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THE FALKLAND ISLANDS AS A SCIENTIFIC NEXUS FOR CHARLES DARWIN, JOSEPH HOOKER, THOMAS HUXLEY, ROBERT McCORMICK AND BARTHOLOMEW SULIVAN, 1833-1851.

by

Phil Stone

Charles Darwin (1809–1882) and Joseph Hooker (1817–1911) became two of the best-known figures in 19th century British science and have enduring reputations. For both men, the starting point of their careers was a round-the-world voyage on a Royal Navy vessel: 1831-1836 aboard HMS *Beagle* for Darwin, 1839–1843 aboard HMS *Erebus* for Hooker. Both ships spent time in the Falkland Islands engaged on survey and scientific work and Darwin and Hooker are both credited with originating research themes there in the fields of zoology, botany and geology. Appropriately, both men are celebrated and pictured in *The Dictionary of Falklands Biography*.

The circumstances in which they travelled were very different, but both enjoyed certain advantages. Darwin was supernumerary to *Beagle's* crew and was effectively the guest of the captain, Robert Fitzroy (1805–1865). As such he had considerable liberty of activity beyond the confines of the ship (Figure 1). Hooker held only a junior Naval commission as assistant surgeon on *Erebus* but enjoyed good social connections, an influential father, and had the cooperative support of the captain, James Clark Ross (1800–1862), in pursuit of his botanical research. Of course, neither man operated in isolation and what they were able to achieve was strongly influenced by their interactions with other members of the ships' complements. Darwin had the financial backing of a wealthy family and was able to employ a personal assistant, Syms Covington, whose role has been recently described in *Falkland Islands Journal* by Armstrong (2019). Darwin also enjoyed excellent relations with *Beagle's* officers, who then provided an extended network of scientific observers and collectors; a friendship with Bartholomew Sulivan (1810–1890) was particularly fruitful both during and after the voyage (Stone 2012; Stone & Rushton 2013). For Hooker, the backing of Ross was crucial, but he was probably stimulated more by rivalry than cooperation with the senior surgeon of *Erebus*, Robert McCormick (1800–1890).

Sulivan and McCormick (he sometimes styled himself M'Cormick) both have their own entries, with portraits, in *The Dictionary of Falklands Biography*. These touch on their relationships with Darwin and Hooker and note some of their own, independent

achievements, but the interactions between these four disparate characters go much further and are worth exploring. McCormick's unpublished papers held in The Wellcome Collection, London (hereafter WCL), are particularly revealing. By comparison, Thomas Huxley (1825–1895), assistant surgeon on HMS *Rattlesnake*, 1846–1850, played only a short and subdued role, which reveals more about him than the Falklands, but he went on to become a close scientific associate of Darwin and Hooker. It is a remarkable circumstance that the apparently remote and insignificant Falkland Islands were a common factor in the careers of five such notable figures in 19th century scientific exploration. This paper examines some of their interconnections: 'The Famous Five in the Falklands'.

Fig 1. The settlement of Darwin with Mount Usborne in the background. From Beagle's anchorage in Berkeley Sound Charles Darwin travelled overland to this point, on the isthmus joining Lafonia to the northern part of East Falkland. Mt Usborne (705 m) is the highest peak of the Falkland Islands and was named after Alexander Usborne, Master's Assistant on the Beagle.

***Beagle*: Darwin, McCormick and Sulivan**

When HMS *Beagle* left England in December 1831, McCormick was the senior surgeon and would have been relishing the opportunity to make a name for himself in scientific circles. At that time, the collection of zoological, botanical and geological

specimens was an activity expected of a naval surgeon. The better to fulfil this role, from November 1830 to April 1831 McCormick had attended a course of 97 natural history lectures at Edinburgh University presented by Professor Robert Jameson, an eminent scientific figure of the time. He subsequently wrote in his autobiography that "[h]aving now fairly taken up the pursuit of natural history, in addition to my ordinary professional duties, and prepared and qualified myself by a course of hard study and attendance on the lectures of the most distinguished professors, my great object was to get employed in scientific voyages of discovery" (McCormick 1884, **2**, 217–218, 217-218, reiterating an original diary entry dated 21 June 1831, WCL, Ms 3358).

It might seem from his autobiography that McCormick was thwarted in this ambition, the next period of his life being dismissed as "three years … spent in two small miserable crafts", of which the first was a "surveying ten-gun brig" (McCormick 1884, **2**, 218–219) – but the "ten-gun brig" was HMS *Beagle*. As is well known, things did not work out well for McCormick, and resenting scientific competition from the young upstart Darwin, McCormick left *Beagle* in Brazil. The *Beagle* experience left McCormick embittered. Throughout his autobiographical accounts he takes pretentious pride in recording his meetings with prominent naval personalities, scientists and aristocrats, and conscientiously names the ships on which he served – with the exceptions of Darwin and *Beagle* (Ross 1982; Stone 2020a).

McCormick's premature departure from Beagle was not regretted by Darwin who thought him tiresome and scientifically passé (Steel 2011). The latter assessment applied particularly to geology, which might seem surprising given that McCormick and Darwin had both attended Jameson's geology lectures in Edinburgh (Darwin in 1827). McCormick had evidently found Jameson to his liking (Stone 2020b) but Darwin thought differently, subsequently recalling that "[d]uring my second year at Edinburgh I attended Jameson's lectures on Geology and Zoology, but they were incredibly dull. The sole effect they produced on me was the determination never as long as I lived to read a book on Geology, or in any way to study the science" (Barlow, 1958, p. 52). Notwithstanding, Darwin had also attended lectures given by Charles Hope, Professor of Chemistry, who included some aspects of geology in his course. Jameson and Hope were on opposite sides of a contemporary controversy concerning the origin of rocks: Jameson claimed the pre-eminence of precipitation from aqueous solution; Hope promoted the role of subterranean heat in a notoriously flamboyant style that delighted the teenage Darwin. The ideas supported by Hope ultimately prevailed, but McCormick attended only one of his lectures, and favoured Jameson's view. Such contrary influences must have aggravated the circumstances that led McCormick to abandon the *Beagle* voyage early in 1832.

Fortunately, Darwin had rediscovered an enthusiasm for geology by the time he reached the Falkland Islands in March 1833 (with a second visit in 1834) and his discoveries there are well documented (Armstrong 1992; Stone 2008). Although his

first impression of the archipelago was far from favourable, Darwin's discovery of fossils transformed that initial view (Figure 2). A measure of the importance that he attached to them can be gauged from his account of Falkland Islands geology, accompanied by a full description of the fossils, being one of the first scientific publications to arise from the *Beagle* voyage (Darwin 1846; Morris & Sharpe 1846). In that publication Darwin acknowledged the assistance he had received from the officers of HMS *Beagle*, notably Sulivan and William Kent, the assistant surgeon. From Sulivan, the assistance continued long after the end of the *Beagle* voyage, as he continued to supply Darwin with specimens and observations during subsequent visits to the Falkland Islands (Stone 2012; Stone & Rushton 2013).

Fig 2. Brachiopod fossils of the kind collected around Port Louis by Darwin and McCormick. The larger shells are Schellwienella sulivani *(internal moulds of the pedicle valve), the species named after Bartholomew Sulivan by Morris & Sharpe (1846) although their original genus* (Orthis) *has been superseded. The smaller shells are mostly* Australocoelia palmata. *The coin is 25 mm in diameter. BGS image P100659 ©UKRI. For the type specimen of* S. sulivani *see Stone (2008, figure 2) or Stone & Rushton (2012, Figure 2*).

***Erebus*: Hooker and McCormick**

McCormick's opportunity to establish himself as a natural historian finally arrived when he was appointed senior surgeon to HMS *Erebus* which, with sister ship HMS *Terror*, was to seek the south magnetic pole and circumnavigate the putative Antarctic continent. When he joined *Erebus*, McCormick discovered that his assistant surgeon was to be the young botanist Joseph Hooker (1817–1911). This situation had the

potential for a similar conflict of interests to that which had developed aboard *Beagle.* On this occasion, McCormick was mollified by their difference in rank and the clear instruction from Ross that he was to have responsibility for zoology and Hooker botany, with McCormick noting proprietarily that "meeting Captain Ross in the dockyard, I took the opportunity of calling his attention to the geology" (McCormick 1884, **2**, 278–279). In the event, McCormick showed little interest in anything but large mammals, ornithology (i.e. shooting and skinning birds) and collecting geological specimens. By default, Hooker assumed responsibility for everything else and writing to his father from the Cape of Good Hope on 17 March 1840, he rejoiced that "McCormick takes no interest but in bird shooting and rock collecting … I am nolens volens [Latin: willing or unwilling] the naturalist." (Hooker Correspondence, Kew, JDH/1/2f.26-27).

This separation of disciplines seems to have worked well enough, so much so that when describing their respective observations in the Falkland Islands neither man felt it necessary to mention the other. Like Darwin, both initially thought the Falklands a dismal place and McCormick certainly maintained that view into later life. In his autobiography he recorded that on 4 January 1850 he advised an acquaintance who had been offered a position there "that the islands had little to recommend them" (McCormick 1884, **2**, p. 308). The recipient of this advice was A.S. Montague who ignored McCormick and took up the position of stipendiary magistrate – and now has his own entry in *The Dictionary of Falklands Biography*. In contrast, Hooker followed Darwin and revised his opinion of the Falklands once he had realised the scientific opportunities that were available.

Having arrived in the Falkland Islands on 6 April 1842, like *Beagle* nine years earlier, *Erebus* and *Terror* anchored off Port Louis in Berkeley Sound. Once there, McCormick's activities followed his usual themes of shooting birds and collecting geological specimens; in neither case did he bother much about recording context or relationships. Some of his specimens were subsequently included in the official expedition collection that Ross deposited with the British Museum (BM) in 1844, hereafter the Ross Collection (Woodward & Fletcher 1904, p. 391) and passed to the Natural History Museum (NHM) when that was independently established in 1880. Some other Falkland Islands material was retained in the personal collection that was bequeathed to the museum on McCormick's death in 1890. For the bird specimens, Steel (2011, p. 34) noted that "the Department of Zoology at the Natural History Museum still holds some of McCormick's specimens from the *Erebus* voyage". These may include all or some of the "142 birds and eggs from the Falkland Islands and Antarctic seas" that Keevil (1943, p. 61, note 27), recorded as forming part of the 1890 bequest.

From the geological perspective, McCormick would have been aware that he was following in the footsteps of his *Beagle* nemesis, Darwin, although he made no

acknowledgement of that. Ross was less inhibited and in the "official" account of the two *Beagle* exploratory voyages wrote that "The admirable accounts of the Falkland Islands, which have been so recently published by Captain Fitzroy and Mr. Darwin, render any description of them here unnecessary" (Ross 1847, **2**, 260–261). The *Beagle* narratives had been published in three volumes (with an additional appendix to volume 2) in May 1839: *Narrative of the Surveying Voyages of His Majesty's Ships Adventure and Beagle Between the Years 1826 and 1836* (Fitzroy *et al*. 1839). Darwin's contribution was volume 3, *Journal and remarks, 1832–1836*, and an independent publication of that volume – his *Journal of Researches* (Darwin 1839) – was rushed out three months later, shortly before *Erebus* and *Terror* sailed. McCormick would almost certainly have had access to this work. Ross would most probably have had a reference copy of the four-volume set aboard *Erebus*, whilst Hooker took a personal copy of *Journal of Researches* on his voyage (Hooker 1899, p. 187).

McCormick's description of Falkland Islands geology certainly suggested a familiarity with Darwin's account. McCormick (1884, **1**, p. 330), reiterating notes made in 1842 (WCL, Ms 3368) wrote that "the geology is very simple, clay-slate and greywacke [a dark, muddy sandstone], passing into sandstone, and the latter again into quartz … the clay-slate and sandstones containing abundant organic remains." Darwin (1839, p. 198) had previously written that "[t]he geological structure of these islands is in most respects simple. The lower country consists of clay-slate and sandstone, containing fossils … the hills are formed of white granular quartz rock … the quartz insensibly passes into the sandstone." The Ross Collection contains examples of the sandstone and "quartz rock". The latter is the sedimentary quartzite that in terms of modern stratigraphical nomenclature forms the Port Stephens and Port Stanley formations; the fossiliferous sandstone forms the Fox Bay Formation (Aldiss & Edwards 1999; Stone 2016).

Both Darwin and McCormick mostly collected fossil brachiopods. Darwin's account of the geology was supplemented by a detailed palaeontological assessment of his fossil collection by Morris and Sharpe (1846) in which they identified and named several varieties of brachiopod (Figure 2) and noted crinoids and a fragment from a trilobite. McCormick (1884, **1**, p. 330) also recorded brachiopods and crinoids but additionally noted *orthoceratites*, indicating a form of nautiloid cephalopod that would have left long and pointed, bullet-shaped fossils. A close study of McCormick's fossil specimens confirms that nautiloids are not present, but instead, in three specimens, there are the impressions of the slender, conical shells of rather enigmatic organisms known as tentaculitids (Figure 3), These had not been found by Darwin and may well have been what McCormick took for small nautiloids.

Fig 3. Tentaculitid fossils from the eastern end of Port Salvador; the largest of the shells is about 40 mm long. Although McCormick collected this kind of fossil at Port Salvador his specimens contain only a few small individuals. Tentaculitids are now long-extinct and although of uncertain zoological association were most probably shelled cephalopods of some kind. BGS image P511896 (detail) ©UKRI.

When McCormick arrived back in Britain with his specimens in 1843, Darwin's fossils from the Falkland Islands were being assessed by John Morris (1810–1886) and Daniel Sharpe (1806–1856). It would have been scientifically advantageous to have combined the two collections, but this did not happen, perhaps due to continuing personal antipathies. After the Morris & Sharpe (1846) publication Darwin's fossils went to the Museum of Practical Geology (the Geological Survey's museum) but were then transferred to the NHM in 1880. Some of McCormick's fossil specimens went with the Ross Collection to the BM in 1844 and then to the NHM in 1880; others followed in 1890 with the McCormick Bequest. None were given any attention until the assessments by Stone and Rushton (2007, 2012) and McCormick missed the chance to better Darwin and expand the Falkland Islands' fossil fauna. Thought by Darwin (1839, 1846) to be possibly Silurian in age, it is now regarded as a little younger than that, Early Devonian (about 400 million years old) (Aldiss and Edwards 1999; Stone 2016).

Hooker's botanical work fared rather better. He soon revised his initially unfavourable impression and wrote to his father (Sir William Hooker) on 25 May 1842 that

"Altogether this place is better for botany than I had expected and but for lichens etc, it beats Kerguelen's Land" (Hooker Correspondence, Kew JDH/1/2 f.101). Once back in Britain after the voyage, Hooker immediately worked on his collections and prepared his results for publication. Six volumes were published between 1843 and 1859 with Part 2 (*Flora of Fuegia, the Falklands, Kerguelen's land, etc*) containing a wealth of information on the plants of the Falkland Islands (Hooker 1847). Darwin had wasted no time in contacting him, arranging for the *Beagle* plant collection to be passed-on and urging that careful attention be paid to the flora of "Tierra Del." (Letter dated November 1843: Burkhardt 2008, p. 82). This introduction initiated a life-long friendship and scientific collaboration, although the two men had briefly met some years before – and oddly enough had been introduced by McCormick.

When reminiscing about Darwin in later life, Hooker (1899) recalled that just before HMS *Erebus* sailed "I had been introduced to Mr. Darwin, on a casual meeting in Trafalgar-square [London] by a brother officer who had accompanied him in the *Beagle* to Rio". Hooker does not name McCormick specifically, but he must surely have been the 'brother officer' concerned (Desmond & Moore 1991, p. 314). In his autobiography, McCormick (1884, **2**, pp 278–281) has little to say about the period immediately preceding the departure of *Erebus*, and there is no mention of meeting Darwin. His manuscript diary (WCL, Ms 3365) does record a number of excursions to London with Hooker in July and August 1839 – including a trip to the theatre on 8 July to see 'Lucrezia Borgia', and a visit to the National Gallery (which is in Trafalgar Square) on 11 July. McCormick named various dignitaries that they met, but Darwin was not one of them; perhaps another example of McCormick's desire to erase all memories of *Beagle*.

For most of their *Erebus* voyage, Hooker and McCormick seem to have got along well enough, each pursuing their own interests and largely ignoring each other, and this relationship clearly applied to their time in the Falklands. However, Hooker's comparison of the Falklands' flora to that of Kerguelen introduces the element of competition which is apparent from their differing accounts of discoveries at that island, in the Indian Ocean, early in the voyage.

On 12th April 1840, *Erebus* had arrived at the Kerguelen archipelago and anchored in Christmas Harbour close to the northernmost point of the main island. McCormick recognised volcanic craters surrounded by multiple basaltic lava flows, now known to be about 35 million years old. Despite its overwhelmingly volcanic character, one of the most striking features of Kerguelen's geology is the occurrence of fossilised wood and coal in sedimentary layers between the lava flows, with some substantial tree remains caught-up within the flows. In their subsequent writings, both McCormick and Hooker laid claim to the discovery of the fossilised wood (Stone 2020a) but inevitably it was Hooker's account that gained priority.[1] An increasingly embittered McCormick was still laying claim to the Kerguelen fossil wood discoveries many years later when

writing in connection with a subsequent Arctic voyage (McCormick 1857), but to no avail.

As a final affront, when the collected zoology of the Ross expedition was finally published in 1875, an anonymous reviewer (the style suggests this might have been Thomas Huxley – more on him later) in the prestigious scientific journal *Nature* wrote that "Dr. Hooker, under the title of "Assistant Surgeon" to the *Erebus*, was the Naturalist of the Expedition, and assisted by Messrs. M'Cormack [*sic*] and Robertson [surgeon to HMS *Terror*], the medical officers of the vessels, made an extensive collection of specimens in every department of zoology and botany" (Anonymous, 1875). McCormick's riposte may have been an anonymous entry in the *Army and Navy Gazette* for 7 December 1889 (p. 966) that begins: "For some reason or another an attempt has been made in some quarters recently to take away from Dr. McCormick, R.N., the historian of Arctic and Antarctic discovery, the credit of having been naturalist and geologist of the Antarctic expedition". The complaint goes on to list McCormick's contributions to Ross (1847) and concludes: "If the obstacle to a proper recognition of Dr McCormick's services is to be found in a doubt as to his actual position in the expedition, this proof ought to remove it." (Jones 1982; Stone 2020a). McCormick died the following year, in 1890.

Arrow, Philomel and farming: Sulivan

To continue with survey work during the austral summers, Sulivan made four further voyages to the Falkland Islands: 1838–1839 in command of HMS *Arrow*, and 1842–1843, 1843–1844 and 1844–1845 in command of HMS *Philomel*. With *Philomel*, Sulivan's winter base was Montevideo, and during the last two of the Falkland Islands voyages he was accompanied by his wife and family.

Throughout this period Sulivan corresponded with Darwin, supplying details of new geological discoveries and attempting to answer a welter of questions sent by his friend (Stone 2012; Stone & Rushton 2013).[2] Sulivan also sent botanical specimens to Hooker, who acknowledged (Hooker 1847, p. 223) that "My own Herbarium of Falkland Island plants is particularly rich, and has also received accessions from Mr Darwin, Capt Sulivan, Mr Wright[3], and within the last few days from Mr Chartres, Surgeon of H.M.S. 'Philomel', now surveying these islands under the command of Captain Sulivan" (Figures 4 & 5).

Fig 4. Mt Sulivan, West Falkland, seen from near Fox Bay.

Fig 5. Mt Philomel and the Chartres River, West Falkland. Edward Chartres was the surgeon on HMS Philomel.

One important geological discovery that Sulivan reported to Darwin was the bewildering array of rock types contained as pebbles and boulders in the sandstone forming the cliffs at Hill Cove, West Falkland. These weathered-out and accumulated on the beach and Sulivan wrote to Darwin, (Letter No. 675 dated 10 May 1843, Darwin Correspondence Project) “I never saw such a variety – beach at the foot of the low cliff

is strewed with pebbles of all sizes … Granites of all shades and colours [g]neiss sy[e]nite and I know not what slate basalt … &c &c." (Figure 6).

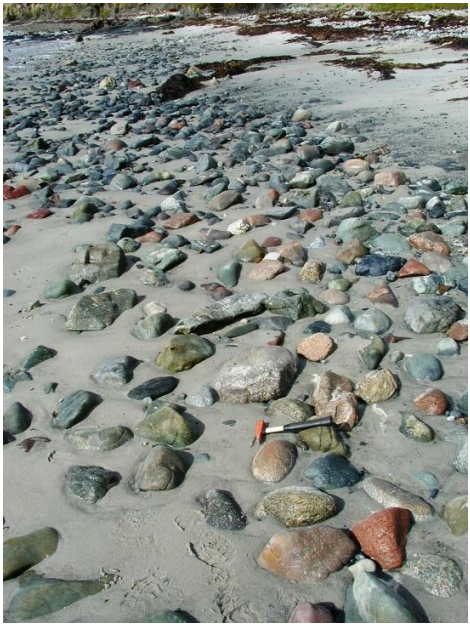

Fig 6. The beach near Hill Cove, West Falkland, just as described by Sulivan: "strewed with pebbles of all sizes … from a marble to two or three feet in diameter … Granites of all shades and colours". Sulivan correctly observed that the assemblage included "rocks not found in the island – I never saw such a variety". They are all glacial erratics, some far-travelled, which have been eroded from the adjacent cliffs formed by the glacigenic Fitzroy Tillite Formation. The hammer handle is 28 cm long.

The Hill Cove rock is now known to be an ancient glacial deposit – a 'fossil moraine' – but as discussed by Stone (2012), Darwin misinterpreted Sulivan's description and took the beach accumulation as supporting evidence for his erroneous belief that erratic pebbles and boulders were introduced from floating icebergs rather than being transported by terrestrial glaciers and ice sheets. Perhaps stimulated by Sulivan's description, Darwin was soon quizzing Hooker about the possible presence of transported boulders on other peri-Antarctic islands such as Kerguelen. Hooker replied uncertainly on 12 December 1844 but suggested that "The collections, I believe at the Geogolog [Geological] Soc., will however throw some light on the subject of Kerg. Land ones I am sure; & I shall rout them out next week if I can." (Darwin Correspondence Project Letter No. 799). Darwin was probably to be disappointed; the extant collection from Kerguelen at the NHM contains no exotic lithologies.[4]

The time spent by McCormick and Hooker in the Falkland Islands during 1842 had been divided by an excursion to Hermite Island, on the south side of Tierra del Fuego, in order to expand the range of Ross's geomagnetic observations. Both *Erebus* and *Terror* sailed to Hermite Island, and in their absence Sulivan arrived with *Philomel* to discover a shore party left behind by Ross at Port Louis to maintain geomagnetic and tidal observations there. By the time McCormick and Hooker returned, on 13 November 1842, Sulivan had sailed for West Falkland (Figure 4). McCormick made no mention of this in his published autobiography, but in his manuscript diary (WCL, Ms 3368, p. 1413) he recorded that "the Philomel, 16 guns, had arrived and sailed again a fortnight since, round the islands"; an autobiography comment dated 22 November then noted that "H.M.S. Philomel arrived here this morning at nine" (McCormick 1884, **1**, p. 329). There was no mention of Sulivan by name, and a subsequent, rather cryptic entry in McCormick's manuscript diary (WCL, Ms 3368, p. 1436) stating that although "Moody is governor … the Lieutenant in charge of the surveying ketch here is in charge" also avoids the issue. Throughout his writings, McCormick drops names at every opportunity and routinely lists guests to the ship with whom he dined. It is inconceivable that Sulivan, his erstwhile *Beagle* shipmate, was not invited aboard *Erebus* by Ross. We must assume that McCormick's disenchantment with his *Beagle* experience, and evident antipathy to Darwin, was extended to Sulivan who was, accordingly, expunged from McCormick's record.

An additional, if enigmatic Falklands link between Hooker and Sulivan in 1842 is suggested by three unsigned watercolour paintings held by the National Botanic Gardens, Dublin, Republic of Ireland. These were apparently acquired in about 1910 from Sulivan's son, Henry Norton Sulivan (who had been born in Stanley in 1848). After some detective work, Moore & Scannell (1986) proposed that the artist was most probably his father, Bartholomew, or possibly his mother, Sophia, who was known to have made a plant collection (perhaps she rather than her husband had provided the plants acknowledged by Hooker). One of the paintings shows Port Louis and from its appearance Moore & Scannell dated the artwork to about 1842. Another of the paintings shows enormous cushions of Balsam Bog (*Bolax gummifera* – Figure 7), but this painting is a very close compositional match to one illustrated by Desmond (1999, p. 73) as being in the possession of the "Family of the late R.A. Hooker" and credited to Walter Fitch (1817–1892). Fitch was the botanical artist who illustrated most of Hooker's publications, working from dried specimens and Hooker's original sketches. Fitch's work is the superior of the two so could the Dublin painting (and by extrapolation all three of them) be Hooker's original version, a discarded first attempt by Hooker, or a copy (possibly by Sulivan or his wife) of Hooker's original. Although there is no other evidence for any collaboration between Hooker and Sulivan, beyond the latter's provision of specimens, it would be nice to think that they compared botanical notes.[5]

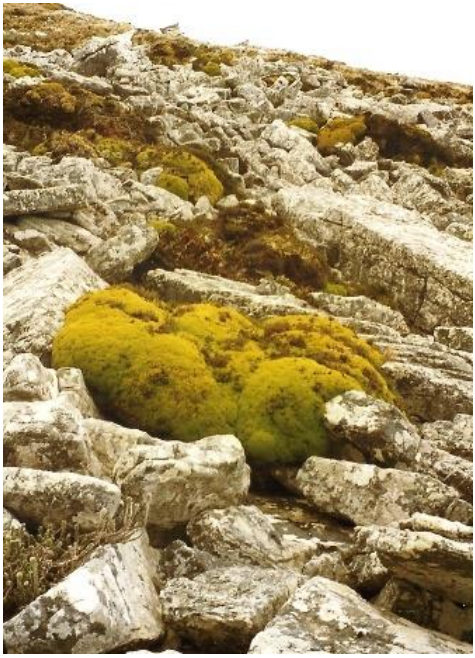

*Fig 7. Cushions of Balsam Bog (*Bolax gummifera*) growing on a stone run near Mount Challenger, East Falkland.*

Erebus and *Terror* sailed from the Falklands on 17 December 1842, leaving Sulivan and *Philomel* to continue surveying. During his several survey voyages, Sulivan came to have a much more favourable view of the Falkland Islands than Darwin, McCormick or Hooker. So much so that when he subsequently arranged three years leave from the Navy in order to travel 'for the good of his health', he chose to spend those years (1848–1851), with his wife and family, farming in the Falkland Islands.

***Rattlesnake*: Huxley, the missing man**

On 8 July 1850, whilst Sulivan was in residence in Stanley, he would undoubtedly have welcomed the arrival of another naval survey ship, HMS *Rattlesnake*, travelling back to Britain from Australia. As usual, the *Rattlesnake* surgeons were involved in natural history collecting and recording and the ship's assistant surgeon, who specialised in marine invertebrates, particularly jellyfish, went on to great zoological celebrity and became a friend and confidante of Darwin and Hooker. This was Thomas Huxley (Figure 8) who, surprisingly, did no work whatsoever whilst in the Falkland Islands.

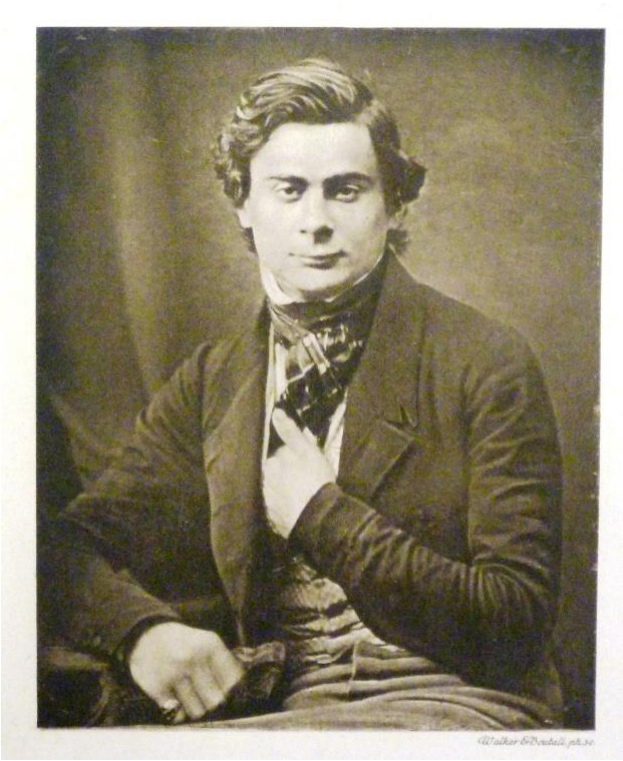

Fig 8. Thomas Henry Huxley in a daguerreotype portrait made in 1846. From Huxley (1901) courtesy of the National Library of Scotland.

Admittedly, he stayed for only two weeks and, it being the middle of winter, experienced very bad weather and limited hours of daylight. He wrote of his impressions and experiences in a letter to his fiancé Nettie (Henrietta Heathorn), in Australia (Huxley 1901, p. 33): "They say that the present winter is far more savage than the generality of Falkland Island winters, and it had need be, for I never felt anything so bitterly cold in my life. The thermometer has been down below 22 [°F], and shallow parts of the harbour even have frozen … By four o'clock it is dark night – and as it is too cold to read the only thing to be done is to vanish under blankets as soon as possible and take twelve or fourteen hours sleep." Nevertheless, at some point he may have visited Sulivan. In the same letter he described how "In one particularly black and unpromising-looking house lives a Mrs. Sulivan, the wife of Captain Sulivan, who surveyed these islands, and has settled out here. … However, I believe she is very happy with her children. Sulivan is a fine energetic man … and I think I shall go and look them up under pretence of making a call." (Figure 9).

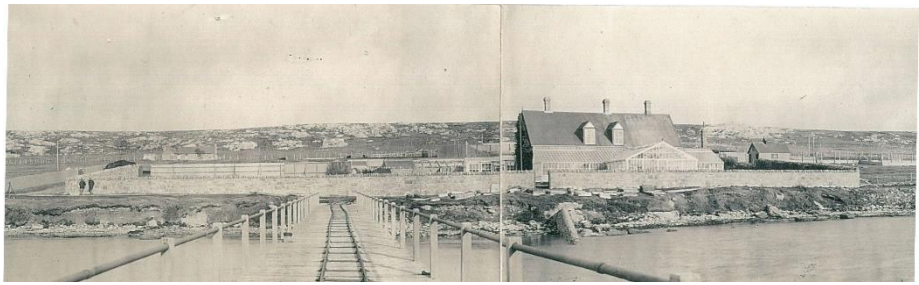

Fig 9. Sulivan House in 1926, probably much improved from the "particularly black and unpromising-looking house" described by Huxley. This building, then the home of the Colonial Secretary, burnt down in 1929. The jetty led to the Jhelum *hulk and has also long-since disappeared, as has most of the* Jhelum. *Image courtesy of the Jane Cameron National Archives, Falkland Islands. The present-day Sulivan House was erected in 1930 and continued to be the residence of the Colonial Secretary and, in more modern times, the Chief Executive.*

Despite all, he sounds cheerful enough in the letter, but separation from Nettie may have been encouraging a tendency to disinterest and depression. This had been particularly apparent earlier in the voyage (McCalman 2009). Huxley had met Nettie after *Rattlesnake* called at Sydney in 1847. There was local survey work to be completed so a lengthy stay ensued but, even so, it was a whirlwind romance and by the time the ship sailed again, at the beginning of May 1848, they were engaged. By July 1848 *Rattlesnake* was amongst the coral islands of the Great Barrier Reef, a veritable zoological paradise, but Huxley ignored the opportunity to expand his marine invertebrate work and instead skulked morosely in his cabin. He was well-aware of his depressed condition and did eventually return to a more positive state of mind, but perhaps something of the same mood afflicted him in Stanley. There, it was the ship's senior surgeon, John MacGillivray, who ventured out with Sulivan to view the latter's livestock. Huxley was probably delighted to leave the Falklands on 25 July 1850 but to darken even further his opinion of the islands: "And then I was laid up for ten days in my cabin with the mumps, which was running through the ship" (Huxley 1935, p, 334).

After the whirlwind Australian romance, Huxley's engagement was protracted. *Rattlesnake* arrived back in Britain in October 1850, but it was not until 1856 that Nettie was able to follow so that she and Huxley could finally marry.

Young men in love

The other protagonists in this Falkland Islands scientific nexus have different romantic backgrounds. Darwin's pre-*Beagle* flirtation with Fanny Owen is a well-known episode and he seems to have been upset for a few days when news reached him in Brazil that she had married someone else not long after he had sailed – but soon he was admiring the ladies of Buenos Aires. Later, post-*Beagle*, he married his cousin, Emma Wedgwood. Sulivan was also married after returning from the *Beagle* voyage, to Sophia Young, an Admiral's daughter. Hooker was less precipitate. After his voyage aboard *Erebus*, he joined a second expedition to India and into the Himalayas in 1847-1851, then in 1852 married Frances Henslow. Her father, John, was Professor of Botany at Cambridge University and had been an influential mentor to the young Darwin; he was instrumental in Darwin joining *Beagle* and orchestrated the distribution and publicity of Darwin's specimens as they arrived back in England. McCormick never married, but he proves to have been the dark horse of the team.

From McCormick's autobiography and the two subsequent biographies by Keevil (1943) and Jones (1982) he would appear to have been a humourless, stiff and self-opinionated character completely devoid of social graces (though obsessed by status). A completely different picture emerges from his personal diary for a short period in 1839 immediately preceding the departure of *Erebus* (WCL, Ms 3365 'Erebus fitting-out diary'). It is presaged by a few lines in the autobiography in which McCormick (1884, **2**, p. 280), having joined *Erebus* at Chatham, describes the launch on 30 May 1839 of a new sixteen-gun brig (HMS *Fantome*) and noted that "There were a great number of ladies present, and amongst them the belle of the place, the daughter of our outfitter, the pretty young Jewess, Annie Lucas." The published autobiography has no further mention of Annie: not so the private diary.

In his diary McCormick records several visits to 'Lucas's' in early June, then on 18 June, "Met A. L. at National Gallery." Between his other duties, more visits to 'Lucas's' followed and on 29 June the apparently unromantic McCormick presented Annie with "a beautiful specimen of a rose". August 28th saw them at the fair where they exchanged "Fairings" [small gifts purchased at the fair]; McCormick's gift was a basket of gingerbread. But all good things come to an end. On Saturday 31 August McCormick wrote "Capt Ross told me we sailed on Thursday. Went on shore and had a long chat with Annie in the kitchen about … and here McCormick's handwriting becomes frustratingly illegible, even 'kitchen' may not be an accurate reading. Thereafter, he "remained all this afternoon at Lucas's."

In the event, sailing was delayed, and Annie and her father were able to visit *Erebus* on 21 September and McCormick showed her around the ship and bestowed more gifts. His diary for that day then continues with a poignant, detailed description of

Annie (Figure 10) from which he intended to sketch her likeness (like many naval officers of the time McCormick was a reasonable artist and draughtsman): "dark long twisted ringlets small one finely curled over right forehead … eyes dark, finely arched eyebrows … complexion pale with light flush of colour … French bonnet black velvet shawl McKenzie Plaid …" and much more. Whether or not the sketch was ever made is unknown.

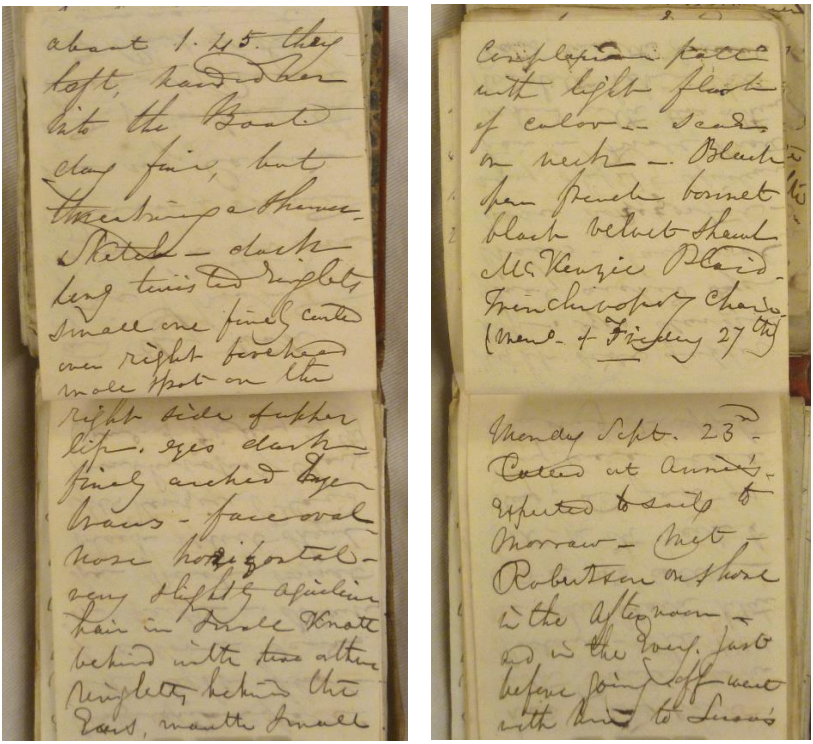

Fig 10. Extracts from McCormick's diary description of Annie Lucas: WCL, Ms 3365, 21 September 1839. In the entry for 23 September, John Robertson was the surgeon of HMS Terror. *The notebook pages measure 110 mm x 90 mm. © Wellcome Collection.*

Finally, on Tuesday 24 September, McCormick "took leave of Annie in the little parlour standing by the fireplace – about 10.30 pm …": this sentence ends illegibly but the diary entry concludes, "At midnight took my final leave of Chatham." *Erebus* sailed the next day. There is no further mention of Annie Lucas in any of McCormick's subsequent writings, published or unpublished.

Reputations and consequences

Little need be said about the rise of Darwin and Hooker to scientific eminence. Darwin's is now most probably amongst the names that would first come to mind for most people, anywhere in the world, if asked to name a famous scientist. Hooker is perhaps less well-known now, but in his lifetime his fame possibly exceeded Darwin's, and he was certainly better established amongst Britain's scientific elite. Both acknowledged the importance of their early voyages to their subsequent careers, for example Darwin: "The voyage of the Beagle has been by far the most important event in my life, and has determined my whole career" (Barlow 1958, p. 36). In this respect, their shared backgrounds undoubtedly helped foster their life-long friendship, and his similar experience probably helped Huxley into their inner circle. Huxley enjoyed a much less privileged background than Darwin and Hooker but through ability and force of character gained similar esteem within scientific circles, and as a charismatic populariser of science attracted much public acclaim. Darwin and Hooker are celebrated by Falkland Islands place names (e.g. Figure 1), whilst all three men have multiple species named after them.

Sulivan enjoyed a successful naval career, rising to the rank of Admiral. He supplied Darwin with additional information and specimens from the Falklands and South America, although Darwin could have made more of Sulivan's information from the *Arrow* and *Philomel* surveys (Stone & Rushton 2013). But at least Sulivan was celebrated in the name given to one of the fossils recovered by Darwin from the Falklands: originally *Orthis sulivani* (Morris & Sharpe 1846), now *Schellwienella sulivani* (Aldiss & Edwards 1999) (Figure 2). His fossil mammal discovery at Rio Gallegos in 1845 brought Sulivan a brief interval of scientific renown but it was short-lived and his contribution was soon forgotten.[2] Brinkman (2003) has analysed that process in some detail, concluding that Darwin was slow to appreciate the importance of Sulivan's fossils. He is remembered in several West Falkland place names, and by Sulivan House in Stanley (Figures 5 & 9).

McCormick craved recognition as a serious naturalist yet did little beyond opportunistic collecting. What accounts he did write were idiosyncratic and lacking in focus. His descriptions of the Ross expedition's geological discoveries had first appeared in the *Tasmanian Journal of Natural Science* (McCormick 1842a & b) before being incorporated with only minor modification into Ross's account of the expedition (Ross 1847, **1**, 71–80 & **2**, appendix 4). But it was not until 1899, nine years after McCormick's death, that a full description of his Antarctic rock specimens was published (it did not include the Falklands specimens), and therein Prior (1899, p. 70) was dismissive of McCormick's earlier reports: "these so-called geological accounts in most cases resolve themselves into exasperating (from a petrological point of view) descriptions of birds, for the doctor appears to have been a more enthusiastic ornithologist than geologist." Prior went on to bemoan "the absence of geological data

as to the mode of occurrence and mutual relations of the rocks in the field." At least McCormick's bird collecting paid some dividend and was recognised in the naming (but misspelling) of the South Polar skua, *Stercorarius* (*Catharacta*) *maccormicki*, of which he shot the type specimen. He has no Falkland Islands place name, but Ross established Cape McCormick (71° 50′ S, 170° 58′ E) on the Ross Sea coast of Victoria Land, Antarctica.

Despite his lack of any follow-up work McCormick tried, unsuccessfully, to assert his priority as the senior scientist on the Ross Antarctic expedition. After that expedition had returned to Britain, he spent most of the next eight or nine years without a ship, retained on half-pay. Although, like Huxley, McCormick had none of the financial and social advantages enjoyed by Darwin and Hooker, this time would have provided ample opportunity to make some analyses of the material available, but McCormick did not do so. Nor did he seek collaboration with the experts whose names are liberally scattered through his autobiography. He seems to have regarded collecting as an end in itself rather than a means to a more informed, scientific end. He would also seem to have undervalued his Falkland Islands fossil collection, failing to realise that he had found species that had eluded Darwin. All in all, his ambition outran his ability and led to an embittered resentment of what he perceived as prejudice and lack of respect. Fading memories of Annie Lucas probably didn't help.

Darwin, Hooker, Huxley, McCormick and Sulivan: five very different characters each of whom contributed in their own way to the progress of the natural sciences in the 19th century. It is remarkable that the remote Falkland Islands should have provided a common factor interlinking the development of their respective careers.

Note 1.
At Kerguelen, McCormick went ashore with Hooker on 16 May 1840 and in his published account, McCormick (1884, **1**, pp 50–51) implied that it was he who first found the fossil wood, writing that "I had the good fortune to discover the first trace of the fossil wood … loosely scattered on the surface … I called out to Hooker, who was within hailing distance of me at the time … to announce this unexpected discovery"; together, McCormick reported, they then "found larger fragments, *in situ*". This may not be the full story. That 1884 autobiographical account is an embellishment of the notes in McCormick's diary which make no mention of calling out to Hooker (WCL, Ms 3366). Perhaps McCormick was seeking to reinforce his claim to the discovery in the face of Hooker's alternative history. In a letter to his father written later in the voyage, from Tasmania and dated 16 August 1840, Hooker described McCormick's return from a boat expedition with "lots of coal and fossil wood – the latter we had long before found & I first detected it lying in immense trunks in the solid basaltic rock" (Hooker Correspondence, Kew, JDH/1/2f.31).
Note 2.

Despite Sulivan's important geological observations in the Falkland Islands, the discovery that brought him the most scientific prestige was made not there but at Rio Gallegos in Argentina, in January 1845. Sulivan had taken *Philomel* there to obtain fresh water after running-out a line of soundings between the Falklands and the South American mainland, and from the cliffs collected a spectacular haul of fossil mammal bones, subsequently shown to be Miocene in age and so about 15-20 million years old (Brinkman 2003). But despite an initial flurry of interest, the importance of the find was not fully appreciated at the time, not even by Darwin, and Sulivan's brief scientific celebrity soon faded. Even his eponym *Nesodon sulivani* was subsequently relegated, subsumed into *N. imbricatus.*

Note 3.
William E. Wright made an early botanical collection in the Falklands, probably in 1841, which was passed to Joseph Hooker via his father, Sir William Hooker, then the Director of the botanical gardens at Kew, London. In his botanical monograph of 1847, Joseph Hooker acknowledged receiving specimens from Wright and referred to him as "a mercantile gentleman".

Note 4.
Nevertheless, Darwin's misconception would have been encouraged when he learnt from the same letter that Hooker did find exotic, glacially transported rocks on Cockburn Island, at the north-east end of the Antarctic Peninsula, which the Ross Expedition had visited soon after leaving the Falklands. Perhaps it is just as well that he did not ask the same question of McCormick, who recovered several rock specimens from icebergs (Stone 2020a).

Note 5.
An alternative, if rather enigmatic identity for the unknown artist might be William Wright (see note 3). Correspondence between him and Sir William Hooker, shows that in 1842 he agreed to carry to the Falkland Islands letters and specimen boxes for Joseph, from Sir William, departing at the end of March or in early April aboard the *Princess Royal*, and that he "expects to arrive at the Falkland Islands before Capt Ross departs" (Kew archive reference KLDC 1839 & 1840). Wright had clearly visited the Falklands before, and significantly Sir William Hooker (1842) wrote: "Bolax gummifer et complicatus [*sic*: Balsam Bog] … Among some interesting drawings of Falkland Islands scenery brought home by Mr. Wright, a remarkable feature in the country is due to the frequent occurrence of this little Umbelliferous plant." The 'remarkable feature' would have been the large Balsam Bog (*B. gummifera*) mounds; Desmond (1999, p. 71) noted that "when Sir William Hooker saw a sketch of a field full of them, he said they reminded him of gigantic pincushions or Norfolk dumplings." Intriguingly, Desmond (pp 74-75) also shows that the composition of at least one of Hooker's Falkland Islands sketches (of tussock grass) was influenced by a previous drawing by Wright that Sir William Hooker had provided for publication in

Gardeners' Chronicle (1843, page 131). Could sketches have changed hands late in 1842 when Wright, Joseph Hooker and Sulivan were all in the Falkland Islands?

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