Franklin’s Final Expedition

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In May 1845, the *Terror* and *Erebus* set forth from the Thames on an expedition to finally map the northwest passage.[1] The expedition was led by Sir John Franklin, an experienced explorer who had spent time previously exploring the Arctic by land, and had been a member of the Royal Navy for more than forty years.[2] The disappearance of this expedition has long been a great mystery in Arctic exploration. This paper will examine the fate of the final Franklin expedition to the Arctic and the causes of the deaths of all 126 members of its crew. We know that the expedition was well equipped with an abundance of supplies and rations to feed the explorers on this journey. *Erebus* and *Terror* would also have been well stocked with countermeasures for scurvy and other common illnesses from the time.[3] The ships themselves were equipped with state of the art technology and were undoubtedly the most advanced ships to ever explore the Arctic regions, so it is difficult to imagine any sort of mechanical failure led to the problems the crew faced.[4] So we are left with the question; how could such an exceptionally well equipped expedition suffer this horrible fate? Although it is hard to say with absolute certainty, it seems very clear that a mixture of fatigue, likely caused by scurvy and lead poisoning, as well as a general overconfidence in the success of the expedition, would eventually be its downfall.

Historically much blame for the disappearance of the expedition has been placed squarely on the shoulders of the leader of the expedition, Sir John Franklin, however these claims are not largely based in fact.[5] The general consensus on Franklin seems to be that he was a particularly genial man who (at least prior to his early overland expeditions) had been overweight and had

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[1]Durey, Michael. “Exploration at the Edge: Reassessing the Fate of Sir John Franklin’s Last Arctic Expedition.” *The Great Circle* 30, No. 2 (2008): p.4
[2]Durey, p.34
[3]Mays, S and Maat, G.J.R. and De Boer, H.H. “Scurvy as a Factor in the Loss of the 1845 Franklin Expedition to the Arctic: A Reconsideration.” *International Journal of Osteoarchaeology* 25. (2015) p.335
[4]Durey, p.13,14
[5]Durey, p.17-18

suffered from poor circulation.[6] Prior to his overland expeditions, Franklin seemed to enjoy making sure he got his full three meals per day and many historians have fixated on that fact rather than looking at Franklin in his later years.[7] While it is true that during his original expeditions Franklin seemed woefully unprepared at times, as can be demonstrated in the account of the first leg of his initial expeditions to the north,[8] over the 20 years following that expedition he almost certainly had grown a lot tougher, and had undoubtedly grown more experienced with the types of hardships Arctic explorers faced. Not only had Franklin acquired experience with Arctic expeditions in the past, he also had extensive experience as a member of the Royal Navy; his years of service, including commanding ships during battle, would surely have helped prepare him for the hardships that a crew might face while traveling in the harsh conditions of the north.[9]

One of they key problems that Franklin faced in leading his expedition is also of particular interest. Because of the confidence that his superiors had in the success of the trip, the orders he was given were too specific.[10] Due to the specificity of his orders Franklin did not have much leeway or choice in the direction of the expedition, and any choices that he had to make regarding altering the route or changes to the plans due to unforeseen difficulties were not anticipated or allowed for. This could easily have led to problems when difficulties arose as the decisions he was able to make were extremely limited. For example, Franklin was not allowed to separate the *Terror* and *Erebus* at any time, which as Durey points out "[although] generally a sensible precaution, meant that he could not use one vessel to explore and the other as a safe place to retreat."[11] Obviously in the latter parts of the journey North as the expedition began to hit heavy ice it could have certainly been helpful to have one of the ships free from that ice so that they could

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[6]Durey, p.18
[7]Durey, p.18
[8] Author Unknown, "Progress Of The Land Arctic Expedition, Under Lieut John Franklin, R.N." *The Times* (London, England),1821; pg. 3; Issue 11401
[9]Durey, p.19
[10]Durey, p.12
[11]Durey, p.13

fall back or send for help if needed. The main reason that Franklin was given such strict orders in the first place was that the commanding officers of the expedition in England were so confident that they knew the exact location of the northwest passage; they didn't even consider the possibility that there would be any difficulty, and they expected the trip to take only a few months.[12] There was clearly some disconnect between the confidence of the officers and the actual facts of the gruelling expedition that this would be, and that would certainly have led to problems for the crew as they began to face difficulties.

The ships that were used for this expedition, the *Terror* and *Erebus,* were two of the most technologically advanced and best supplied ships to ever be used in early Arctic exploration. Both ships had previously been used as warships during the American war, and had later been used in the James Ross Antarctic expedition from 1839-1843.[13] Extensive refurbishment had been done on both ships, with iron reinforcements, steam engines and new retractable propellers added.[14] While the updates to *Erebus* and *Terror* would certainly have been helpful, it is easy to imagine how these state of that art ships would potentially increase the already extreme sense of confidence that many had in the success of the expedition; this may have been a fatal mistake. Both ships were also very well stocked with enough supplies to to last up to five years based on Franklin's estimations, and these supplies could be drawn out to last up to seven in severe circumstances.[15] Among the forty-five tons of food brought on board were salted meats, biscuits, breads, a ration of grog and 4500 gallons of indian rum.[16] Tin cans of preserved meats, vegetables and soups were also included in the supplies as they were believed to help prevent the

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[12]Durey, p.13
[13]Durey, p.13
[14]Durey, p.14
[15]Mays, S and Maat, G.J.R "Scurvy as a Factor in the Loss of the 1845 Franklin Expedition to the Arctic: A Reconsideration." p.335
[16]Durey, p.15, and; Authors Unknown, "Multiple News Items" *The Morning Post* (London, England),1850; pg. 2; Issue 23976. (For a list of items brought on a rescue mission in 1850, the supplies brought with this expedition would have been similar to the items brought with Franklin).

effects of scurvy, with lemon juice packed for the same reason.[17] It is clear that with the abundance of supplies and the freshly updated ships the expedition would have had confidence that they would not get stuck, run out of food or have to deal with scurvy. Sadly, this confidence was misplaced.

Although both *Terror* and *Erebus* were well supplied with foods to combat scurvy, there is evidence that scurvy may have actually played a role in the failure of the expedition. The general symptoms of scurvy are swelling of the gums as well as darkening of the mouth and teeth, with those teeth eventually falling out.[18] Scurvy would often also lead to a loss of appetite and eventually, general weakening of the body and mind as the sickness became more severe.[19] With the slow deterioration of the health of the crews on both ships, daily tasks would have grown more difficult with even more pressure being placed on the few healthy individuals of the crew. Archaeological evidence is generally inconclusive regarding the possibility of scurvy among the crew as most of the evidence that is discernible from bones (all that is left of the crewmembers) can also be attributed to cases of scurvy earlier in life or other unrelated injuries.[20] However, Durey postulates that the effectiveness of the lemon juice supply that was brought north would only have lasted about a year, and that by the time the crew finally had to abandon their ships scurvy would already have been running rampant amongst the crew, with Inuit oral history also backing up this claim.[21] Although it is nearly impossible to be absolutely certain that scurvy was a factor in the loss of the crew, based on evidence it is certainly reasonable to posit that it had been affecting them for quite some time, and this would have certainly led to weakness of the crew.

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[17]Durey, p.15
[18]Durey, p.27
[19]Durey, p.27
[20]Mays, S and Maat, G.J.R. and De Boer, H.H. “Scurvy as a Factor in the Loss of the 1845 Franklin Expedition to the Arctic: A Reconsideration.” *International Journal of Osteoarchaeology* 25. (2015) p.342,343
[21]Durey, p.28

Another common idea about what caused the crew to begin slowly deteriorating is that the tin cans of food that were brought along in order to help combat scurvy contained lead and had been slowly poisoning the crew over the many months they had been at sea.[22] Elevated levels of lead found in the bones of crew members that had travelled overland (away from the ship's) support this hypothesis, with almost all the bones found having levels of lead content inconsistent with other people from that era and area.[23] It seems clear that these high levels of lead were likely caused by the cans that we know were brought along on this, and many similar expeditions from the time period. The effects of lead poisoning are exactly the type of challenges that would cause trouble in the highly dangerous circumstances of Arctic travel. The symptoms of lead poisoning include muscle fatigue,weakness, depression and eventually memory loss.[24] Similar to scurvy, anyone suffering from these symptoms would need the healthier members of the crew to pick up the slack; this would result in slow deterioration of the overall health of the crew. The crew's ability to perform the daily tasks necessary to keep things moving smoothly would have been seriously hampered. Due to the abundance of evidence that we have regarding the possibility of lead poisoning, it is evident that at least some members of the crew would have been suffering symptoms, and this would have been a leading factor in the deaths of many crew members.

By September 1846, both *Terror* and *Erebus* had become stuck in ice. This was unusual for the time as September was generally considered a month in which sailing was still safe as the waters were typically still warm enough.[25] From one of the only written pieces of information about the latter portion of the expedition we know that all was well up until May 1847. At this point,although the ships were stuck in ice, the crew was still relatively healthy and the officers

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[22]Durey, p.26
[23]Keenleyside, A., et al. "The Lead Content of Human Bones from the 1845 Franklin Expedition." *Journal Of Archaeological Science* 23, no. 3 (1996): 464
[24]Durey, p.26
[25]Durey, p.23

were not concerned.[26] However, according to a second note added to the same document, within eleven months nine officers of the crew including Franklin himself and twelve sailors had died.[27] We can only speculate as to the precise cause of death for each of those twenty-three men, but from the evidence we have it seems likely that a combination of lead poisoning and scurvy would have been leading cause of these early deaths, as the men would almost certainly been overworked and exhausted trying to break the ships out of ice. In April 1848, low on food and lacking many of the commanders they had originally set out with, the crew decided to abandon both ships in the ice in a desperate attempt to walk over 650 miles to the nearest Hudson Bay Company outpost.[28] By this time the remaining sailors would almost certainly have been suffering from scurvy (if they had not already been affected) and with food supplies running low and limited to the amount they could carry from the ship, the remaining sailors turned to desperate measures.

Archaeological evidence, also supported by Inuit oral histories from the time indicate that toward the final leg of the overland journey members of the expedition turned to cannibalism as a last hope of survival.[29] By this time the crews would have been extremely weakened, not only from the desperate march south, but also from rampant sickness and starvation. In this light, it is unsurprising that the members of the crew became desperate enough to resort to cannibalism. It has been well documented that desperation has led to cannibalism several times in history.[30] While we can, with nearly one hundred percent certainty, say that cannibalism occurred toward the end of the expedition, the question of whether the crew had engaged in end-stage cannibalism is also important. End-stage cannibalism is the act of the breaking of bones in order to extract marrow, one would assume that this would only ever be seen in the most desperate of

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[26]Durey, p.23
[27]Durey, p.23
[28]Durey, p.29
[29]Mays, S. and Beattie O. “Evidence for End-stage Cannibalism on Sir John Franklin’s Last Expedition to the Arctic, 1845.” *International Journal of Osteoarchaeology* 26. (2016): 778-786; for Archaeological evidence. and; Durey p.31 for Inuit confirmation of cannibalism on the expedition.
[30]Mays, S. and Beattie, O p.779

circumstances, and evidence suggests that end-stage cannibalism did occur in this case.[31] Broken bones were found at several sites along the route the explorers would have taken, which on their own would not be conclusive enough evidence. However, these bones show signs of knife marks and, more importantly polishing of the bones from placement in boiling water, that confirm bone fragments were intentionally broken and boiled as a means of marrow extraction.[32] Cooking apparatus found along the route are also of the correct size and shape to indicate that the bones were broken to an appropriate size that they would fit within these vessels. The evidence of not only cannibalism, but end-stage cannibalism indicates that the final members of the crew to perish likely died of starvation and exhaustion after abandoning their ships, a fruitless effort, but perhaps the only chance of survival they had left.

Though it is impossible to be absolutely certain of what occurred to cause the deaths of many members of the expedition and the eventual abandonment of the *Erebus* and *Terror*, there are many clear signs that point to the likely causes of this tragedy. Contrary to many popular theories, the blame should not rest on the shoulders of Franklin himself. Though a better commander could have made different decisions, it is cleari that with the explicit orders given to him, and the overconfidence that was shared by those planning the expedition, it would have been likely to fail regardless of the commanding officer. Although both ships were well stocked with supplies, and were very technologically advanced for the time, this likely led to overconfidence on the part of the commanders both with the expedition and back in Britain. Despite the fact that sailors during the era were fully aware of the effects of scurvy, doubt remains about whether the countermeasures they employed were fully effective in actually preventing the sickness, and it seems likely that the tin cans of food that were supposed to help prevent scurvy had actually

[31]Mays, S. and Beattie, O p.779
[32]Mays, S. and Beattie, O p.779,783,784

resulted in lead poisoning. Lead poisoning and scurvy are likely the primary causes of the slow deterioration of health in the crew which eventually led to them being unable to escape from the unforgiving ice. As soon as they became stuck it seems that there was almost certainly no way to escape short of the ice melting, and unfortunately the ice did not melt. With rations running low and sickness throughout the crew, they tried for one desperate overland push to safety, but sadly came up short and died of starvation not long afterward. The exact occurrences onboard the final Franklin expedition will likely always remain a mystery, with little historical data to learn from and only small amounts of archaeological evidence to learn about the health of the crew. Despite this fact it seems clear that unless some other information comes to light, a very good idea exists of what caused the expedition to fail so horribly.