

Robert McCormick and the circumstances of his Arctic fossil collection, 1852–1853

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ABSTRACT: The Royal Navy surgeon Robert McCormick (1800–1890) took part in three mid-nineteenth century British Polar expeditions, two to the Arctic and one to the Antarctic. Of the two Arctic voyages, the first was to Spitsbergen (in today’s Svalbard) in 1827; the second from 1852 to 1853, was one of the expeditions dispatched to search for the missing ships commanded by Sir John Franklin that had set out in 1845 to navigate a “Northwest Passage” through the islands of the Canadian Arctic. The Svalbard expedition was formative in developing McCormick’s interest in the Polar regions, with the likely highlight of his career being his subsequent participation in the Antarctic expedition of 1839–1843 led by James Clark Ross. Throughout these expeditions, McCormick collected natural history specimens, principally in the fields of ornithology and geology. Many of the geological specimens he retained in a personal collection which passed to what is now the Natural History Museum, London, on his death in 1890. This collection includes rock specimens from Svalbard and Baffin Bay, and a substantial number of Silurian fossils (mostly brachiopods) from Beechey Island and Devon Island in the Canadian Arctic. The fossil collection was the largest of several assembled during the successive expeditions sent out in search of Franklin, but is one of those that has received no subsequent attention. That omission was largely due to McCormick’s own scientific shortcomings and persisted despite his determined efforts to promote himself as a serious scientific naturalist and Arctic authority.

KEYWORDS: Arctic exploration – palaeontology – Silurian fossils – Brachiopoda – Northwest Passage – Beechey Island – Devon Island – Sir John Franklin – Svalbard.

INTRODUCTION

The early nineteenth century saw a resurgence of British interest in Arctic exploration, with a succession of Royal Navy ships dispatched from 1818 onwards in search of an anticipated “Northwest Passage” between the Atlantic and Pacific oceans. The driving forces were imperial prestige and colonial trading opportunities (with recurrent geomagnetic observations improving navigation), but science, and not least geology, benefitted from natural history collections made by the ships’ officers, commonly by the ships’ surgeons who had a traditional responsibility for that activity. Some took the role seriously, and some of their collections survive, but as noted by Steel (2011: 1–2), “the role of naval surgeons as a labour force in the history of natural history ... has been largely overlooked.” This paper acknowledges a few members of that labour force and considers particularly the Arctic fossil collection of

surgeon Robert McCormick (1800–1890). It reviews that hitherto neglected collection in the context of those of his contemporaries.

The principal focus of British Arctic exploration changed dramatically following the disappearance of the expedition led by Sir John Franklin (1786–1847), with HMS *Erebus* and HMS *Terror*, which had left Britain in 1845. As concern for the missing ships mounted, search and relief missions were repeatedly dispatched. Silurian limestone was widespread across much of the search area and was richly fossiliferous in places. Several fossil collections from this period of activity were described in publications arising from the various expeditions, but with one notable exception. One of the largest extant fossil collections from this phase of Arctic exploration, now held by the Natural History Museum, London (NHM), was brought together in 1852–1853 by Robert McCormick, during his participation in one of the search expeditions. McCormick’s collection, dominantly of brachiopods, was bequeathed to the Museum on his death in 1890, but has never been fully examined; indeed, some of the brachiopod specimens remain unregistered individually and are still held as an informal “McCormick Collection”.

McCormick had previously served on two other mid-nineteenth century Polar expeditions mounted by the British Royal Navy: Spitsbergen (Svalbard) in 1827 as part of an unsuccessful attempt to reach the North Pole, and the much more celebrated Antarctic expedition led by James Clark Ross (1800–1862) between 1839 and 1843. An account of his experiences during the Polar expeditions is provided by McCormick’s two-volume, self-published autobiography (McCormick 1884), which has ensured him a small measure of celebrity. It is a somewhat pretentious work wherein he invariably describes himself as hardier and more knowledgeable than his colleagues, with an “innate, indeed, I may say, hereditary predilection, for navigation and seamanship” (McCormick 1884: 1: 403).¹ The autobiography has, in turn, facilitated two biographies: Keevil (1943) accepted McCormick at his own self-assessment, Jones (1982) was rather more critical. More recently, McCormick was described by Steel (2011: 1) as “an eccentric and sometimes difficult character”, but he has enjoyed friendly treatment from Palin (2018). None of these biographical accounts give more than cursory attention to McCormick’s geological collections.

McCormick’s geological specimens and observations from the 1839–1843, Ross Antarctic, expedition have been recently reassessed (Stone 2020), and this complementary paper is concerned with his Arctic collections, primarily the fossils from 1852–1853. These were included in his bequest to the British Museum (Natural History) in 1890. In full, the bequest comprised: “250 fossils, chiefly Brachiopoda, collected by him in the Arctic regions, Madeira, Tasmania, the Falkland Isles, and Kerguelen Land” (Woodward and Fletcher 1904: 308), and “[a] selection from the rock specimens collected by him during the Arctic Expedition of 1827, Antarctic Expedition of 1839–43, and the Franklin Search Expedition of 1852–1853” (Woodward and Fletcher 1904: 432). All of the Arctic fossil specimens seem to have been retained by the Museum, about 100 items in total.² In contrast, of the rock specimens, Woodward and Fletcher (1904: 432) note that only “a selection” was incorporated. Some of the extant rock specimens still carry paper labels with numbers written in McCormick’s handwriting, and these suggest that at least 202 rock specimens may have been included in the bequest, but only 86 would seem to have been selected for assimilation into the collection of what is now the NHM.³

The NHM was established as a separate branch of the British Museum in 1881 and was at first known as the British Museum (Natural History). It only became an independent institution as recently as 1963 but, for simplicity, will be referred to

consistently in this account as the NHM irrespective of any apparent anachronism. (Strictly speaking, the name “Natural History Museum” only became official in 1992.) Some relevant fossil specimens collected by McCormick’s Arctic contemporaries had originally been placed in the Museum of Practical Geology (MPG), the Geological Survey’s museum, but were transferred to the NHM in 1880; a few specimens were initially held by the Geological Society of London, but they too were passed on to the NHM in 1911. For the background to the collections and many other aspects of McCormick’s life, valuable additional information is provided by his expedition journals and notebooks, now held in the Wellcome Collection, London.⁴

THE ARCTIC INITIATION, SVALBARD 1827

William Edward Parry (1790–1855), the leader of the 1827 expedition, was a seasoned Arctic explorer, a veteran of four voyages, three as commander. In 1827, he was charged with travelling north from Spitsbergen (the name now reserved for the principal western island of the Svalbard archipelago) (Figure 1), with the overly hopeful aim of reaching the North Pole. Despite McCormick’s appointment to the expedition ship HMS *Hecla* as surgeon, it was one of the other officers, James Clark Ross (later to lead the Antarctic expedition), who took charge of the natural history collecting. McCormick was not one of the Polar team and instead stayed with HMS *Hecla*, anchored in a small, sheltered bay in the north coast of Spitsbergen that was given the name Hecla Cove (now Heclahamna). There, the local rocks form part of what is now known as the Hecla Hoek metamorphic complex (Precambrian to Silurian in age) – see for example Harland (1998) – and McCormick collected varieties of mafic schist, amphibolite and massive quartz which went to the NHM as part of the 1890 bequest.⁵ Having collected the rocks, he took no scientific interest in them, but he did find them attractive. In his autobiography he described (1884: 1: 415) “massive quartz of a fine pink colour, capable of taking a fine polish when cut, and from which I had a desk seal engraved with my own initials, which made as good an impression on the wax as from any gem”.

The expedition’s attempt to reach the North Pole made little progress. Parry had realized presciently that the northward march across the sea-ice was being countered by its southward drift. He wisely turned back, having established a new “farthest north” record of 82° 45′ N, still approximately 800 kilometres from the North Pole but a record that stood for the next 40 years. At the beginning of the homeward voyage, McCormick landed briefly at “Red Beach” (now Raudfjorden), where he “found that Red Beach evidently took its name from the colour of the old red-sandstone [Old Red Sandstone, Devonian] formation occurring there. I brought off from the beach some of the rolled, water-worn pebbles, banded red and white, having a very remarkable and pretty appearance” McCormick (1884: 1: 414). One such pebble is present in the NHM collection, a brown, fine-grained sandstone cut by a vein of quartz.⁵

For McCormick, the most important outcome of the Spitsbergen voyage was the profound impression that the island made on him, an impression that initiated a long-term interest in the Polar regions and an ambition to make a name for himself as a naturalist.

EDINBURGH, *BEAGLE* AND *EREBUS*, 1830–1843

Following the Arctic expedition, McCormick was either without a ship on half pay or on sick leave until, at the beginning of 1830, he sailed for the West Indies. That deployment was short-lived, and he returned to Britain in June, suffering from yellow fever. His mixed fortunes over the next decade have been assessed by Stone (2020), with three intervals of particular importance.

Firstly, his attendance at the natural history lecture course given by Professor Robert Jameson (1774–1854) at Edinburgh University between 3 November 1830 and 15 April 1831.⁶ At the end of the course, he recounted 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).

Secondly, his initial involvement as surgeon on HMS *Beagle*, which was to carry Charles Darwin (1809–1882) around the world between 1831 and 1836. This must have seemed to McCormick to be an ideal opportunity to establish his credentials as a serious naturalist. His inability to reconcile his own role with the activities of Darwin is well documented and much discussed (Desmond and Moore 1991; Steel 2011) and led to him leaving the ship early in the voyage. He would appear to have maintained a long-term antipathy to Darwin, who is never mentioned in the autobiography (McCormick 1884) despite the liberal introduction of the names of every other notable person that McCormick met. Darwin reciprocated, deleting McCormick’s name in his *Beagle* notebooks (Steel 2011: 28).

Thirdly, still hoping to make a name for himself as a naturalist, he lobbied successfully for a place on the 1839–1843 Antarctic expedition to be led by James Clark Ross, in command of HMS *Erebus* and HMS *Terror*; his application was perhaps viewed favourably by Ross, who had been an officer on HMS *Hecla* during the 1827 Spitsbergen voyage. As senior surgeon on *Erebus*, McCormick had ample opportunity to pursue his natural history interests, and his geological collections from that voyage are described by Stone (2020). For McCormick, this was probably the apex of his career, and in later life he became embittered over what he saw as the lack of appreciation afforded to his contribution, particularly given the rise to botanical fame of his assistant surgeon on the voyage, Joseph Hooker (1817–1911).

THE BACKGROUND TO THE ARCTIC VOYAGE OF 1852–1853

The Ross *Erebus* and *Terror* expedition returned to Britain in September 1843. However, rather than promoting further interest in the Antarctic, its successful return seems instead to have reinvigorated interest in Arctic exploration, and particularly in the quest for the elusive “Northwest Passage” through the northern Canadian archipelago. Thus, after repairs and refitting, *Erebus* and *Terror* were dispatched, in 1845 and under the command of Sir John Franklin, to continue pursuit of the Arctic sea-route. Given the performance of the ships in the Antarctic ice and their extravagant fitting-out for the Arctic voyage, speedy success was anticipated. Instead, by 1847 and with no news of the expedition having been received, concern mounted, and various relief missions were dispatched; no signs of the missing ships were to be found. McCormick soon began to take a personal interest in the fate of Franklin and his crews. In part, this would have stemmed from his having previously served on HMS *Erebus* during the Antarctic expedition; *Erebus* was probably his favourite ship. He had also met Franklin when the latter was Governor of Tasmania, which the Antarctic expedition visited in 1840 and 1841 (McCormick 1884: 1: 106–107), and

had renewed the acquaintance at a meeting of the Geological Society on 12 June 1844 (McCormick 1884: 2: 284). It was characteristic of McCormick to presume a lasting friendship with prominent persons whom he had met briefly.

Initially, on his return from the Antarctic, McCormick spent some time on sinecure appointments completing his appendices for the official account of the expedition. Then, by 1847, he began to lobby, unsuccessfully, for a position in one of expeditions sent out for the relief of the missing ships, all of which had returned disappointed, having found no traces of their whereabouts. In March 1848, McCormick began compiling a memorandum book of previous Arctic expeditions, which is now held in the Wellcome Collection.⁴ From this research, and despite having no direct knowledge of the region to be searched, he developed and promoted his own ideas as to the Franklin expedition's whereabouts. Meanwhile, growing public interest forced the Admiralty to continue dispatching search parties. McCormick was not included in any of them, and by September 1849 he may well have been anticipating a forced retirement, writing in his autobiography that he had “made up my mind to furnish a small cottage in the suburbs of London ... [as] a storehouse for my natural history collection” (McCormick 1884: 2: 306). But McCormick's persistence was finally rewarded in 1852. A squadron of five ships commanded by Captain Edward Belcher (1799–1877) was dispatched in the Spring of that year, and McCormick was appointed surgeon of one of them, HMS *North Star*.

McCormick's first specimen from the Belcher expedition was collected in Orkney, when the flotilla called at Stromness, but the Arctic collection *sensu stricto* commenced in Greenland. In passage to the search area via Baffin Bay (Figure 1), the ships anchored at several localities on the west coast of Greenland, and at each McCormick collected rock specimens. These were mostly of igneous and metamorphic lithologies, including granite, gneiss and basalt from Disko Island, and a variety of feldspar-pegmatites from the adjacent smaller islands.⁷ Some of McCormick's other specimens from the Baffin Bay area must have been obtained either as gifts or by exchange, as his collection also includes specimens from Baffin Island which he did not visit; most of these are varieties of gneiss.⁸ One Greenland specimen that is recorded as a gift is described as “plumbago” (graphite) by McCormick (1884: 2: 34): “McClintock [Francis Leopold McClintock (1813–1893), captain of HMS *Intrepid*, another of the squadron's ships] gave me a specimen of the plumbago from the mines of Sanderson's Hope”.⁹ McCormick also notes that McClintock had a herbarium of polar plants and a cabinet of rock specimens, suggesting that the collecting habit was quite common amongst the squadron's officers.¹⁰

PALAEONTOLOGY AND THE “NORTHWEST PASSAGE”

Early in August 1852, Belcher's squadron sailed into Lancaster Sound, and HMS *North Star* was anchored at Beechey Island, where she was to remain as the expedition base whilst the other ship's pressed on further west. The Franklin expedition had spent the first winter at Beechey Island in 1845–1846, and the graves of three crew members had been discovered there in 1851 (Beattie and Geiger 1987).

Like much of the surrounding coast, on both sides of Lancaster Sound and Barrow Strait, Beechey Island is composed of fossiliferous Upper Silurian limestone, now assigned to the Read Bay Formation (Fortier *et al.* 1963). Read Bay is a small inlet on the east coast of Cornwallis Island (Figure 1). Fossil collections had been acquired during several of the expeditions that preceded Belcher and McCormick, both those in

search of the “Northwest Passage”, and those subsequently searching for the missing Franklin expedition. Fossils were brought back by Parry from his three expeditions between 1819 and 1825 (Konig 1824; Jameson 1826), and whilst the fossils from the first two expeditions have not been located, at least some of those collected at Prince Regent Inlet and Somerset Island during the third expedition are now held by National Museums Scotland.¹¹ They were described by Lee (1912) as brachiopods, gastropods, corals, orthocones, ostracods and trace fossils.

The best documented collection from the subsequent Franklin search expeditions was accumulated by Peter Sutherland (1822–1900), surgeon on HMS *Sophia*, who sailed with an 1850–1851 mission led by William Penny (1809–1892). Sutherland wrote an account of the voyage, and in an appendix John Salter (1820–1869), a palaeontologist with the Geological Survey, provided details of the fossil fauna (Salter 1852); he also published a summary independently (Salter 1853). Sutherland’s fossils, now held by the NHM, came from several localities around Barrow Strait and the Wellington Channel.¹² From the collection Salter listed 45 different taxa – brachiopods, molluscs, corals, trilobites, orthocones, ostracods – and assigned an Upper Silurian age to the fauna. Salter (1853: 313) also referred to a separate recovery of fossils “brought away in ballast” in about 1849 and subsequently discovered in England at Woolwich dockyard. In 1852 McCormick was most probably aware of these discoveries, if only by hearsay.

To his frustration, McCormick remained with the *North Star* at Beechey Island for almost a year. He explored the island and collected fossils there and at localities on the adjacent Devon Island (Figure 1). For three weeks in August and September 1852, he led a small party in an open boat expedition up the Wellington Channel, ostensibly to search the eastern shore for signs of the missing *Erebus* and *Terror*, although his estimation of success can be gauged from the name he bestowed on his boat – *Forlorn Hope*. It was a dangerous undertaking, driven more by McCormick’s self-esteem and ambition than by the overall search strategy, but it did provide the opportunity for him to extend the range of his collecting along the west coast of Devon Island, and to eliminate the possibility of an eastward passage from Wellington Channel into Jones Sound. McCormick was a good artist and included landscape sketches in his account of the expedition (McCormick 1884) that illustrate the difficult conditions encountered by the *Forlorn Hope* and its crew (Figure 2).

There are many references to fossils in McCormick’s autobiographical account, in which he correctly described them as an Upper Silurian or slightly younger fauna (McCormick 1884: 2: 83), probably following the earlier published accounts. His large collection comprises mostly brachiopods, and of those most are of the species *Atrypella phoca* (Figure 3). The fossils went to the NHM as part of the 1890 bequest (Woodward and Fletcher 1904: 308): the Arctic material now held in the Museum’s palaeontology collection comprises 63 registered brachiopod specimens with another 32 specimens held informally.² Several of the larger specimens containing brachiopods also contain fragments of crinoids. In addition, two specimens of coral-limestone from the Devon Island coast adjacent to Beechey Island are held in the NHM petrology collection (Figure 4),¹³ whilst ostracod specimens collected at Emery Bay, on the west coast of Devon Island, during the *Forlorn Hope* boat journey, currently reside in both the palaeontology and petrology collections.¹⁴

McCormick’s two ostracod specimens, the larger shown in Figure 5, were recorded somewhat ambiguously, although both have identical characteristics and appear to have come from the same locality. Ostracods are small, smooth-shelled, oblate Crustacea only a few millimetres across, and McCormick clearly mistook them for

small pebbles, so thought the rock a conglomerate. The specimen now in the NHM palaeontology collection is accompanied by McCormick's original collecting note, giving its location as "Ridge – Ravine Bay". The specimen held in the NHM petrology collection still carries McCormick's specimen label number 16 and is accompanied by a more formal list of descriptions and localities for his specimens 15–18. In that list (Figure 6) specimen number 16, the ostracod specimen, is described as a conglomerate, "from the shingle ridge" in what he called Emery Bay, with the ravines noted in the text describing specimens 17 and 18. When the petrology collection specimen was formally registered in the NHM it was more properly described as a "fossiliferous limestone". The palaeontology collection specimen is accompanied by a supplementary hand-written curator's note that reads, correctly, "Crustacea", but the specimen has only recently been formally registered as Ostracoda.

McCormick's "Arctic" collection at the NHM also contains many specimens that he must have obtained from other people. Some of his fossil specimens come from Griffith Island, which he did not visit, whilst in addition to the specimens from Baffin Island mentioned earlier, other rock specimens are from localities in Lancaster Sound, Cornwallis Island and elsewhere which were beyond his area of activity. Three rock specimens are inscribed with both localities and dates, the latter indicating that they were collected a year or two before McCormick arrived.¹⁵ There would seem to have been either much exchange of material between those officers with a natural history interest, or a network of informal collectors feeding material back to the expeditions' "official" naturalists. McCormick made no acknowledgement of these benefactors, and the details of their historical provenance have been lost. Even when the date and locality are both known, as with the specimen of calcite collected from Griffith Island on 9 August 1851, it is hard to establish who was responsible. So, for that specimen, although Sutherland was in the area at the time, he placed himself far from Griffith Island on that date (Sutherland 1852). Otherwise, for that locality, Salter (1852: ccxix–ccxx) noted that "Griffith's Island ... was found by the officers of Captain Austin's squadron, to be equally rich in fossils." Horatio Austin (1801–1865) had led another 1850 expedition in search of Franklin's missing ships.

Conversely, as a benefactor rather than a recipient, it is possible that McCormick contributed to some of the other collections from Beechey Island. For example, the fossils described by Woodward (1878: 385 n1) as having been collected "probably by some of the officers of the Phoenix (Captain Inglefield), which visited Beechey Island both in 1853 and 1854". In 1853, McCormick travelled back to Britain with Inglefield aboard HMS *Phoenix* (a supply ship that had brought additional provisions to the *North Star*) and may possibly have shared some of his extensive collection with other interested officers.

Perhaps a more direct link is with the collection assigned to Belcher, McCormick's commanding officer, which contains a few fossils from Beechey Island that could have been provided by McCormick. However, most of Belcher's fossils are from localities farther west than the longitudes reached by McCormick and are more varied palaeontologically.¹⁶ It is perhaps surprising that a Belcher collection survives given that the four ships of his flotilla all became trapped in ice and were abandoned. The crews had to make their way across many miles of sea ice to the relative safety of Beechey Island and the *North Star*. Amongst the items salvaged and dragged across the ice was Belcher's fossil collection, and at least when back in Britain it received some proper attention. Although McCormick's specimens would have arrived back in Britain before Belcher's, it was the latter that were examined by appropriate

specialists. Salter described a Carboniferous invertebrate fauna collected much farther west than the Lancaster Sound area in an appendix to Belcher's published account of his expedition (Salter 1855: 377–388). He did not evaluate Belcher's Silurian fossils in detail but did admit that "many new forms of these Silurian fossils remain undescribed, and some of great beauty were brought home by Captain Belcher" (Salter 1855: 380).¹⁷ The same comment could have been applied to McCormick's collection and is still a true statement. Belcher's specimens were initially held in the MPG before being transferred to the NHM in 1880.

Belcher's expedition also returned with a small number of fossils from Beechey Island that had been collected by another naval surgeon, Alexander Armstrong (1818–1899). He had served aboard HMS *Investigator* which, also searching for the lost Franklin expedition, had entered Arctic waters from the west, via Bering Strait, in 1850. After enduring three Arctic winters, the last two with their ship trapped in ice on the north coast of Banks Island, the surviving crew were fortunate to make contact in 1853 with a sledge party sent out from HMS *Resolute*, one of Belcher's flotilla. The sickest men were evacuated over a hundred kilometres of sea ice (in the process completing a "Northwest Passage" from west to east), but with the *Investigator* re-supplied, a skeleton crew, including Armstrong, remained aboard for another winter. Finally, in 1854, the *Investigator* was abandoned along with Belcher's four ships, still inextricably frozen-in, and the crews all made long and arduous journeys across the ice to Beechey Island and thence back to Britain aboard the *North Star* and two other relief ships that had arrived rather fortuitously.

Armstrong wrote an account of his experiences in which there are references to the discovery of fossiliferous strata on Banks and Victoria islands (Armstrong 1857: 268), but his collections still presumably lie in the wreck of HMS *Investigator*.¹⁸ Remarkably, he did salvage at least one specimen of Palaeogene petrified wood (from Banks Island), which he recounts having presented to the Royal Dublin Society (Armstrong 1857: 397). When finally enjoying the relative safety of Beechey Island, Armstrong collected seven specimens containing brachiopods, with gastropods also present in one of them.¹⁹ They were initially presented to the Geological Society of London, then transferred to the NHM in 1911. The specimens appear well-chosen and carefully trimmed, suggesting a serious approach to collecting, but they did not receive any subsequent specialist assessment.

Armstrong's discovery of petrified wood led to discussions of its significance with McCormick, who had collected similar material on Kerguelen island in 1840 during his Antarctic voyage. Both men realized that the fossils implied a once-extensive tree cover in now-frozen Polar regions. Armstrong wrote of McCormick in glowing terms: "My friend, Dr McCormick, Surgeon, Royal Navy – an officer no less distinguished in Arctic than in Antarctic exploration and research". This accolade introduced an account of the Kerguelen wood, written by McCormick, that Armstrong incorporated into his book (Armstrong 1857: 403–405).²⁰ Therein, McCormick took the opportunity to reiterate his claim to the Kerguelen discovery in opposition to the counter claim by his Assistant Surgeon at the time, Joseph Hooker, whom he does not mention; this was a long-running dispute (Stone 2020).

Another lost collection most probably lies in the wreck of HMS *Erebus*, one of Franklin's ill-fated ships whose disappearance had prompted the missions with which McCormick, Sutherland and colleagues were involved.²¹ One of Franklin's crew who might be considered particularly unfortunate was Harry Goodsir (1819–c.1848), assistant surgeon on HMS *Erebus*, who had never been to sea before (Moore 2020). He had been conservator at the museum of the Royal College of Surgeons in

Edinburgh and only joined Franklin's expedition for the opportunities it presented for natural history research and collecting (Hutchinson 2017). His bones may have been one of the only two sets of remains recovered back to Britain and may now be interred beneath the Franklin memorial at the Royal Naval College, Greenwich, London (Mays *et al.* 2011). Like McCormick, Goodsir had spent time at Beechey Island, which was the 1845–1846 winter quarters of the Franklin expedition. He would almost certainly have assembled a fossil collection whilst there. In September 2014, the wreck of HMS *Erebus* was discovered well to the south of Beechey Island (Figure 1) (Hutchinson 2017). It lies in relatively shallow water and, in the future, marine archaeological excavation may be possible. Should Goodsir's fossil collection be recovered it would make an emotive final contribution to the palaeontological work of Royal Navy surgeons during nineteenth-century Arctic exploration.

A TAXONOMIC EPILOGUE

One species dominates the brachiopod collections made by McCormick and his contemporaries: *Atrypella phoca* (Figure 3). It was initially thought to be a pentamerid but is actually an atrypoid brachiopod more closely related to the Spiriferida. It was defined as a new species, *Rhynchonella phoca*, by Salter (1852, 1853) from specimens collected by Sutherland. From the nature of the specimens available in all the various collections, it is clear that this abundant brachiopod readily weathered out from the host limestone and in the mid-nineteenth century could be scooped up by the handful; McCormick (1884) made several references to having filled his pockets with fossils. Its widespread occurrence and abundance led Fortier *et al.* (1963) to make it an index fossil of the Read Bay Formation, but they adopted the name *Atrypella scheii*, following Høltedahl (1914). The successive transfer of the species *phoca* to the genus *Atrypella* (via *Atrypa* and *Lissatrypa*) has been documented by Jones (1974, 1977), who correctly challenged the use of *A. scheii* on the grounds of priority, as he considered that only one species was involved. The issue was investigated further by Smith and Johnson (1977), who concluded that *A. phoca* and *A. scheii* were two separate species, after a study (and definition of type specimens) that included re-examination of McCormick's and Sutherland's fossils.²² In either case, *A. phoca* should be restored to the Read Bay Formation fauna.

ROBERT McCORMICK: A CONCLUDING ASSESSMENT

The 1852–1853 involvement in the Franklin search expedition was McCormick's last active service at sea and it did not end happily for him. After his *Forlorn Hope* boat expedition, he spent a difficult winter at Beechey Island, on one occasion suffering broken ribs when he fell through an open hatchway aboard the *North Star*. Nevertheless, and perhaps true to character, he lobbied the expedition's senior officers to be allowed to undertake an even more ambitious boat exploration in the following summer. Unsurprisingly, permission was refused, and a frustrated McCormick returned to Britain in the autumn of 1853 on HMS *Phoenix*.

Once back in Britain and living in London, McCormick continued to promote his ideas as to the likely route of the missing Franklin expedition, and hence the appropriate areas that should be searched. His proposals that he should lead renewed search expeditions were encouraged by Lady Franklin but were consistently rejected by the Admiralty. However, his service with *North Star* and *Forlorn Hope* had one good outcome for him in that it qualified him for the Arctic Medal, newly instituted in

1857 for service between 1818 and 1855. He was also included in the group of leading officers from the Franklin search expeditions whose portraits were commissioned from the artist Stephen Pearce. McCormick's autobiography records sitting for his portrait in July and August 1854 (McCormick 1884: 2: 335). It is now held by the National Portrait Gallery in London, with a catalogue listing as "circa 1856".²³ In the portrait, McCormick proudly wears his Arctic Medal, which must have been added to the otherwise finished work in 1857 or later.

It is curious that, given his clear interest in the fate of the Franklin expedition, McCormick should make no reference in his autobiography to the evidence of disaster presented in 1854 by the Orcadian explorer John Rae (1813–1893).²⁴ With its grim suggestion of starvation and cannibalism – ultimately proved correct – Rae's report caused great public controversy and prompted furious, ill-informed rebuttals from the likes of Charles Dickens (McGoogan 2001). Instead, McCormick simply records sharing a platform on several occasions with those seeking to promote further searches. His reaction was perhaps true to character when unequivocal material evidence of Franklin's fate was finally recovered in 1859.²¹ In his autobiography (McCormick 1884: 2: 350), he wrote that:

the fate of the Franklin expedition had been discovered, the plan of search for which had originated with myself, I having drawn it up and had it laid before the Geographical Society ... and also had laid it before the late Board of Admiralty, with an offer on my own part to conduct it.

Whatever the merits of this claim, the circumstances served to further provoke McCormick's sense of injustice.

In terms of his professional medical duties, McCormick would seem to have been proficient and conscientious, but this did not lead to the senior promotion that he felt his Polar work justified. Resentful of perceived prejudice, he lobbied vigorously for his cause and was finally successful, being made Deputy-Inspector for Hospitals and Fleets in 1859. Nevertheless, he does not seem to have been fully employed in that role and in 1865 was placed on the retired list. This compulsory retirement added to his dissatisfaction, and his autobiography includes a stream of vehement complaints that his achievements had gone unrecognized (McCormick 1884). He was particularly concerned to reclaim scientific prestige from the geology and zoology collections that he had brought together during the Antarctic voyage of 1839–1843 (Stone 2020). Accordingly, amongst those prominent persons whom he tried to recruit to his cause were the geologist Roderick Murchison (1792–1871) and the comparative anatomist Richard Owen (1814–1892). In 1855, Murchison had become Director-General of the Geological Survey of Great Britain, whilst in 1856 Owen had become Superintendent of the Department of Natural History of the British Museum and was the driving force behind the establishment of what was to become the NHM. Both men, and many others, received McCormick courteously but probably saw little reason to aid his campaign. Darwin and Hooker, his old shipmates from *Beagle* and *Erebus*, he studiously avoided.

McCormick's fossil collecting was opportunistic and subjective rather than systematic. Nevertheless, he could have made more of his Arctic fossils had he applied to their study a fraction of the energy and perseverance that he brought to bear on perceived injustices and slights. In that respect his abilities were well summarized by Jones (1982: 90): "McCormick lacked the patience and persistence of Darwin, Hooker and Huxley in collecting and classifying." But despite his shortcomings and

an inflated sense of his own abilities, McCormick's collections do serve to illustrate a style of geological investigation that formed the foundation of modern research. As Steel (2011: 5) correctly observed, "overlooking him – and others like him – is a loss to our understanding of the history of natural history."

McCormick's general failing was to take only superficial interest in the specimens that he collected, and to make no attempt at a more detailed study when later opportunities arose. Nor did he seek specialist assistance despite boasting in his autobiography of frequent social meetings with many of the prominent geologists and palaeontologists of the day. He was seemingly satisfied by the acquisition of material, without feeling any need to pursue its analysis. Yet he undoubtedly thought himself a serious scientist and expected recognition as such, then felt much aggrieved that his achievements were, as he saw it, unfairly overlooked. Perhaps the opposite is true. His autobiographical works have ensured him a celebrity that his geological contributions do not really justify, whilst at the time he was decorated with the Arctic Medal and included in the elite group of officers for whom portraits were commissioned.²³ His small contribution to Arctic exploration is also celebrated by McCormick Inlet (75° 51' N, 111° 56' W) on Melville Island (Northwest Territories) and by Macormick [*sic*] Bay (75° 22' N, 92° 23' W, on the west coast of Devon Island (Nunavut) (Figure 1).²⁵

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NOTES

¹ McCormick came from a Northern Ireland family but was born near Great Yarmouth, Norfolk, on 22 July 1800. Having qualified as a surgeon he joined the Royal Navy in 1823. His father, also Robert and a Royal Navy surgeon, was lost at sea in the wreck of HMS *Defense* off Jutland on 24 December 1811.

² The Natural History Museum, London (hereafter NHM), palaeontology collection, specimen numbers B 52210–52249, BB 13027, PI BD 13113–13114, PM OS 19890, plus a selection of unregistered brachiopod specimens held informally as the McCormick Collection. Beechey Island and vicinity. Some registered numbers refer to individual fossils whereas others refer either to rock fragments containing numerous fossil examples or to boxes containing several small fossil specimens. Most of the brachiopods are examples of the species *Atrypella phoca*.

³ NHM petrology collection, McCormick Bequest, specimen numbers BM 66326–66374 and BM.1921.398(1–37).

⁴ Wellcome Collection, London (hereafter WCL): MSS 3356–3382, 8682. Of most relevance to this paper are MS 3372 (Arctic memorandum book) and MSS 3373–3382 (material relating to HMS *North Star*), particularly 3379 (private journal), 3380 (rough diary) and 3382 (Arctic sketchbook).

⁵ NHM petrology collection, Spitsbergen (Svalbard) specimens, BM 66375(a–c)–66385. The pink quartz is BM 66375; a pebble of red sandstone cut by a quartz vein is BM 66384.

⁶ WCL MS 3358: McCormick’s notes from Jameson’s lecture course at Edinburgh University, 1830–1831.

⁷ NHM petrology collection, specimen numbers BM 66327–66415, 66326–66374, BM.1921.398(1–6), Greenland.

⁸ NHM petrology collection, specimen numbers BM.1921.398(24–30, 35–37), Baffin Island, west coast of Baffin Bay.

⁹ NHM petrology collection, “plumbago” from Sanderson’s Hope, Greenland, specimen number BM 66345.

¹⁰ None of McClintock’s specimens from this period have been located, but the NHM palaeontology collection contains a few specimens assigned to other officers who were active in the Arctic around the time of McCormick’s visit, for example: Henry Kellett (1806–1875), brachiopod specimen numbers 97476, 97477, 97479, B 17904; Erasmus Ommanney (1814–1904), brachiopod specimen number 96957; Richard King (c. 1811–1876), brachiopod specimen number 97251, trilobite specimen It 14095. Silurian fossils collected by McClintock in 1859 during a subsequent expedition were described by Haughton (1860)

¹¹ National Museums Scotland, specimen numbers G.1825.21.1-36 from Parry’s third Arctic expedition.

¹² NHM palaeontology collection, specimen numbers 89156, 96446–8, B 4673, B 17900–12, B 21876. “Sutherland Collection”.

¹³ NHM petrology collection, coral-limestone specimen numbers BM 66357 and BM 66367.

¹⁴ Ostracod fossils, *Leperditia*. NHM palaeontology collection specimen number PM OS 19890; NHM petrology collection specimen number BM.1921.398(9).

¹⁵ NHM petrology collection, specimen number BM.1921,398(23), limestone, is labelled “Cape Riley, Barrow Straits, 1850”; specimen number BM.1921,398(33), calcite, is labelled “Griffith Island 9 Aug 1851”, BM.1921,398(35), gneiss, is labelled “Cape Warrender, Lancaster Sound 1851”.

¹⁶ NHM palaeontology collection, specimen numbers B 17840, 41 and B 17847-56. “Belcher Collection”.

¹⁷ One of the most unexpected discoveries must have been the ichthyosaur bones found on a small island to the northwest of Devon Island and described by Richard Owen (1855).

¹⁸ Armstrong (1857) refers to Banks Island by its early alternative name of Baring Island.

¹⁹ NHM palaeontology collection, specimen numbers B 82036-82042. All contain the brachiopod *Atrypella phoca*, but B 82042 has in addition small spiral gastropods.

²⁰ McCormick repaid the compliment with a favourable review of Armstrong's book for *The Daily News*, published on 23 April 1857 (McCormick 1884: 2: 346).

²¹ During the summer of 1845, Franklin's expedition had circumnavigated Cornwallis Island, then overwintered at Beechey Island, and in 1846 had sailed south along Peel Sound before becoming inextricably trapped in ice. The fate of the ships and crews was definitively established in 1859 (McClintock 1859). For details of this and subsequent discoveries see Hutchinson (2017).

²² Salter did not establish a holotype in his original account, so Smith and Johnson (1977) defined as type specimens for *Atrypella phoca* two fossils collected by Sutherland: Lectotype = BB 69152, Paratype = 89156.

²³ Portrait of Robert McCormick by Stephen Pearce, c.1854–1856. *National Portrait Gallery*. Available at: <https://www.npg.org.uk/collections/search/portrait/mw04108> (accessed 24 September 2018).

²⁴ McCormick had met Rae previously and discussed with him the likely fate of the Franklin expedition: "Saturday 10 April 1852. I met Dr. Rae ... We had a long chat together over the Arctic chart, on which he pointed out to me ... in his opinion, the most likely spot for discovering the fate of Franklin" (McCormick 1884: 2: 326).

²⁵ Geographical Names in Canada. Available at: <https://www.nrcan.gc.ca/earth-sciences/geography/place-names/10786> (accessed 26 October 2018).

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FIGURES

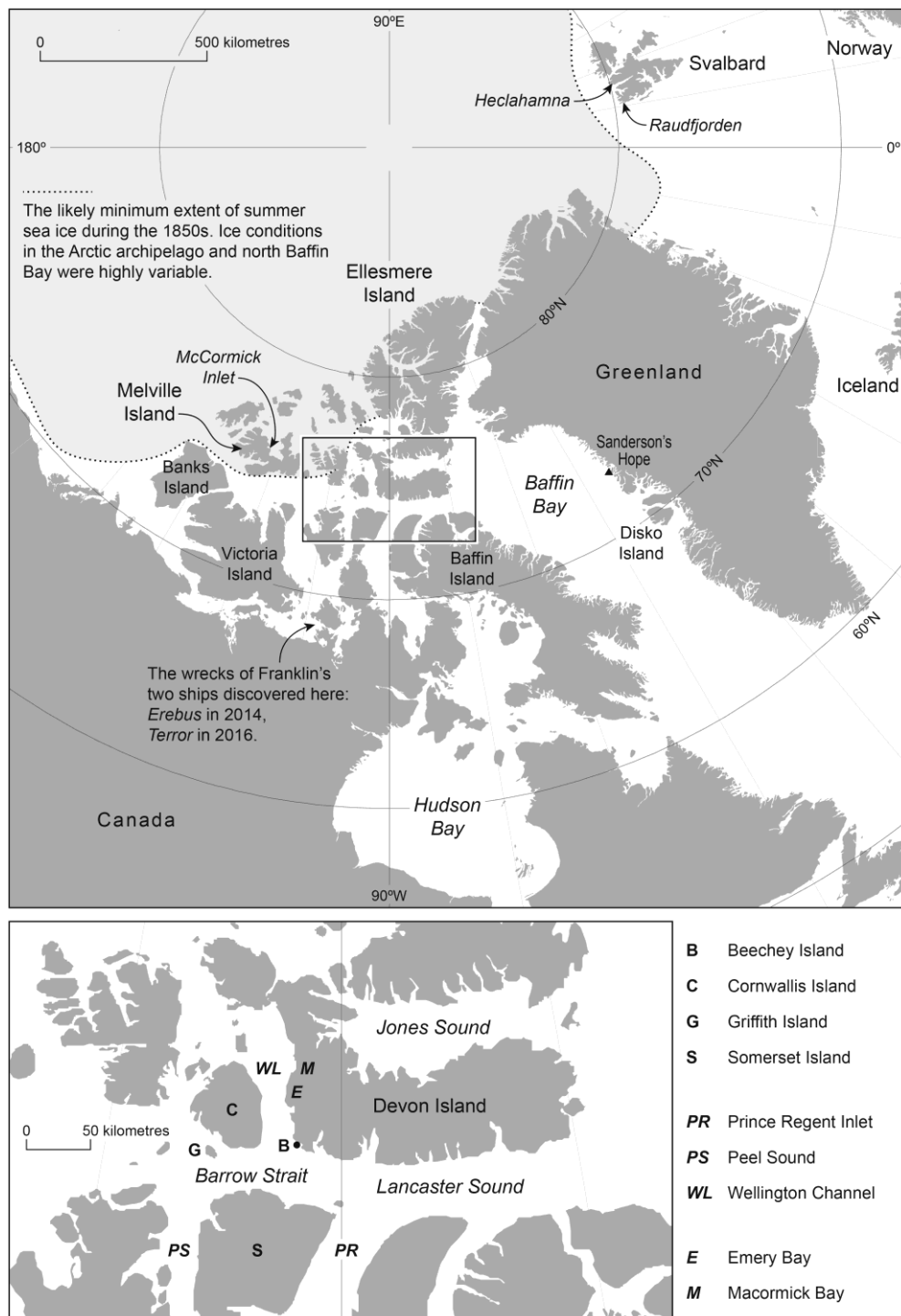


Figure 1. The Arctic Region visited by Robert McCormick with the area of Devon Island and environs expended to identify key localities. The likely minimum extent of permanent summer sea ice in the 1850s has been deduced from first-hand accounts cited in this paper; winter sea ice extended throughout the Arctic archipelago and the northern part of Baffin Bay. Illustration by Craig Woodward, BGS Edinburgh. © British Geological Survey (UKRI).



Sketched by R. McCormick, R.N.

Launching of the boat over the drift ice from Lovell Point Encampment.

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Figure 2. A drawing by Robert McCormick illustrating conditions on the *Forlorn Hope* expedition in 1852: “Launching of the boat over the drift ice from Lovell Point encampment” (McCormick 1884: 2: 108). He draws himself standing nonchalantly at the bow of the boat with a gun over his shoulder whilst his crew labour on the ice floes. Lovell Point is at the southeast end of the Wellington Channel, a little to the north of Beechey Island (Figure 1). National Library of Scotland CC BY 4.0.

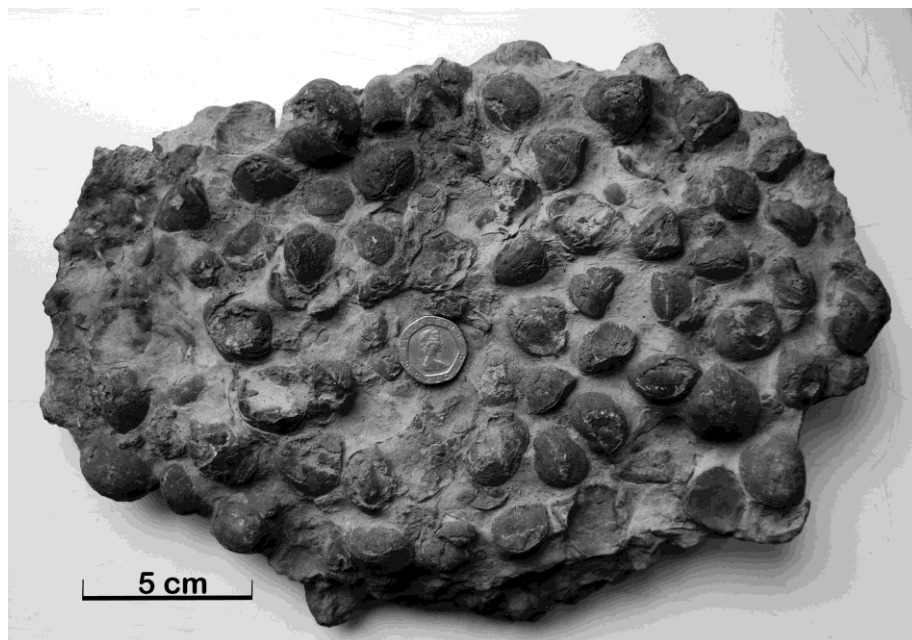


Figure 3. The largest of Robert McCormick’s fossiliferous specimens from Beechey Island: Read Bay Formation limestone packed with roughly spherical examples of the brachiopod *Atrypella phoca* (Salter) which give the rock a nodular appearance (diameter of the coin is 2.1 cm) (NHM, McCormick Bequest, palaeontology collection number PI BD 13113). Photograph by Philip Stone.

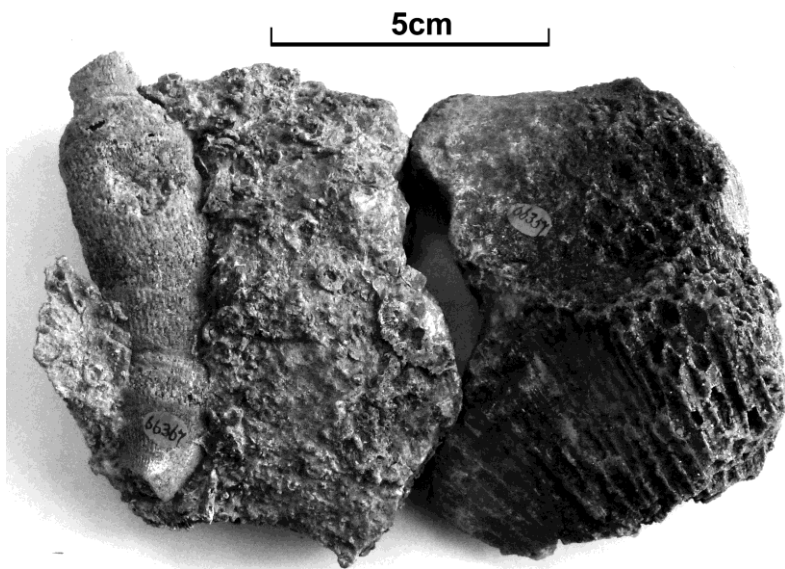


Figure 4. Two specimens of coral limestone with examples of solitary (left) and colonial (right) corals; both were collected by Robert McCormick from the Devon Island coast in the vicinity of Beechey Island (NHM, McCormick Bequest, petrology collection specimen numbers BM 66357, 66367). Photograph by Philip Stone.

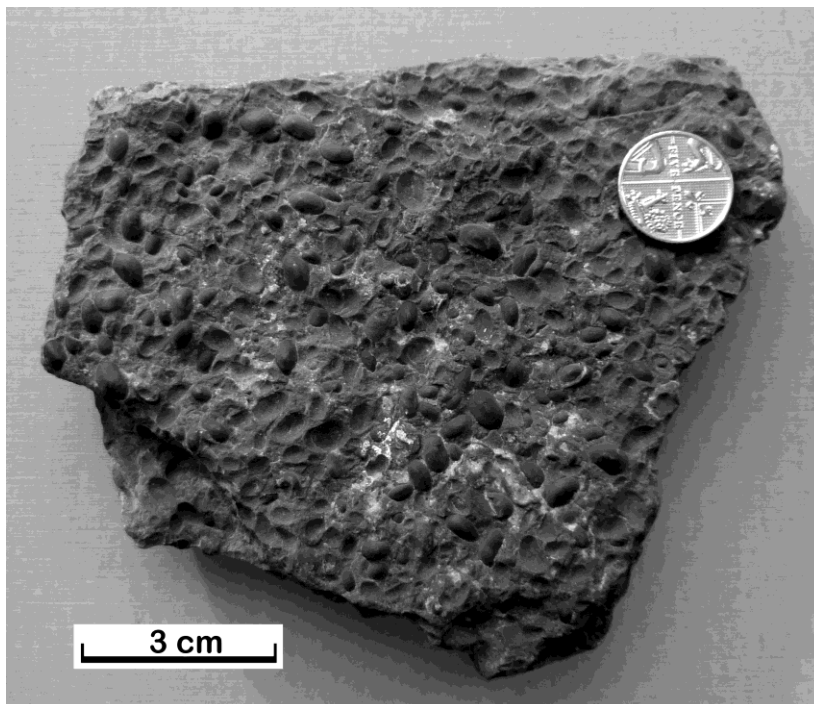


Figure 5. A limestone specimen containing the ostracod *Leperditia* collected by McCormick during his *Forlorn Hope* boat expedition along the Devon Island coast of the Wellington Channel, NHM palaeontology collection. The coin has a diameter of 1.8 cm. (NHM palaeontology collection number PM OS 19890 (McCormick Bequest). A second specimen is held in the petrology collection as BM.1921.398(9)). Photograph by Philip Stone.

Franklin Searching Expedition 1852-3
 J. M. C.

No. 15 Fossiliferous limestone, embossed with "Lecanora lepans", from "Point Owen".

No. 16 Conglomerate specimen - "from shingle ridge" - } Smeay Bay,

No. 17 } Specimens from a limestone cliff, intersected by } Wellington

No. 18 } a vein of gypsum - in a ravine in } channel

Figure 6. McCormick's list of the geological specimens collected from the Devon Island coast of Wellington Channel during the *Forlorn Hope* boat expedition. Photograph by Philip Stone.