1990, at least 17 new species have been described, including three from the NE Atlantic: Pale Rabbitfish (Hydrolagus pallidus), Lusitanian Chimaera (H. lusitanicus) and Opaline Chimaera (Chimaera opalescens). At least 9 species (including 2 families) are currently known to occur in the NE Atlantic, 8 of these from Irish waters (Table 1).

Although rabbitfishes are found in all oceans and are mostly deep-water species, inhabiting benthic regions from continental slopes down to abyssal depths (80-3000m), relatively little is known about their general biology and natural history. Young rabbitfishes often occupy deeper water than adults, the latter partaking in seasonal, inshore breeding migrations. Adults range in size from 60 to 200cm, with females often larger than males. Rabbitfishes are oviparous, laying only a few egg cases mainly during spring and summer which take 5-10 months to hatch, so the species are highly vulnerable to over-exploitation.

Considering their high vulnerability of over-exploitation, there is clearly a strong case for introducing robust management plans to specifically protect all Holoccephalan species in European waters.

By Declan T. Quigley, Dingle Oceanworld (Mara Beo Teo), The Wood, Dingle, Co Kerry. Mobile: 087-6458485 Email: declanquigley@eircom.net

Table 1. Global Landings of Holocephali by Country (FAO 2009)

<table>
<thead>
<tr>
<th>Country</th>
<th>Tonnage</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>New Zealand</td>
<td>6415</td>
<td>46.7</td>
</tr>
<tr>
<td>Argentina</td>
<td>2751</td>
<td>21.0</td>
</tr>
<tr>
<td>South Africa</td>
<td>625</td>
<td>4.6</td>
</tr>
<tr>
<td>Norway</td>
<td>244</td>
<td>1.8</td>
</tr>
<tr>
<td>Denmark</td>
<td>716</td>
<td>1.1</td>
</tr>
<tr>
<td>Iceland</td>
<td>57</td>
<td>0.4</td>
</tr>
<tr>
<td>Greenland</td>
<td>1</td>
<td>0.0</td>
</tr>
<tr>
<td>Totals</td>
<td>9051</td>
<td>100.0</td>
</tr>
</tbody>
</table>

Table 2. Global Landings of Holocephali by Species (FAO 2009)

<table>
<thead>
<tr>
<th>Common Name</th>
<th>Scientific Name</th>
<th>Tonnage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pale Rabbitfish</td>
<td>Hydrolagus pallidus</td>
<td></td>
</tr>
<tr>
<td>Lusitanian Chimaera</td>
<td>Chimaera lusitanicus</td>
<td></td>
</tr>
<tr>
<td>Opaline Chimaera</td>
<td>Chimaera opalescens</td>
<td></td>
</tr>
<tr>
<td>Ghost Elephant Shark</td>
<td>Callorhinus concolor</td>
<td></td>
</tr>
<tr>
<td>Black Ghost Shark</td>
<td>Hydrolagus daytoni</td>
<td></td>
</tr>
<tr>
<td>Cape Elephantfish</td>
<td>Callorhinus capensis</td>
<td></td>
</tr>
<tr>
<td>Rabbit Fish</td>
<td>Chimaera monstrosa</td>
<td></td>
</tr>
<tr>
<td>Chimaeras, etc.</td>
<td>Chimaeriformes</td>
<td></td>
</tr>
<tr>
<td>Totals</td>
<td></td>
<td>9051</td>
</tr>
</tbody>
</table>

Table 3. Global Landings of Holocephali by Species (FAO 2009)

<table>
<thead>
<tr>
<th>Common Name</th>
<th>Scientific Name</th>
<th>Tonnage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pipefish (Stomiidae)</td>
<td>Stomias sp.</td>
<td></td>
</tr>
<tr>
<td>Others (Blenniidae)</td>
<td>Blenniidae sp.</td>
<td></td>
</tr>
<tr>
<td>Other deep-water fish</td>
<td>Other species</td>
<td></td>
</tr>
<tr>
<td>Totals</td>
<td></td>
<td>9051</td>
</tr>
</tbody>
</table>
Sheep-eating plants

at the National Botanic Gardens, Glasnevin

By Matthew Jebb

If I told you that there is, in Ireland, a living plant that can catch, kill and eat a sheep you might well be sceptical – but none the less you would probably be more than curious to know what this ployy is in this claim. But let me assure you it is perfectly true, and if you come to Glasnevin, and better still download one of our free audio tours to bring with you, you can see and hear about it at first hand...

The sheep-eating plant is just one of 30 short stories featured in three new audio tours and a smartphone 'app' for the National Botanic Gardens. They include some of the gardens’ hidden treasures, its oldest plants, famous glasshouses, and one of the world’s great plant hunters, and come complete with a recording of ‘The Last Rose of Summer’. Some of the stories we tell in the guides are unashamedly provocative and bizarre – who on earth has heard of a tree with no leaves, a plant that grows inside out, and a plant that eats sheep? But a remarkable (but far from silent) revolution has taken place in the last few years, which means that the majority of the Irish population now possess their own audio players – ipods and iPhones are everywhere (or MP3 players and smartphones if you want to escape the hegemony of Apple Inc.). By last summer it was reckoned there were in excess of 500,000 smartphones and over 2.5 million MP3 players in the country.

There are three tours in the collection, each with 40 minutes of audio commentary. The Green tour explores the famous greenhouse and palm house, and is suitable for cold or wet days; the Yellow tour is an easy stroll around the gardens historic highlights; and the Red tour is an extended walk to the river, for wildlife, roses and even some philosophy. At each listening stop on the tour, there is a prominent label matching the tour colour. Each stop is only about 2 minutes or so of audio allowing the visitor a chance to hear the story and admire the plant or building. The stories were written and narrated by Matthew Jebb and Mary Mulvhill, as well as the garden’s orchid expert Brendan Sayers, and wildlife guide Glynn Anderson.

The tours were launched in April this year by Presidential hopeful Senator David Norris.

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In order to bring the tours to as many people as possible they were packaged in a number of ways. Firstly, and most simply, they can be downloaded as podcasts from one of the two websites or, if you have a smartphone, you can download the app, which includes extra images, directly to your phone. But Mary recognised that not everyone owns these new-fangled gadgets and was therefore anxious to ‘past-proof’ the tours also.

To achieve this we have combined a selection of 16 stories from the green, yellow and red tours on a delightful little souvenir card. David Norris described the souvenir cards as ‘cute as a button’ at the launch. And they are indeed enchanting little pieces of technology – they are essentially small audio players with the audio files hard-wired into them. They have sufficient battery power to give 4 or more tours, and are for sale at just €5 at the visitor centre, with a nicely designed box and map. For an extra €2 you can even buy a dual adapter, allowing you and a friend to hear the tour together. And when the batteries do die they can always be replaced – a great little souvenir for a visitor.

It is central to our mission to share the importance of plants with our visitors, both local and international, and I hope that this is just the start of many more interactive ways to highlight the value of plants to humanity, and remind everyone just how remarkable the plant world is.

Visitors can access the tours on www.ingeniousireland.ie & www.botanicgardens.ie/audio.

The app was designed by ZiggiApps and is now available for free download from the Android app store or iTunes – simply search for Botanic Gardens.

The National Botanic Gardens were established at Glasnevin in 1795 by the Royal Dublin Society, on the site of a Georgian estate and villa, the gardens have been run by the State since 1878. Since 2003 the Gardens have been managed and run by the Office of Public Works. They cover nearly 20 hectares, with over 17,000 different species and cultivars, including many rare and endangered specimens, along with thousands of dried and pressed plants in the ‘herbarium’.

Ingenious Ireland is a new company specialising in unusual audio tours and hidden heritage, its next project is a ‘blood and guts’ walking tour of Dublin’s medical history. Other tours include a look inside the Royal Irish Academy and its hidden history on Dawson Street; a geology walking tour of Dublin city; and the history, landscape and heritage of the Hill of Tara, all available to download at www.ingeniousireland.ie.

The term ‘family shop’ can bring up an image of a well-stocked supermarket with a rumbling trolley. When there are children onlookers peering from other aisles and the trolley filling up with all sorts of food that will end up in the bin within a few days. When there are children involved it can be more difficult as food waste and kids often go hand in hand. The Stop Food Waste Programme funded under the EPA National Waste Prevention Programme is advising that a little planning can go a long way to making the family shop a reduced waste, cost-saving and more enjoyable experience.

Children love helping with the shopping especially by throwing things into the trolley. It is worth spending 5 minutes before the shopping trip to let the children assist you in making your shopping list or let them make a short one of their own – they can then get a small trolley for themselves. You will save money and cut down on food waste this way.

Feel ‘em up – never shop hungry. When it comes to food our eyes are definitely bigger than our stomachs. Hitting the supermarket with a rumbling tummy is a sure way to build a mountain of nutrient deficient, sugary snacks that we don’t need. Shopping hungry means you and especially the kids are looking for a sugary quick fix, short-term energy boost or that sweet treat to resist and just leap into the trolley. You feel hungry when you shop will mean not picking up snacks you don’t need in the house.

Make a list – check it twice: Following a list is a sure way to stay on track. Have the children make up their own list and let them pick the items from the shelves. Choosing items and explaining how they fit in to the family meals will keep children interested and aware of the importance of a balanced diet in family cooking.

Bulk buying makes cents: Don’t buy expensive individual packs of children’s items, such as yogurts, when you can buy a large container and share them later. Small children are going to miss playtime by having to work through the mountain of nutrient deficient, sugary snacks that we don’t need. Each day in advance and stick to it. This will reduce the guess work at the supermarket and allows you to cook more than one meal from the ingredients you have. You can freeze some for another day, instead of the usual scenario of half a tray of mince, leaving the rest sit on the shelf until you find an opportunity to make another bolognese and then that normally ends up in the bin during a busy week as you never found the time. For a full range of recipes that will help you create a weekly meal plan see the website of Stop Food Waste supporter Donal Shehan, www.donalshelahan.com.

The Stop Food Waste Programme is funded under the EPA National Waste Prevention Programme (NWPP). Waste Prevention is the preferred waste management option in Ireland. By not generating waste, we can eliminate the need to handle, transport, treat and dispose of waste. We can also avoid having to pay for these services. In light of the significant issues arising from the disposal of food waste, and the realisation of the costs associated with this, the NWPP Prevention Plan 2009–2012 set out to promote food waste prevention and home composting.

For more information for parents on avoiding food waste, visit the ‘tips for parents’ section on www.stopfoodwaste.ie.

By Odile Le Bolloch
By Peadar McArdle

I RECEIVED my training in geology during the 1960s in the then relatively small Geology Department of University College Dublin, which provided a balanced and comprehensive foundation on which to build a professional career. It particularly emphasised the value of field work in evaluating geological problems and this was something that held a special appeal for me. The Head of Department, Professor James Brindley, was an acknowledged granite expert, having honed his skills on the nearby Leinster Granite, the largest in this part of Europe. So it will come as no surprise that my postgraduate research was based on a segment of the surrounding sedimentary and volcanic rocks in which it was emplaced.

Many geologists start their careers overseas and I was to be no exception. Funded by the UK Ministry of Overseas Development, I was assigned to the Geological Survey Department of the newly-independent Republic of Malawi. The country straddles the East African Rift System, a fundamental split in the Earth’s crust which displays a spectacular range of carbonates (unusual igneous rocks composed of carbonate). My work involved evaluating the mineral resource potential of the extensive Precambrian schists, gneisses, and their intrusions. Although its mineral resources are limited, my targets included uranium, nickel, copper, gemstones, industrial minerals and urban brickfields. I considered myself fortunate to experience field work under safari conditions that are rarely available nowadays.

Back in Ireland once more, I spent a couple of years at the Silvermines zinc-lead mine in the mid-seventies. One of a number extracting base metals from limestone-hosted deposits, it provided me with an unrivalled opportunity to understand their architecture and geological controls, as well as introducing me to the engineering skills involved in extracting and processing them.

Such mineral resources formed the basis for the first half of my career at the Geological Survey of Ireland (GSI). My role was to advise our parent Department on technical aspects of mineral exploration and mining, which brought me into contact with all dimension of the industry throughout the country. I remain deeply impressed by the skill and dedication of the spectrum of professionals and workers involved, not least by the resourceful and self-reliant coal miners of the 1970s and 1980s. These extracted coal of varied quality from narrow seams and often in difficult working conditions. The Avoca mines also took on a special significance for me and this was partly because of its nail-biting struggle for survival (it had 225 interested geologists on its payroll whenever new exploration drilling took place!). But it was also because of its fascinating geology which evolved along a chain of volcanic rocks on an ancient ocean margin, all of 450 million years ago.

But new horizons beckoned to me when my appointment as Director of GSI in 1992. My purpose now was to lead a dedicated team of scientists, technical and administrative staff in producing suitable information products required by our diverse range of customers. These extended beyond mining to include regional planning, water supplies, environmental protection, heritage, tourism, education, construction and quarrying. The digital revolution meant we also had to develop new ways of providing access to our maps and databases. An important event was Government’s decision that GSI undertake the National Seabed Survey, a major initiative that demonstrated the power of geoscience to deliver value to the maritime sector - fisheries, engineering, environmental concerns, shipping and coastal zone management. The second phase of seabed mapping, the Infranor Programme, is currently underway and I am delighted that it is being jointly undertaken with our colleagues in the Marine Institute.

Cooperation with the Geological Survey of Northern Ireland has long been an important activity for GSI, starting with collaboration on completing the various cross-Border bedrock map sheets. This evolved to joint projects concerned with tourism, mineral exploration and offshore surveys, and has culminated in the recent Tellus Border Programme. This will, on a cooperative basis, complete important geophysical and geochemical surveys in the counties bordering Northern Ireland and the results will be important for mineral exploration, groundwater resources and regional planning.

These surveys are just one dimension of an expanding range of geoscience initiatives which GSI is undertaking, thanks to funding under the National Development Plan, and which are addressing issues such as landslide susceptibility, aggregates potential mapping, carbon-capture and-storage and the quality of our urban environment. In parallel, GSI has funded a range of high-priority research projects designed to underpin sustained research at universities in Ireland and Northern Ireland, and very interesting results are emerging already. I have been fortunate in my career to see an expansion of the range of applications where geoscience can make a valuable contribution, and to have worked with so many dedicated and gifted scientists in delivering those applications for the benefit of our country and communities.

PROF Peadar McArdle retired as Director of the Geological Survey of Ireland in November 2010.
As each year passes without clear signals to will be no chance of moderating the human threshold after which climatologists expect the most polluting fossil fuel – is set to go up by 65%.

Primary energy demand will increase (on present trends) by a third between 2010 and 2035, it says. Fossil fuels (which enjoyed $409 billion in subsidies in 2010) will still account for two-thirds. The International Energy Agency (IEA), the 2011 edition of its World Energy Outlook.

CLIMATE CHANGE has gone off the boil, stopped being sexy, disappeared from the headlines and the TV screens. It’s hard to realise that just a couple of years ago the world was agog to learn the latest science, to see the most up-to-date footage from the Arctic and to grill government ministers about how they were planning to confront the threat. Threat? Climate change is soooooo yesterday. Get real.

Except that it isn’t yesterday’s story at all. It’s today’s, and even more tomorrow’s (though what we do and don’t today will decide the shape of tomorrow for our children and grandchildren). If reality is what you want, look at the November bombshell from the normally staid and not at all sensational International Energy Agency (IEA), the 2011 edition of its World Energy Outlook.

Primary energy demand will increase (on present trends) by a third between 2010 and 2035, it says. Fossil fuels (which enjoyed $409 billion in subsidies in 2010) will still account for 75% of consumption, a drop of 6% from today. But oil demand rises from 87 million barrels a day to 99 million, and the use of coal – the most polluting fossil fuel – is set to go up by 65%.

And here’s the real humdinger. The world, according to the IEA, has until 2020 to act to keep atmospheric carbon dioxide emissions rising beyond 450 parts per million (ppm), the threshold after which climatologists expect the changes will become unpredictable and there will be no chance of moderating the human influence on the climate.

Faith Birol, the IEA’s chief economist, said: “Each year passes without clear signals to drive investment in clean energy, the ‘lock-in’ of high-carbon infrastructure is making it harder and more expensive to meet our energy security and climate goals. “The door is closing. I am very worried – if we don’t change direction now on how we use energy, we will end up beyond what scientists tell us is the minimum [for safety]. The door will be closed forever.”

Dr Werbos’ can-do approach (he even thinks new batteries will make electrically-propelled aircraft feasible) with the IEA’s warning of where we shall be within a decade if we go on in the same old way.

So why are we all set to go on exactly as we are? What is stopping us from starting on the changes we know we have to make?

An easy target for blame is the big battalions of climate sceptics, or deniers, or whatever word you use for them (I don’t like calling them sceptics, because it seems to me that it is scientists and journalists who are professional sceptics, and who wear the label happily as it describes the only way they know how to work. Those who question the climatologists don’t like being called deniers, because they say it’s a name that puts them on a par with Holocaust deniers.)

I’m not at all sure anyway that those who challenge the Intergovernmental Panel on Climate Change (the IPCC) and the many climate scientists they may say the threat is real can claim much credit (or blame) for the lethal inertia of so many of the rest of us.

A recent study by the Reuters Institute for the Study of Journalism at the University of Oxford looked at climate doubt (to try to use a neutral term for the deniers/sceptics), and among its findings was one that struck me. Doubt about the mainstream (IPCC) case is much stronger in the Anglo-Saxon countries of the UK and the US than in the other four countries studied – France, China, India and Brazil. So I think the doubters may have local rather than universal factors to thank for their apparent success in persuading electorates that far greater uncertainty exists than the facts bear out.

Neither Faith Birol nor Paul Werbos is a headline-seeker. Neither of them says things for effect: apart from anything else, they would both have far too much to lose to risk doing that. If they say things are as stark as they are, and if they also say really radical change is within our grasp, we should listen to them. And then act.

Check out Sherkin Island Marine Station's publications at:

www.sherkinmarine.ie

You can now pay for books using Paypal.
By Geraldine Reid

I HAVE been working on Lake Baikal for the past 14 years, studying and documenting the benthic diatom diversity of the lake.

Lake Baikal is a special place; in fact it is a truly amazing place full of spectacular scenery and a vast array of wildlife which you will only be able to find at Baikal. It has around 1,900 species living there. The description of the lake always makes impressive reading as it is the deepest lake in the world at 1,642 m (5,387 ft), it has an area of 31,500 km² and is 636

of the world’s unfrozen surface fresh water. It contains the largest volume of freshwater in the world, 23,615 km³.

It is situated in southeast Siberia and was formed within a series of rift zones some 30 million years ago. It is unique amongst deep lakes in that the water is fully oxygenated owing to regular replacement of the deep water every spring and autumn which allows it to be well oxygenated.

As part of this study I became interested in a couple of very unusual looking species of diatom called, at the time, Eunotia clevei and Eunotia hispida. Investigating these species further (together with my colleague David Williams at the Natural History Museum London where I was based) we noticed that these species were quite unique. Only one species was recorded, two thirds of which were endemic – only being found in the Lake.

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Between Rocks and Hard Places: Discovering Ireland’s Natural Heritage

By Paul Lyle

Geological Survey of Northern Ireland
T/SO Ireland
www.tsoshop.co.uk
ISBN: 978-0-337-09587-0
Price: €9.99/2010

At the heart of this beautifully illu-
strated book is the spectacular landscape of Northern Ire-
land. Not only does Dr. Lyle show the regional pic-
ture – Ulster, with digressions into Co.
Sligo and Leitrim – but also he takes the reader on an exciting journey into Earth’s structures and processes. At University, one of my geology lectures (himself with links to Northern Ireland) quoted why so few of my fellow botanists studied geol-
ogy. So I welcome this book, with its unashamedly popular presentation of ge-
yology, demonstrating why this legacy of science is so important to us all.

Northern Ireland is rich with great diversity of rocks and scenery. Some of the landscapes are spectacular and famous worldwide; the fantastic regional basin columnar of the giant’s Causeway, the noble granite Mourne Mountains, and the Glens and Coast of Antrim, where dark basalt overlies baked chalk, a far cry from the chalk, Devonian of South Eng-
land. The author tells how the Donegal Highlands and Spermian Mountains are an-
cient fragments, in places up to 1 billion mil-

Another feature of the book is the extensive coverage of the river system. The reader will be introduced to the influence of the river systems on the landscape and on the people who have lived along them. The book includes maps and diagrams that illustrate how the river systems have shaped the landscape and how they have been used for different purposes throughout history.

The book also discusses the effect of human activity on the river systems. It describes how the rivers have been used for transportation, hydroelectric power, and irrigation, and how they have been changed or altered by human activity. The author also highlights the importance of preserving the natural river systems, and the threats they face from pollution and development.

Overall, this book provides a comprehensive overview of the river systems of Northern Ireland, and is an interesting and informative read for anyone interested in the natural and cultural history of the region.
New species of Fucus honours Prof. Michael Guiry

A NEW species of Fucus, that most common of intertidal brown algae in the North Atlantic and North Pacific, has been named by Portuguese researchers from the University of the Algarve, Fucus guiryi. “... in honour of Emeritus Prof. Michael Guiry, Ryan Institute, NUI Galway (see Sherkin Comment No 46), in recognition of his great contribution to phycology by creating AlgaeBase.” (see Sherkin Comment No 51). This most surprising of new species is a common intertidal species ranging from Scotland in the north to the Canary Islands in the south, it is zone forming over much of its range, and it has long being confused with Fucus spiralis, Spiralled Wrack.

This is not the first time that Michael Guiry had been recognised in this way: Guiryella guiryi is a red alga described by two eminent Australian botanists from the Abrolhos Islands, and now known from from Western Australia and South Australia; Cordylecladia guiryi was described by scientists from the Universita di Messina from the subtidal of Sicily; and Gloiocladia guiryi is a rare subtidal species in Pacific Russia, described by a botanist from the prestigious Russian Academy of Sciences at Petropavlov – Kamchatki.

Last year, Michael was given the Phycological Society of America’s annual Award of Excellence, was made an Honorary Life Member of the British Phycological Society and an Honorary Lifetime Member of the International Phycological Society. This level of international recognition is a reflection of the incredible international impact of the on-line database “AlgaeBase”, of which we wrote in the last issue, and the value placed on it by the international community.

Matt Murphy

Ideal Gifts

A Beginner’s Guide to Ireland’s Wild Flowers

Have you ever wanted to put a name to the wild flowers you see about you every day, or while on a walk, or on holiday? With the help of this pocket-sized guide, you will be able to do just that. Beginners of all ages will be introduced to the many common wild flowers found around Ireland.

Published by Sherkin Island Marine Station


A Beginner’s Guide to Ireland’s Seashore

A pocket-sized guide, suitable for beginners of all ages. With the help of this book you will be able to explore the wonders of marine life on the shores around Ireland.

Published by Sherkin Island Marine Station


The Natural History of Sherkin Island, West Cork – An Introduction

Perhaps you haven’t been to Sherkin Island before, or maybe you’re coming back again, as many people do. This book will introduce you to some of the wonderful wildlife and flowers on this beautiful and peaceful island, which lies just 10 minutes by ferry across the busy little harbour of Baltimore, West Cork.

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Arklow Coastcare’s Annual Exhibition of Photographs

ARKLOW Coastcare hold an annual photographic competition and exhibition to encourage people to explore the wonder and beauty of their local coastline. The competition is open to everyone and each year the organisation is amazed by the imagination and inspiration shown in the pictures.

This year’s exhibition of photographs was opened in August, in conjunction with National Heritage Week. Photographer Brian McIlvenny, who judged the competition, found it difficult to choose winners and was forced to split first prize between ‘Snow Swimming Today’ a stunning study of the beach by Paul Burke under last year’s snow and ‘Prowling Around’ a dramatic close up shot of a sea gull in flight by Ian McCann. Arklow Coastcare is grateful to everyone who took the time to enter and is especially grateful to the friendly people at the Phone Booth in Arklow who donated the very appropriate prizes – camera phones.

Check out Arklow Coastcare’s new website for more pictures at www.arklowcoastcare.com.
Barnacles – Upside Down Crabs?

Barnacles, like many insects, belong to that vast group of animals, the phylum Arthropoda. Within this, they are members of the same sub-phylum as crabs and lobsters. Indeed, a barnacle may be considered to be a crab that, instead of using its legs to run around and hunt for things to eat, has chosen the easier option of lying on its back and waving its legs in the water to trap passing morsels of food. To protect themselves, barnacles have developed external shells made of six calcareous plates and two moveable plates, which protect the animal inside when it is not feeding.

Barnacles – the Curse of Pirates Everywhere!

As well as bad food, scurvy and the risk of sudden death in bloodthirsty battles, pirates everywhere had to deal with the threat of barnacles. Like seaweed, tube worms and other encrusting marine life, barnacles cling to the bottoms of ships and slow them down, making them easier for the authorities to catch. To keep barnacles at bay, pirates would regularly run their ships aground and scrape the bottoms clean. Richer navies would go to more elaborate measures, like sheathing the bottoms of their ships in copper, which is toxic to marine life.

Barnacles – A Subject of Study for Charles Darwin

The first person to fully study and classify barnacles was the world-famous biologist Charles Darwin, who published a series of scientific papers on them in 1851 and 1854, before he published his groundbreaking book – ‘On the Origin of Species’. Some historians have suggested that Darwin studied barnacles as a way of putting off work on his great study of evolution. But it has been shown more recently that he studied barnacles at the recommendation of his friend Joseph Dalton Hooker so that he could understand at least one species of animal in depth. This was in order to test his theories about natural selection and the natural world in general.

Barnacles – A Medical Breakthrough?

A series of experiments by the Zoology Departmental NUI Galway are looking at the natural super glues used by barnacles to attach themselves to rocks or floating objects. If these experiments are successful, then we’ll know a lot more about creating a natural superglue that can be used to mend bones in human surgery or, on the other hand, how to create ways of preventing barnacles clinging to ships and lowering their fuel efficiency.
MAKE A BIRD HIDE
in the Classroom or at Home

Why a hide is useful...

It may help your work to watch birds from your home or the classroom, but the birds can be frightened by people moving around. The challenge is to make a place for watching that hides you from the birds. That is why it is called a ‘hide’.

Designing a hide

Before you begin, think about the area outside your house or the classroom that you will be watching.
- Do birds already visit the place you will be watching? If not, can you attract them in? You may need to do this first.
- Are there trees, bushes or other safe perches nearby? Will birds be disturbed by other activities around the school?
- Will it be possible to provide a bird table, feeder or bird bath?

A place for people

Next, think about the space inside the house or the classroom. To work well your hide must:
- Let you see the birds without them seeing you.
- Have room for more than one person.
- Have space for people to write down what they see.
- Include a place to pin up notes or bird pictures. It may need to be screened from the rest of the house or classroom, to stop other activities disturbing the birds.

Planning and making the hide

Decide with the help of your parents or teachers:
- Which part of the house or classroom can be used as a hide.
- How large is the hide to be.
- How to screen off part of the house or classroom (if necessary).
- The best way of screening the window.
- What material to use for screening.
- How much space is needed.
- The best place to pin up your observations and art work.

Evaluating your work

- Did you have enough space and materials to make the hide?
- Was there enough room?
- Has the hide made it more difficult to use the rest of the house or classroom?

The above information is from “Working with Birds around your School” on the BirdWatch Ireland website. For more tips and ideas, visit the Kids’ Zone at www.birdwatchireland.ie.

Using the Hide

Trial run
Try out the hide. Watch for about fifteen minutes.
- Which birds come to the area you are watching?

Here are some things to try and find out by using the hide:
- Do birds come any closer to the classroom than they did before you made the hide?
- Do birds stay longer?
- Are birds close enough for you to see their bills clearly?
- Which birds come most often?

Other observations you could make
- Does the time of day affect the birds that come to the place you watch?
- Is there a link between this and what people are doing around school?

Evaluating the hide
- Were you hidden from the birds?
- Did you see birds either more closely or for a longer time?
- Will your observations help you in science or other classes?
- Have you been able to pin up some of your work?

Learn about birds with BirdWatch Ireland

Feeding Wild Birds Leaflet
Download this leaflet from the Learn about Birds section on BirdWatch Ireland’s website at www.birdwatchireland.ie

Learn how to identify the birds in your garden with our Free Garden Bird Charts. Send a SAE to: BirdWatch Ireland, P.O. Box 12, Greystones, Co. Wicklow.

BirdWatch Ireland has over 10,000 members and has branches throughout the country which organise events and outings in your area. Why not get your school to join? Write to us or visit our website for details: www.birdwatchireland.ie

BirdWatch Ireland has two educational web sites, catering for learning about birds in schools.

Visit the Working with Birds web site to learn about watching and feeding birds. Simply go to www.birdwatchireland.ie and go to the ‘learn about birds’ section.

Tel: 01-2819878  Fax: 01-2819763
Email: info@birdwatchireland.ie
Website: www.birdwatchireland.ie

An ideal gift!

Discover the magic of birds with your DVD Guide to Common & Garden Birds – FREE when you join BirdWatch Ireland!

New members will receive the new 50-minute DVD training 100 different bird species in your Garden.

BirdWatch Ireland is a registered charity and a non-governmental organisation in Ireland with over 10,000 members and supporters. A non-profit organisation, over 90% of its income is from membership and a donation. A 5% tax rebate on your annual membership fee is available from your employer.

Join now
- by post (with form below)
- by telephone: simply call 01-2819 9878
- online at www.birdwatchireland.ie

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Freddy the Fish is finding it hard to swim through the debris on the shore, to reach the rockpool at the edge of the beach. Can you follow the instructions to bring him safely to the pool, where he can find shelter from the crashing waves? Help him to collect food, squeeze through rocks, avoid rubbish and meet other creatures as he goes along the way.

Column 1, row B&C = bits of rope are thrown overboard and are eaten by marine animals. Colour the squares orange.

Column 2–4, Row C = a tree falls off a cliff and breaks up in the sea. Colour the squares brown.

Column 3–5, Row A = plastic bottles and plastic bags are left on the beach and mix into the food chain. Colour the squares grey.

Column 2–4, Row E = a fish box and fishing net are washed overboard in a storm. Colour the squares green.

Column 5, Row E–F = a buoy lifts from its mooring. Colour the squares pink.

When you have coloured in all the obstacles, draw a path to the rockpool.

Who could live in a rockpool?

Colour the blue background of all the creatures that might be found in a rockpool. Colour the rest in lovely bright colours.

Anemone

Shrimp

Shark

Winkle

Barnacle

Limpet

Squid

Answer: The shark and squid are too big to live in a rockpool.

(Over, Down, Direction): BUOY (2,4,S); CUTTLEFISH BONE (14,9,W); FISH BOX (7,2,W); FLOTSAM (8,9,NW); GLASS BOTTLE (2,12,E); JELLYFISH (13,1,SW); JETSAM (6,6,NE); LOG (12,3,NW); MERMAID’S PURSE (15,13,N); NET (12,15,N); PLASTIC BAG (14,3,S); PLASTIC BOTTLE (2,14,NE); ROPE (4,8,SW); SEAWEED (1,10,N); SHELLS (4,13,E); TIN CAN (8,1,SE); TWIG (6,3,W).
A Selection of Winning Entries

Sherkin Island Marine Station’s Environmental Competition for Primary School Children in Munster 2011

Sponsors: Bord Iascaigh Mhara; City Print; Cork City Council; Cork County Council; Dept. of the Environment, Heritage & Local Government; Evening Echo; Inland Fisheries Ireland; Nature’s Web (www.naturesweb.ie); Janssen Pharmaceutical Ltd; Pfizer Ireland Pharmaceuticals; Sherkin Comment.
WHAT an amazingly busy year it was for Gaisce – The President’s Award. It was President McAleese’s final year as President of Ireland and patron of Gaisce. Events ranged from a Gold Award ceremony, to the visit of HRH the Duke of Edinburgh, to the annual Defence Forces Adventure Training event, to FAI soccer Gaisce Awards, to Silver Award ceremonies to the ending of the three-year term of the Council of Gaisce. All of these events are captured here as a special montage of Gaisce’s incredible year. Look out for Gaisce’s new website over the coming weeks at www.gaisce.ie.

CAPTIONS (clockwise from top):

• President McAleese bidding farewell to Gaisce staff at their headquarters in Ratra House, Phoenix Park. L/R Barney Callaghan, Hugh MacConville, Majella Killeen, Marion Irwin-Gowran, Ann Moore, President McAleese, Margaret Murtagh, Stephen Peers, Michael Collins and John T. Murphy.

• Barney Callaghan, Chief Executive of Gaisce, Orla Hughes, Natasha Smyth and Claire Turner from Coláiste Bríde, Carnew Co Wicklow, having been presented with their Silver Awards by radio presenter Ray Darcy of Today FM.

• Patrick Clarke, Stephen Cull, Rachel Rooney, Lyndsey Rankin, Mary Kenny and Miriam O’Gorman having received their Gold Gaisce Awards at Dublin Castle.

• Gaisce Bronze Awardees from St. Ita’s Soccer Club Donabate at the AVIVA stadium with FAI officials and Gaisce staff.

• Gold Award and world Frisbee champion, Sandra Murphy from Enniscorthy, Co. Wexford.

• Collette Farrell from Rathmines assisting soldiers from the 2nd Field Artillery Regiment, McKee Barracks with a 25 gun salute.

• Gaisce participants under abseiling instruction at Dalkey Quarries overlooking Dublin Bay on the Defence Forces training event (why don’t you apply now to be selected for this incredible 4-day event next summer?).

• Gaisce Board: Dr Laurence Crowley, outgoing Chairman of Gaisce receiving a gift of thanks as the Council of Gaisce finishes its term of office at Ratra House. L/R Ann Dunne, Barney Callaghan, Niamh Clarke MacMahon, Pat Larkin, Brian Collinge, John McCormick, Gerry Castign, Laurence Crowley, Séan Rogers, Catherine Sweeney, Philip Jones, and John Hurley.

• HRH The Duke of Edinburgh, Prince Philip in conversation with Gaisce participants from St Dominic’s College Cabra at a reception in Farmleigh House.

• Danielle Boyle, Cork, receiving her Gold Gaisce Award from President McAleese in Dublin Castle.
The RNLI is the charity that saves lives at sea

Visit the RNLI website at www.rnli.co.uk to read amazing stories of courage around the Irish and UK coastlines. In Ireland, read about:

- Galway lifeboat rescues man from sinking boat.
- Baltimore RNLI in major rescue operation off the Cork coast after Fastnet yacht capsizes.
- Wicklow RNLI lifeboat launched to assist beam trawler involved in Irish Sea collision.
- One week, two calls out and a little bit of science for Sligo Bay lifeboat crew.
- Portrush RNLI rescue four from upturned dive boat.
- Crosshaven RNLI save dog from drowning.
- Three Calls in 18 hours for Crosshaven RNLI.
- And much more...!

There are over 230 RNLI lifeboat stations around Ireland and the UK. Find your nearest station by navigating the map on the website, and learn about each station and their most recent call-outs.

Baltimore Lifeboats on manoeuvres.

Nature’s Web

Download a free and exciting newsletter for children, featuring interesting and informative news on nature and the environment.

Produced by Sherkin Island Marine Station

Visit www.naturesweb.ie

CHEWING GUM
Discarded chewing gum is becoming an ever-increasing problem.
It is unpleasant and un-sightly. Not only is it difficult to remove, it's also very expensive.
Discarded gum can be dangerous for wild animals and pets. It gets caught in feathers and fur and when swallowed can lead to suffocation.

SO CHEW IT AND BIN IT

SHERKIN COMMENT 2011 Issue No 52

Visit www.naturesweb.ie
Download a free and exciting newsletter for children, featuring interesting and informative news on nature and the environment.
Produced by Sherkin Island Marine Station
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The Story of Litter

Enjoy your rest here, you are our guest.
- We ask our guests to be environmentally responsible people.
- Please enjoy this rest place and avoid littering.

How long does litter last?

Facts & Figures

While out enjoying our recreational areas, have you ever come across some litter and wondered how long it will be there if no one picks it up?
Litter and dumping are a serious concern that can be avoided if everyone learns about the problem and what can be done to eliminate it.

Cigarette butt
1-5 years

Disposing hard waste, broken glass, or other items will not disappear. In water, 95% of the litter is non-biodegradable. Concrete, iron, and steel last forever.

Leftovers 6 months or more.

Aluminium Can
200 years

An aluminium can left in the ditch could last long enough to be picked up by your great-great-grandchild. Concrete and steel are used in the same way.

Disposable Diaper
450 years

Need we say more...

Plastic bottle
450 years

May be around forever
Use reusable travel mugs.

Plastic shopping bag
2000 years

In recent studies, plastic bags left in the streets were accounted for 10% of the litter collected. Please take it with you and recycle.

BE RESPONSIBLE, BIN IT.
Litter is an offence under the Litter Act ranging from a €60 fine to imprisonment.
Sustaining the Past

By Mike Ludwig

WHILE giving a paper on the environmental consequences of the new Panama Canal Locks, I missed the East Coast's first significant earthquake in almost a century and the passage of Hurricane Tropical Storm Irene. Then, Matt Murphy and I spoke about what we know and how we know and use it. These varied threads led me to this depressing article. What do we know about sustaining our environment and how do we use it? I have been explaining environmental impacts associated with human activity for most of my career. Global Climate Change and its impacts are components of those discussions. Carbon dioxide and freshwater availability are changing my earth. Many species are leaving their traditional habitats and others are adapting to new conditions. And, I see that humans are not particularly interested unless they are experiencing the consequences of the changes first hand.

The earth's human population was assumed to be willing to sustain its environment and how do we use it? I have been explaining environmental impacts associated with human activity for most of my career. Global Climate Change and its impacts are components of those discussions. Carbon dioxide and freshwater availability are changing my earth. Many species are leaving their traditional habitats and others are adapting to new conditions. And, I see that humans are not particularly interested unless they are experiencing the consequences of the changes first hand.

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