30th Anniversary
of the Re-discovery of the
St Helena Ebony
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St Helena’s Ebonies are not related to the well-known African timber trees, but evolved from plants similar to Malows and Hibiscuses. The nearest relatives are a group or “genus” of shrubs called *Dombeya*, common in Madagascar but also found in southern Tropical Africa, and a further genus called *Trochetia* which occurs in Mauritius. It is probable that *Dombeya*-like plants (see Figure 1), were once much more widespread across Africa, but many of their descendents now flourish only on remote outposts in the Atlantic and Indian Oceans (Figure 2).

Figure 1: *Dombeya acutagula*, a distant relative of St Helena Ebony.
It remains a mystery how the ancestors of the Ebony arrived on St Helena. Perhaps the seed was washed-up after floating on ocean currents, or deposited in droppings after being eaten by migrating birds. However, we know from fossilized pollen that Ebony-like plants were present on the island at least 8 million years ago.

At this time, St Helena would have looked very different. The island was thrust from the mid-Atlantic ridge by undersea volcanoes approximately
14.5 million years before the present day. Like the Ebony, other species of plants found their way to the island by luck. Most would have died, but a few survived and went on to colonize the barren landscape of lava and ash (Figure 3). As the island became more vegetated, the new forests and shrublands trapped more rainfall, the fallen leaves decayed to form rich soils, and the vegetation provided more complex habitats capable of supporting a diverse assortment of species.

Figure 3: The barren landscape of Sandy Bay looks much like the island would have done, before it was colonized by plants, some 14.5 million years ago.
evolution

Separated from their mainland relatives, the ancestors of the Ebony gradually evolved in their shape and behaviour to suit their new environment. Eventually they were so different that they became new species. Today, we regard the Ebony as belonging to a separate genus – *Trochetiopsis*, which occurs nowhere else in the world.

*Trochetiopsis* species have large flowers with plenty of nectar and pollen, which seem to be designed to attract large insects such as bees, see Figure 4. If a naturally-occurring bee species ever occurred on St Helena it has long been extinct. Honey bees were introduced much more recently by humans. The seed is large and heavy. It does not spread in the wind so we do not know how it used to be dispersed. Perhaps bird species used to eat it and scatter it to new areas in their droppings, with the tough seed coat helping it to survive digestion. This is speculation however, as all native seed eating birds died-out in the 1600s.

Figure 4: St Helena Ebony *Trochetiopsis ebenus*. 

6
the Ebony family tree

Over many millennia, the early Trochetiopsis managed to colonize different altitudes and environments (Figure 6). They had to acquire completely different specializations to each, and evolved into three separate species. Since we know so little about the original ecology of St Helena, we can only guess some of the story.

Plants which lived in the hot, arid lowlands could only grow when they received sufficient rains – a rare event. They lived to a great age and laid down thick, very dense, black wood. Their leaves were covered in a felt of white hairs to prevent water loss. The flowers were also very small, only 2cm across, and poked through the canopy on long stalks. Despite the difficult conditions, these trees were very successful and formed dense forests along the coastal fringe and valley floors. This impressive species was Trochetiopsis melanoxylon, known to early colonists as the Ebony Tree, or Blackwood Ebony, see Figure 7 & 8. Unfortunately, such a slow-growing species could not withstand the grazing of the huge herds of goats, introduced by the early Portuguese explorers, and the last remaining individuals were cut for their valuable timber by the British settlers in the late 1700s. The famed Ebony Tree is now extinct.
Figure 6: Plant life on St Helena—an illustrative look at plants species' ability to colonize the differing habitat zones of the island.

**Plant life on St. Helena**

14.5 million years ago.

Barren lava fields with few small plants, colonizing from the first wind-blown seeds.

Evolution of early colonizing species, including...
10 million years ago?

Development of complex, lush habitats in upland areas. We do not really know how long this process took.

Early colonists into new growing shrubs and trees.
Figure 7: An artistic representation of what the Ebony Tree *Trochetiopsis melanoxylon* might have looked like. 
Illustration by Dr Phil Lambdon
Higher on the exposed cliff tops, where a little water condensed from sea mists, another Trochetiopsis species made its home. This species could tolerate moderately dry conditions. It formed a low, sprawling shrub which enabled it to withstand strong winds and this in turn helped to reduce water evaporation from the leaves. The beautiful white flowers were large and bell-shaped. The shrub was Trochetiopsis ebenus, the St Helena Ebony or Dwarf Ebony. St Helena Ebonies were also easy pickings for goats which all but wiped them out. Fortunately, a few plants managed to survive on inaccessible cliffs and have given rise to the population which we celebrate today (Figure 9).
At higher altitudes still, the third *Trochetiopsis* species established itself. It favoured the moist zone from the foot of the central Peaks ridge to the base of the cloud-covered tree fern thickets which crowned the summit. This species grew more rapidly to compete with other fast-growing trees such as the She-Cabbage and False Gumwood. It also produced beautiful timber, but this was less dense, and coloured deep red. We know that it reached at least 8m high. The large, hanging bell-shaped flowers were white, but soon turned pink after pollination. *Trochetiopsis erythroxylon*, the Redwood (Figure 10), was less vulnerable to goats, but suffered equally from the arrival of humans due to logging, the clearance of land for agriculture and from competition with numerous introduced plants. By the 1970s, just two individuals remained. Thanks to the efforts of modern day conservationists, a much more healthy population now survives in cultivation.
Although St Helena was discovered in 1502, we have very few reports of the island’s plants until the late 1700s. The Portuguese, who claimed the territory, never established a permanent settlement, but kept the island a secret to avoid the threat of invasion. They did however introduce goats for food, which had soon multiplied into huge herds and began to devastate the island’s natural vegetation.

In 1588 the location of the rumoured island was discovered by English mariners, and finally became known to the world. Perhaps the earliest written account of the plant life was from François Wittert in 1608, who commented “There is one [tree] whose leaves are like those of sage ... it is that which furnishes Ebony”. This suggests that tales of an Ebony tree, with dense black wood, had already become established in folklore, although few had ever seen it.

A British colony was finally founded by the East India Company in 1659. The new inhabitants needed timber for construction and firewood for fuel, and so the native forests suffered further losses. By 1718, James Valley, once thickly wooded, was almost bare of trees, and Deadwood had long since been cleared.
In the early 1700s, lime bearing sand was discovered near Sandy Bay and work immediately started on extracting the lime to be used for building. A lime kiln was constructed (Figure 12), and the impressive stands of ancient Ebony which still survived in Sandy Bay were ruthlessly harvested to fuel the fires. Meanwhile, the bark was wastefully stripped for tanning leather. An East India Company report of 1709 laments: “the tanners ... for laziness never took the pains to bark the whole tree but only their bodies”. Such a practice would have killed the plant for relatively little reward.

Figure 12: Restored in 2001, this is the lime kiln used by the East India Company.
Only four preserved twigs of the Ebony Tree remain today. Two were sent to London in a collection by Governor Poirier in 1700, and are now held at Oxford University, see Figure 13. From these, the species was officially described to science. The other two specimens are housed at the British Museum and were collected by Joseph Banks and Daniel Carl Solander, the first modern botanists to visit St Helena, who arrived on the HMS Endeavour on the way home from Captain Cook's first voyage of discovery to Australia. In Banks's journal, he notes that even by this time, "the trees which produce [Ebony] are now nearly extinct, and no one remembers a time when they were at all plentiful".

Figure 13: Specimens of the Ebony Tree sent to England by Governor Steven Poirier in 1700s. Currently held in collection by the University of Oxford.
The last individuals probably died before 1800. The East India Company employed a professional botanist, William Burchell, between 1806 and 1812, who made a detailed catalogue of the island’s plants. He never saw the Ebony Tree. Notes by later botanists, Roxburgh and Antommarchi, suggest that a few may have persisted near Sandy Bay until the 1820s, although their descriptions share characteristics with the Dwarf Ebony.

Even after its demise, fragments of the durable wood were commonly collected, and some can still be found in remote locations today. Few pieces suitable for making furniture survived, although it was used to carve fine ornaments, and during the Boer War was much valued in the prison camps for inlay work. Some specimens were sent to the Great Exhibition in London in 1851, and are now stored in the Ethnobotany collection at the Royal Botanic Gardens, Kew.

The Dwarf Ebony is mysteriously absent from the early botanical records, and in fact, there is no mention of it until after the extinction of the Ebony tree. From this, we can surmise that it was extremely rare even by the 1700s, and perhaps survived only in remote, cliff-top locations seldom visited by people. However, specimens were sent to London around the turn of the 19th Century, and their descendants were kept as beautiful hot-house plants for many years. Unsubstantiated stories suggest that they survived in the Mediterranean region well into the 20th Century. Even in the early years however, Burchell knew it in the wild only from High Hill and Man and Horse. He made an excellent watercolour of a plant cultivated at Plantation House. Although he was well aware that it was a different species from the lost Blackwood Tree, as this faded from memory the two species became confused. They are not distinguished in later accounts.

The next important botanist to live on St Helena was John Charles Melliss in the 1850-70s. In his book, he notes “This plant I believe to be now extinct ... The last ... I saw was a small one growing in the garden at Oakbank, about twenty-five years ago, but it is not there now, and I have
This appears to be the last that was seen of the Dwarf Ebony for well over

100 years, until the dramatic rediscovery in the 1980s.

Figure 14: The Ebony by William Burchell.

**re-discovery**

In November 1980 a student by the name of Quentin Cronk from the University of Cambridge arrived. Working toward his doctorate, Quentin had come to study St Helena’s plants.

George Benjamin, a Forest Guard, employed with St Helena Government’s Agricultural and Forestry Department, worked with Quentin in the field. His contribution to the young student’s studies was invaluable, as George knew much about the island’s endemics and was actively trying to conserve them. ‘Quentin worked hard’ recalls George; with only two weeks Quentin literally had a lot of ground to cover.
Setting out early each morning to pre-arranged locations across the island and returning in the afternoon, Quentin continued his exploration. Early on Tuesday morning the 11th November, Quentin and George walked the long stretch from Wild Ram Spring to the Ball Alley and down to Castle Rock and then ‘round under’ Asses Ears, where they found fragments of Ebony and Tea Plant, plants that had long since died. Up to this day, such fragments of wood can still sometimes be found, a pitiful reminder of a thriving habitat and of the scale of loss. From there they walked to Frightus, where they rested. By then it was about 4 o’clock in the afternoon. George remembers, as he sat drinking his sweet black tea, spotting an unusual plant growing on the cliff: ‘some leaves were red and some green and with white flowers’, a sighting well worth a closer look. George refused to climb down and told Quentin, ‘not even if you give me a thousand pounds, I not going down d’ere!’. So, two days later George and Quentin returned with Charlie.

Figure 15: Quentin Cronk (left) and George Benjamin (right).
Charlie Benjamin, George’s brother, was a fisherman, who was quite familiar with the precarious slopes and precipitous cliffs of the coastal fishing routes. Equipped with ropes and stakes, George, Quentin and Charlie made their attempt to recover the plant, a plant they dearly hoped to be a long lost endemic. With one rope firmly anchored to the stakes and another tied around his waist, Charlie descended the cliff, with George securing his safety line. A slightly worried Rosie Peters, an agronomist with St Helena Government’s Agricultural and Forestry Department at the time, waited at the top of the cliff. She was quietly confident that Charlie could handle the ropes, for if he had been returning from a fishing trip he would have been climbing with a heavy bag of fish! Meanwhile Quentin guided Charlie to the spot of interest.
When Charlie returned, he brought with him a few precious cuttings from the upper-most one of the two plants he found on the cliff, together with a flower and a seed pod. Seeing the plant up close, Charlie’s step-daughter Rosie now recalls George and Quentin’s excitement. ‘They couldn’t believe it was what they had expected it would be, the St Helena Ebony’. Collecting the cuttings had required heroic effort and was a cause for celebration as the men shared a well-deserved drink of brandy that evening on their return to Pounceys.

Charlie was to return once more to the Ebony site in 1983 to collect cuttings from the second plant on the cliff, but declined a further request.

Quentin left the island with a few cuttings and seed, destined for Cambridge Botanic Garden. The rest were left in George’s charge to propagate as much as possible, which he did with huge success, as the plant proved easy to root. Soon George was planting the Ebonies, giving them away to schools to be planted by pupils and selling them to the public. George chose his repopulation sites so successfully that today in Ebony Plain, High Peak, White’s Cottage, and Pounceys the species still thrives. ‘Looking at the history of how the island was filled up with trees, we thought that the Ebony would be a good plant for down the lowlands’,
George now recalls, and he was right.

George was very successful not only with propagating the St Helena Ebony, he created greater awareness of on island conservation work. He was so successful in fact that the word ‘endemic’ soon became commonplace in the vocabulary of school teachers, their pupils and the public.

Meanwhile back in the United Kingdom, Quentin Cronk lobbied for support for biological conservation on St Helena. He successfully received assistance from the Flora and Fauna Preservation Society, the Conservation Monitoring Centre of the IUCN (International Union for the Conservation of Nature), the Royal Botanic Gardens Kew, the Foreign and Commonwealth Office and the Overseas Development Agency. This led to his return with Simon Goodenough, a horticulturalist from Kew in 1983, who assisted with plant propagation and made recommendations for conservation of the island’s flora. In 1983 the World Wide Fund for Nature agreed to fund the establishment of shade houses for endemic plant propagation. And, in 1984, under the leadership of George Benjamin, the ODA funded the employment of a team of ten men to work exclusively in conservation. This project was documented as ‘The Endemic Plants Propagation Programme’, created to establish and manage designated protected areas such as Peak Dale and High Peak.

As everyone knows George mainly for his passion for the endemics, it was hard not to be impressed. Even now George is keen to share what he knows and continues to speak with such enthusiasm about the endemics, often referring to them using their Latin scientific name, not easy with words like *Trochetiopsis erythroxylon*.

He took great pride in his work and the island continues to be proud of him. Like every passionate person, work came home with him too. With the weight of his responsibilities to save some of the world’s rarest plants many were planted around his home to ensure their welfare and security.

Between 1983 and 1995, when George retired, he and his team, the Conservation Section at A&F, had planted and established hundreds of Ebony and Rebony (see page 27) plants across the island and most
successfully at Pounceys, Ebony Plain and High Peak. In addition to their work with the Ebony, this conservation team successfully propagated the Bastard Gumwood *Commidendrum rotundifolium* found by Stedson Stroud in 1982, and five others including the St Helena Olive, now sadly extinct. For his work in conservation, George Benjamin has received a number of awards that include a Certificate of Honour awarded in January 1978 issued by the Agricultural and Forestry Departmental, a Badge of Honour issued by the St Helena Government in 1978, and a British Empire Medal in June 1989, for meritorious civil service worthy of recognition by the Crown.

![George Benjamin in his garden examining the flower of the only St Helena Olive *Nesiota elliptica* in the world. This species is now extinct.](image)

Figure 18: George Benjamin in his garden examining the flower of the only St Helena Olive *Nesiota elliptica* in the world. This species is now extinct.
The successful propagation of many of the island’s acutely rare endemic plants, the world’s rarest flora, brought international recognition for the work on St Helena and political interest was stirred. In March 1986 Councillor John Musk put forward a motion, The Musk Motion; “that the Government of St Helena, in recognition of the importance being attached to the flora and fauna of this our island by the international scientific community, does commit itself to preserve the natural heritage of St Helena and undertakes to take the lead in nature conservation” (Cronk, 1986). It was passed unanimously. Later, on the 24th November 1986, a submission was made of justification for inclusion in the World Heritage List for Diana’s Peak and High Peak for their outstanding universal nature conservation value. It was signed by the Parliamentary Under Secretary for Foreign and Commonwealth Affairs.

maintaining momentum

Efforts to support the conservation of island the flora and fauna increased after 1980. The recovery of rare endemics was a real possibility; it would open new opportunities for re-vegetating the island, a goal of much economic benefit to the island; halting erosion, protecting productive areas and beautifying the landscape.

Reflecting on early successes, progress might be considered to have been slow over the last thirty years. Numbers of many plant species still remain dangerously low and native habitats too small and fragmented to survive without constant conservation intervention. The task of recovering very rare plants had been monumental, especially if you consider that the island’s limited resource base with its difficulties to maintaining skills and knowledge, and the lack of financial and political support, yet work was pioneering. One can only imagine the possibilities with on-going investment.

Much progress has been achieved! At a 1995 Seminar entitled “A sustainable ecology for St Helena”, held at the Agricultural headquarters at Scotland, Quentin Cronk was clear, “St Helena’s most important endemic habitat is the habitat on the Peaks, on Diana’s Peak, Mount
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Actaeon and so on.” This habitat is not a self-sustaining ecosystem, “it is disappearing as we sit here”. He estimated then that in ten years 10% of the tree fern habitat would be lost. A year later Diana’s Peak National Park was formed and 14 years on, much hard won progress has been made to reverse the trend of decline, controlling alien plants and planting back native plants.

There have also been failures. Where species have been brought back from the brink of extinction, only to die out again, and to then become extinct. Of course, conservation is always about trial and error and it is difficult to learn when there are so few individuals to experiment with.

More recently the Overseas Territories Environment Fund financed action to improve nursery production, increasing the number of plants being produced, under the Critical Species Recovery Project. Regenerating capacity to mass produce endemics, supporting recovery efforts and re-establishing opportunities to re-vegetate St Helena’s eroded hillsides and halt the spread of invasive species.

Until now, there has also been no one to follow in George Benjamin’s footsteps, however OTEP Critical Species Recovery Project Kew-trained Vanessa Thomas has the potential. The field of biological conservation is a battle, it will take political will and commitment to provide the funding mechanisms needed to expand programmes, retain staff and create new opportunities. When asked what his vision was for the future, George replied “I would like to see the island get rid of its invasives and have endemics planted in many places”.

points to remember

Rescuing species presents huge challenges. With populations reduced to just one or two plants the first challenge is to find ways of successfully reproducing them. Some, like the Ebony, proved easy to root, others like the St Helena Olive, Redwood and Bastard Gumwood could not be successfully propagated in this way. This might have been the easiest way to reproduce the Ebony, but it was not necessarily the best way.
Reproducing critically rare and endangered plants from cuttings creates another plant, but it is genetically the same as its parent. Where populations are small and reduced to only one or two individuals, this method of reproduction can create a number of problems. These including loss of genetic diversity, increased vulnerability affecting the health and vitality of plants, reduced sustainability once reintroduced back into the wild and in extreme cases extinction; a real fact when an individual dies we lose its unique genetic code. It is important that many unrelated individuals reproduce sexually, ensuring genetically different individuals. It is unfortunate that some of the endemics, like the St Helena Olive (Figure 18), exhibited features almost preventing reproduction.

Should all of these difficulties be overcome then there is the challenge of planting and establishment. The natural habitats of these species no longer exist, are degraded or irreversibly altered and historical records tell us very little about the original habitat. Healthy functioning ecosystems rely on the co-existence of a whole suite of plant species together with their fungal associations, detritivores and pollinators. For species like the Ebony a whole new habitat would need to be engineered, but this was not the focus in the 1980s.

When the newly rediscovered Ebony entered into cultivation at the Scotland Nursery it was placed in close proximity to one of the only surviving Redwoods, a super endemic? Due to their similarities the two species cross-pollinated, Figure 19: The Redwood Trochetiopsis erythroxylon.
In 1982, an unsuspecting George germinated five of these seeds. On his return, in 1983, Quentin Cronk noticed that the seedlings held a strange form and took a specimen back to Cambridge to confirm their identity. The seedlings were indeed hybrids, a cross between Redwood and Ebony, the
The remaining seedlings were planted at Scotland and Pounceys where they grew vigorously, surpassing both the Redwood and Ebony in health and stature. The Rebony was discovered to be fast growing and its early flowering facilitated the quick multiplication of further plants, were incorporated into plantings of Ebony and Redwood taking place at High Peak and Ebony Plain.

The hybrid was officially described to science in 1995 and given the Latin name of *Trochetiopsis ×benjamini*, in honour of George Benjamin. It has kept its more manageable common name used on St Helena, the Rebony.

It is now realised that Redwood and Ebony are closely-related and unlike most older plant species, the Redwood and Ebony have further to evolved to develop the mechanisms preventing hybridisation. Now that this has been identified, re-introductions into the wild are no longer mixed.

**future prospects**

Burchell (1805-1810) described the Ebony as being of no economic use to the island but “extremely interesting and important as regard to purely scientific questions and thus ultimately have an indirect practical influence”. A rather narrow view perhaps? Leaving out the scientific interests, the St Helena Ebony is a component of former native dryland habitats and Ebony has a key role to play in their restoration.

Restored natural habitats have the potential to provide places for people to visit and enjoy, employ people in conservation and tourism and raise the island’s international profile. The National Trust is moving one step closer to realising this as it embarks on a Darwin Project that will provide practical on the ground training to help restore endemic rich areas at High Peak and Blue Point. Where the St Helena Ebony was rediscovered, and still survives in its cliff ledge refuge, this and the surrounding cliffs that were inaccessible to browsing herbivores, were a sanctuary for a number of other dryland endemic plants. It is this area that the new Darwin Project will help to restore.

Mass production of the native plants is needed to support efforts like this. Perhaps we will also see the commercial production of Ebony and many
of the other native plants to meet public demand to beautify gardens and landscapes.

what can you do?

- Get to know some of the endemics.
- Learn more about the invasive species and prevent their spread.
- Get involved! Visit Conservation Programmes on Public Open Days or Event Days, you will much more learn about the exciting work going on.
- Get out and about – enjoy world-class conservation in action and spread the word.

references


Beatson, A. (1816) Tracts relative to the island of St. Helena, written during a residence of five years. Bulmer & Co., London.


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inspired

Angela Price

Anamorphism

Iris Fowler
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Needlepoint

Christina Stroud

Ebony
Pastels

Danny Coutts

Eternal
Watercolour
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Ebony in a Wine Glass
Oil on Gesso

Ebony Branch
Oil on Gesso

Ebony in Delft Vase
Oil on Canvas
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Ebony Tribute
Oil on Canvas

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30th Anniversary of the Re-discovery of the St. Helena

George Benjamin
Oil on Gesso
30th Anniversary of the Re-discovery of the St Helena

Ebony Discovery Crate
Oil on Gesso

Ebony Discovery Crate
Oil on Gesso

Ebony on a Stand
Oil on Canvas
30th Anniversary of the Re-discovery of the St Helena

Ebony Discovery Crate
Oil on Gesso
30th Anniversary of the Re-discovery of the St Helena Ebony

The discovery of the St Helena Ebony has become a defining moment in the history of conservation on St Helena.

It ignited international interest in the island bringing support from scientists, conservationists and world renowned conservation organisations all wanting to prevent the loss of St Helena’s unique endemic flora and fauna. A species on the brink of extinction, the challenges of conserving species internationally classed as critically rare, this is a story based on success being dependent on the passion of people.

The St Helena Ebony is still a threatened species... three decades on.

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