

Highland journeys which provide some of world's best tourist experiences

Celebrating the bicentenary of one of Telford's signature projects and a scenic rail journey described as a symphony in three parts, writes **Edward Sweeney**



Scotland is a divided country: almost torn in two by a mighty geological fault, the Great Glen which runs diagonally through Fort William to Inverness. Exactly 200 years ago our greatest civil engineer Thomas Telford completed his signature project the Caledonian Canal, which threads its way along a 60-mile route with 29 locks linking the Glen's four lochs to provide a great tourist experience – whether or not a monster is spotted on Loch Ness.

A "levelling-up" project of its day, the canal's construction provided employment for over 3000 local people. The post-Napoleonic peace meant that the expected use by the Royal Navy did not materialise, and development of steam-powered iron-hulled ships soon put commercial traffic beyond its 15-foot draught. However, in the Great War components for the construction of mines were shipped this way en route from America to 'US Naval Base 18' at Inverness, and fishing boats used it to avoid possible enemy action on the longer route around the north of Scotland. Repaired in the decade to 2005 with renewal of all the lock-gates, the canal is today a Scheduled Ancient Monument in the care of Scottish Canals, who are planning a celebration of its bicentenary this autumn.

From the Great Glen westwards, the scenic road to Kyle of Lochalsh heads through Shiel Bridge at the head of Loch Duich, from where an old military road ascends the mighty Mam Ratigan Pass. This is Jacobite country, and where it reaches the coast at Glenelg the ruins of Bernera Barracks recall the suppression after the 1715 Rising when General Wade and Major Caulfeild began the road-building which ironically would speed Bonnie Prince Charlie's advance 30 years later.

Today Glenelg is a peaceful jumping-off point for the world's last hand-operated turntable ferry, a design enabling vehicles to load and unload at any state of the tide. This is the MV Glenachulish,

operated by the Skye Ferry Community Interest Company, which between April and October enables cars, half-a-dozen at a time, to cross the narrow tidal race to Skye at Kylerhea. Lovingly restored by her present owners, the vessel was built at Troon in 1969 originally for use at Ballachulish, where the ferry was replaced by a bridge in 1975, and after stints at Kylesku (where another bridge would open in 1984) and Cromarty came to Glenelg in 1982.

The crossing at Glenelg neatly compliments two other means of crossing from the mainland to Skye: the ferry from Mallaig, terminus of the West Highland railway, to Armadale and the Skye Bridge which opened in 1997, replacing another ferry which linked Kyle of Lochalsh with Kyleakin. Today, having heroically survived two closure attempts in the aftermath of the Beeching Report, the Dingwall and Skye Railway brings travellers into Kyle of Lochalsh on the 82-mile journey from Inverness. This is a journey which was likened by travel writer Alexander Frater to a symphony in three parts; pastoral through the fields of Easter Ross, mountain from the Raven Rock summit past lochs, peaks and forest to Strathcarron, and marine as it twists and turns along the shore of Loch Carron to emerge in a dramatic conclusion at Kyle of Lochalsh facing across to Skye.

To travel the Kyle Line is to recall recent television history, for it was Michael Palin's journey here for the BBC in 1980 which first established its claim as one of the great scenic railways of the world. Thus was begun the modern genre of personalities narrating train journeys: and for the Monty Python star, it was to mark the starting-point for something completely different, a new career-direction that would take him many times across the world. **Professor Edward Sweeney, Head of Operations, Management & Logistics in the Edinburgh Business School at Heriot-Watt University**

Pressure increases



UK needs to act now to plan for a future where we cannot assume that wood will always be freely available, says **Stuart Goodall**

I have written before about the huge reliance the UK has on imported timber – after China, it is the second largest net importer of wood products in the world.

That reliance on imports is set to increase in the coming decades as domestic demand for timber grows further and domestic supply is forecast to fall.

In Scotland, in recent years, we've seen real action taken to increase planting and much of that new forest will produce the wood we use in our everyday lives and which will help us to achieve our climate change targets.

The awful events unfolding in the Ukraine have exposed Putin's imperial ambitions and ruthless determination to achieve them, even at the cost of human lives. In response, the West has imposed sanctions and provided humanitarian and military support to the people of Ukraine.

The conflict, and the expected long-term reset in the Russian/Western relationship that accompanies it, will have fundamental implications – political, social and economic. And those implications will be felt in many quarters.

When Russia invaded, I reflected on what this would mean for the material I work with – wood. Russia is home to vast forests and it is the largest exporter of sawn wood in the world.

While the UK's direct imports from Russia aren't huge – 6 per cent of our sawn wood and 7 per cent of wood panels – Russia provides a lot of the wood that is processed and consumed in Europe, meaning its removal from the European mar-

ket will create shortages that need to be replaced.

There is also an added complication regarding Russia's ally in the war – Belarus. It is a major exporter of wooden pallets which move products, from food and pharmaceuticals to building materials and electronics.

Ukraine itself has been a major source of wood for pallets. These sources cannot be replaced overnight.

Last year we saw record prices for wood products in the UK and many people struggled to get hold of garden sheds, fences and similar products – so building projects were postponed.

This is a foretaste of what is likely to come as world demand for wood soars and supply stays largely the same.

Globally, the World Bank and WWF have forecast that demand for wood is set to increase threefold or even fourfold by 2050/60.

In Europe there are few places where more forest is being grown or where additional wood supplies can be tapped into.

In fact, in Central Europe we have seen huge swathes of forest damaged by beetle infestation in recent years and it is likely that much of this wood producing forest won't be reinstated.

The impact of war in Ukraine is expected to be a further tightening of global wood supply which could last for many years.

The UK will always be a huge importer of wood products, and we have a strong regulatory system in place to ensure that the timber we import is from legal and sustain-



able sources, but others aren't so strict – the pressure on fragile forests overseas will increase as pressure on supply increases.

Increased use of wood in place of carbon-heavy materials like steel, concrete and plastics is part of our strategy to tackle climate change. If wood prices rise too high, there's a danger that the construction sector will switch to these energy intensive materials, undermin-

ing our efforts to achieve net zero. Putin's war is forcing governments to revisit assumptions and recalibrate policies.

The rest of the UK needs to act now to follow Scotland's lead and plan for a future where we cannot assume that wood will always be freely or cheaply available. **Stuart Goodall is Chief Executive of trade body Confor: promoting forestry and wood**

on fragile forests

Ground-breaking tech can help rehabilitation after limb and muscular damage

Electrical muscle stimulation was initially designed for use during the training of astronauts to enhance their fitness levels, writes **Dr Nestor Demosthenous**



Unknown to many, electrical muscle stimulation (EMS) was initially designed for use to train astronauts and enhance their fitness levels, but when news of this application was released, aesthetics industry giants clamoured to research how this technology could be harnessed and used to manufacture platforms that would offer clinical solutions for body sculpting and fitness.

Of course, more than 30 years on, manufacturers such as Cutera have launched platforms such as truBody Flex, which utilises EMS. But now in addition to being used for body sculpting and shaping, these devices and their ground-breaking technology can also be used therapeutically to complement physiotherapy to rehabilitate limb and muscular damage.

EMS provides an electrical current at a specifically designed frequency to target motor nerves causing them to fire. This stimulation creates muscle contractions that can be quick and frequent, fast with long pauses, or contractions that are held for several seconds or minutes at a time. Normally, electrical impulses from the brain travel through the central nervous system (CNS). EMS allows for deep, intense, and complete muscular contractions without activating the CNS. It is the contraction type that determines whether the session will result in a warm up, increase in strength, muscle hypertrophy or even recovery. EMS works directly on the muscles and bypasses the body's own energy conservation system, which means that there's no limit to the percentage of muscle fibre that can be activated. The impulses generated are delivered through electrodes (pads that adhere to the skin) over the middle of the muscles that require stimulating.

While this method successfully restores and improves muscle tone, another brilliant application of EMS is to combat muscle atrophy, which is basically a decrease in muscle mass that can happen due to injury or even ageing. A 2018 study by Volker Adams from The Heart Center in Dresden, Germany, found that EMS was becoming progressively more popular to increase muscle function

and mass, especially when applied to healthy individuals after injury. In fact, studies in experimental models as well as in human subjects confirmed that EMS can increase muscle mass by around 1 per cent and improve muscle function by around 10 to 15 per cent after five to six weeks of treatment! TruSculpt Flex has shown a final muscle mass increase of up to 30 per cent.

In a study by Kyoto university in 2011, the team assessed the effect of EMS on the prevention of muscle atrophy in patients during the early rehabilitation stage after anterior cruciate ligament (ACL) reconstruction. Twenty patients with acute ACL tears were divided into two groups randomly. The control group (CON group) participated in only the usual rehabilitation program. In addition to this protocol, the electrical muscle stimulation group (EMS group) received EMS training from the second post-operative day to four weeks after the surgery. Muscle thickness of vastus lateralis and calf increased significantly four weeks after surgery in the EMS group, while it decreased significantly in the CON group.

A few months ago, we offered truSculpt flex, a treatment that incorporates Multi-Directional Stimulation (MDS), a unique method of EMS, to one of our patients who suffered an accident that caused muscular atrophy in his calf. The treatment targeted specific muscle groups in the calf. Post-treatment, he was astounded with the results, which, quite impressively, included a newfound ability to contract the muscle and an increase in muscle mass of the injured area. Most recently, Cutera have unveiled truSculpt flex+, an upgrade to the Flex system, which yields the same brilliant results but in a 15-minute no-downtime treatment. This treatment offers an unprecedentedly easy, safe and quick route to muscular rehab and will undoubtedly become a go-to treatment for those who wish to speed up their recovery and enhance the outcomes of their physiotherapy sessions.

Dr Nestor Demosthenous is an award-winning aesthetics doctor with a clinic in the heart of Edinburgh's New Town

Time for measured debate on role of GPs in gender dysphoria

GPs pressured to comply with trend to affirm, say **Angus McKellar** and **Anthony Latham**

As General Practitioner physicians (GPs) we have serious concerns about the recent exponential rise in children, predominantly girls, who present with gender dysphoria to their doctor. Increasingly a form of 'rapid-onset' dysphoria is being encountered. The Tavistock 'Gender Identity Development Service' in London, had a 20-fold increase in referrals between 2011 and 2019 and now has a waiting list of over 5000 children. The Sandyford clinic in Scotland has a waiting list of over 900 under-18s, a rise of 749 since 2017.

We are privileged to be able to listen to our patients, understand their concerns and achieve a shared understanding of their problems. It is wonderful to accompany our patients and their families on their journeys, often through many years. We always seek to act in their best interests and to cause them no harm.

We have studied the literature on gender dysphoria in children, and have followed the case of Keira Bell, who recently brought a legal case against the Tavistock clinic which she attended as a child. She, and increasingly many others, have now de-transitioned, affirming their biological sex but having already undergone life-changing, irreversible changes to their bodies from sex hormones and surgery.

It is well established that at least 80 per cent of children who present with gender dysphoria will become comfortable in due course with their biological sex if a watchful waiting policy is pursued.

Research shows that most have significant mental health and social



The Chartered Institute of Logistics and Transport

↑ The UK should increase tree planting to produce the wood we need to help us to achieve our climate change targets.



we be considered transphobic if we chose not to refer children to a gender clinic (on the assumption that this may harm them, signposting them instead to an alternative referral route, if desired). Secondly, would a professional opinion that sex is immutable be considered transphobic?

Our health board would not give a clear opinion and asked us to clarify this with NHS Scotland. NHS Scotland, after a delay of six months, replied stating that we should seek clarification from our health board.



Scottish Council on Human Bioethics



Dr Nestor Demosthenous Medical Aesthetic Centre