Rivalry and Cooperation: Julius von Haast's Influence on the Otago Museum

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Although not directly responsible for building the Otago Museum or its collections, Sir Julius von Haast (1822–1887) exercised a surprising influence over Dunedin. From surviving correspondence in scattered archives, it is clear that the relationship between the Canterbury and Otago Museums was complex. Haast and his contemporaries collected museum specimens to fill their respective cathedrals of science at a time when museum building was a global enterprise.

The first Otago curator, Captain Frederick Wollaston Hutton (1836–1905) had a love-hate relationship with Haast through the 1870s, but called on him to help the southern museum in a variety of ways. For instance, by trading specimens, by sending Otago's taxidermist to learn from Andreas Reischek (1845–1902) and by providing information on opening hours. Hutton fomented interprovincial rivalry between the provincial councils in a more-or-less successful attempt to get the Otago bureaucrats to provide funds. He copied Haast's approach with his successful exploitation of moa bones from Glenmark Swamp when a similar stash was found not far from Dunedin. Hutton argued with Haast over some of his ideas to the exasperation of the older man.

The second Otago curator, Thomas Jeffery Parker (1850–1897), was less argumentative and sought Haast's help with selling specimens at the Indian and Colonial Exhibition in 1886 when Haast was the commissioner. Parker used an innovative technique to preserve cartilaginous fish and internal organs of various mammals. Haast sold fish and invertebrates preserved by this technique to natural history museums in London and Dublin, where they remain, proving that both Dunedin and Christchurch were part of a flourishing global trade in natural history specimens.

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There have been rivalries between Dunedin and Christchurch, the two major towns in the South Island, since the days of permanent European settlement in the 1840s. For example, Scottish versus English, Presbyterian versus Anglican, and it continues today through most sporting codes. Such interprovincial rivalry was as useful to the early museum builders in both cities as was cooperation.

When the Otago Museum opened its new building in August 1877, Dunedin people were enthusiastic and proud of the achievements of curator Captain Frederick Wollaston Hutton (1836–1905) and his taxidermist Edwin Jennings (1835–1910). Reporters had been allowed glimpses during its construction but were overwhelmed by the exhibits on opening day: "the eye is literally bewildered with the superb collection of birds of all countries and climes" (*Otago Witness*, 18 August 1877: 7). It had taken just over 10 years to reach this point. The first set of collections, largely minerals and rocks labelled and designated for the Otago Museum, had been put into storage after the Dunedin Industrial Exhibition held in 1865 (Crane 2017). These minerals and rocks were used by eager gold prospectors, other explorers and surveyors to compare against their finds. As soon as Hutton was appointed curator in 1873, he asked for help from Julius Haast (1822–1887) who was able to supply specimens without depleting his own store. The recently re-discovered earliest register has revealed that Haast sent two consignments of bird skins in 1873 comprising 32 British and 27 other bird skins (of unknown origin), and later in 1876 a further 12 New Zealand bird skins (Otago Museum Archive

1868–1892). Thus, some of the earliest natural history specimens in the Otago Museum had come directly from Canterbury. Hutton also wrote to a friend in London, who was in a position to facilitate exchanges and explained he wanted a comprehensive collection "for teaching Natural History, and not a peep show of birds—sponges, corals, Echinodermata, crustacea &c, also reptiles, fishes, and mammals, all are wanted" (Hutton 1874a). But the bird collection, with Haast's contributions, that so bewildered the eye was indeed a peep show of birds.

From the outset Hutton single-mindedly stuck to his scientific aim to produce lists of fauna. It harkened back to an earlier period of exploration when the Eurocentric world imposed order on the mass of new-to-them flora and fauna, and to the emergence of the professional naturalist (Farber 2000). New Zealand, full of unique and largely unknown creatures, presented challenges to the systematic naturalist, and even today our knowledge is scattered and fragmentary. Hutton, who was an all-round naturalist, was by his own admission "fond of geology and natural history, [and was] so anxious to get employment in the scientific line" (Hutton 1866). His appointment as curator at Otago Museum seemed to fulfil his dreams as he was able to direct his own work. "One of the principal objects of the catalogues that I am bringing out is to supply [in] a cheap form the names of our animals". He wrote to Haast that he had already "worked up" the Echinodermata [starfish and allies] and was hard at work on the shells:

> *I expect to begin on the fossils next month, but don't let that hinder you from describing any also. I should only be too glad to have them all named as it would save me at any rate from innumerable mistakes. But it must be done unless we are to stick fast just were* [sic] *we are, so I have made up my mind to fire away and to bear calmly all the abuse I shall get from European naturalists who don't understand our reasons to pushing ahead* (Hutton 1872).

It is not clear what abuse he expected but the egotistical tone of the letter is typical. Hutton seemingly had little patience for people who did not share his work ethic. He produced a series of catalogues that culminated in the grandly named *Index Faunae Novae Zealandiae* published in 1904 (Hutton 1904).

Moa Bone Exchanges

The story of how Haast sold moa bones to fund the development of the Canterbury Museum is well-known. How he acquired moa bones from Glenmark swamp in 1866 was told by Haast himself some years later when he gave a presidential address to the Philosophical Institution of Canterbury (Haast 1881). The finds were numerous enough to allow Haast and his taxidermist Frederick Fuller (1830–1876) to articulate seven complete moa skeletons. The mounts were displayed in Canterbury Museum while Haast sold or exchanged other bones through his personal networks. The story has since been told on several occasions; in the nineteenth century by Walter Buller in his *History of the Birds of New Zealand* (Buller 1888: xxv), then several times through the twentieth century including the account by his son in the biography of his father, *Life & Times* (Haast 1948: 480–489). Later his museum and moa bone story featured in international perspectives on the historical significance of Haast's museum building activities (Sheets-Pyenson 1988: 1, 83; Barton 2000; Mackenzie 2009: 217–219; Berentson 2012: 146–151). And most recently Canterbury Museum's 150th commemorative volume added a brief summary (Beattie et al. 2020: 7–8).

The story of how Hutton exploited the smaller deposit of moa bones from Hamilton's diggings, near Ranfurly in Otago's goldfields, is not so well known. Hutton undoubtedly copied Haast's successful exploitative methods and, like Haast, kept several complete skeletons back for display in the museum (Fig.1). Shortly after the transport of bones in a wagon to Dunedin, Hutton wrote excitedly to Haast:

> *You will be delighted to hear that I have got a large collection of moa bones from a swamp at Hamilton's diggings on the Taieri. I don't know what there will be yet, but the place is just similar to the Glenmark swamp and the known hole full of bones is larger than the one you got yours out of* (Hutton 1874d).

A month later Hutton was keen to exchange items with Haast: "I shall be able to send you some vertebrae and the two bones of *Cnemiornis* [a large extinct goose] presently but … I have no room to sort out my things and a great deal too much to do" (Hutton 1874c). One of the things he had to do was exploit his moa bones. Hutton sold and exchanged his moa bones through a different network of contacts to that of Haast. Haast swapped specimens with his German-speaking colleagues, including Louis Agassiz (1807–1873) Director of the Museum of Comparative Anatomy at Harvard University, Ferdinand Mueller (1825–1896) Director of the Royal Botanic Gardens, Melbourne and Gerard Krefft (1830–1881) at the Australian Museum, Sydney. In contrast, Hutton used British contacts.

Hutton's first exchange using moa bones as currency involved Liverpool Museum. Thomas John Moore (1824–1892), the founding Director of the Liverpool Museum, enthusiastically embraced Hutton's proposal to swap moa (Greenwood 1980). "The *Dinornis elephantopus* in particular will be a most desirable acquisition", Moore wrote, and cautiously offered some mammal skins including lion, leopard, guanaco, tayra, a young harp seal (with skull) and both a West African civet cat [genet] and Indian civet [palm civet] (Moore 1874). But the largest tranche of moa bones

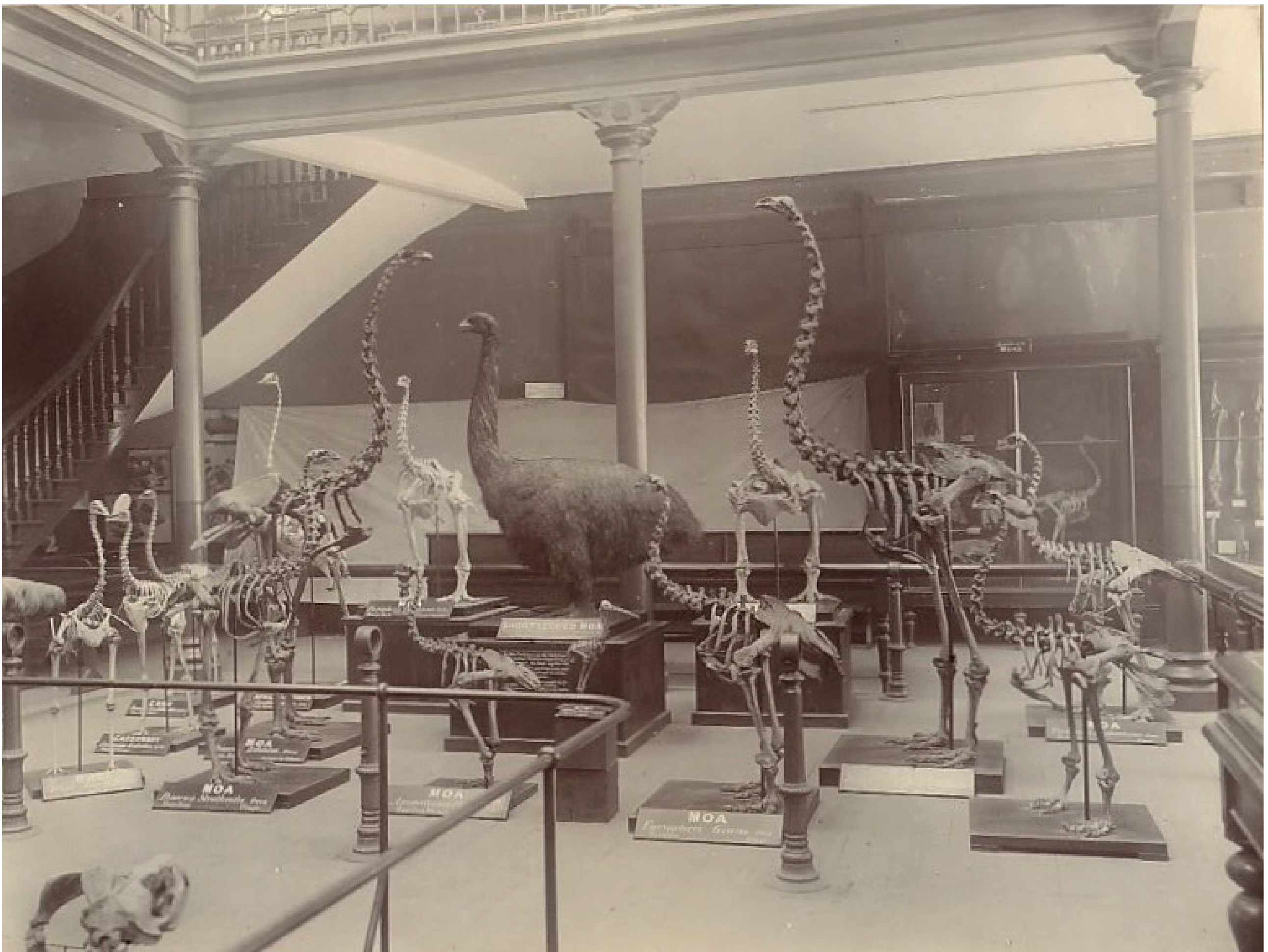

Figure 1. Collection of mounted moa skeletons and other flightless birds, including kiwi, cassowary, and ostrich in the Otago Museum. The model was covered with emu feathers. Photo taken about 1908 by unknown photographer. Otago Museum Archives P250-27

was sold to the London-based dealer Gerrard & Sons, who valued the consignment at £50, and in return sent about 20 mammals to Dunedin. These included an indri, a jaguar, and several squirrels, all of which survive on display in the Animal Attic and a saiga antelope, which has not survived (Gerrard 1875) (Fig. 2). Edward Gerrard (1832–1927) asked for further New Zealand birds if Hutton had duplicates that could be spared but added a cautionary note, "I do not want bird skins unless something very uncommon" (Gerrard 1875). Gerrard maintained deals with a variety of New Zealand suppliers including other ornithologists and also with London Zoo who supplied carcases to the dealer. By 1879 Gerrard noted that the market was satiated with Little Spotted Kiwi: "there has been so many *Strigops* [Kakapo] & *Apteryx owenii* [Little Spotted Kiwi] skins & skeletons sent here lately that there is now no sale for them." However, he still wanted the rarer Southern Brown Kiwi and wrote to Haast "if *Apteryx australis* could be sent me at £1 each I would take 6 skins and 6 skeletons" (Gerrard 1879). Haast and Hutton competed for attention from the dealer as such exchanges meant both parties had a clear understanding of the value of the specimens under negotiation.

Hutton sent some moa bones to University College Aberystwyth, Wales, in answer to a plea from lecturer of geology, Frederick Rudler (1840–1915) who was dismayed to discover he could not match the deal. Rudler had expected a box of specimens to the value of about £15 and regretted he "cannot make up a collection of Welsh fossils of anything like this value. Fossils hereabouts there are none and [only] in [a] few parts of Wales are they at all abundant" (Rudler 1878a). Rudler did his best and managed to send over 300 fossils including "Cambrian & Silurian fossils [which] are very difficult to get here and we prize them ourselves very much … and only regret that they are not more numerous" (Rudler 1878b). Hutton made no comment when they arrived in April 1879, so it remains unclear whether he thought the deal a fair one, he simply recorded "a collection of Welsh fossils" in the register. But we cannot read too much into such a superficial entry in the records, it was common practice to simply record "a collection of", or "some", or for example "25 fishes" without any further details.

Otto Finsch (1879–1913) was a well-travelled ornithologist who supplied all of New Zealand's major museums with bird skins. In June 1872, Finsch sent the President of the Otago Institute two boxes of birds containing 77 specimens comprising 20 stuffed and 57 study skins (Finsch 1872). Only eight birds listed by Finsch from this consignment can be positively identified among the current holdings of the Otago Museum. Given the large number of Finsch specimens in the museum this seems surprising, but it is unclear how many were originally destined for Otago. "One case is destined for Dr Haast in Christchurch and one for … Auckland being objects of exchange with the museums in those places" (*Daily Southern News*, 27 November 1872: 7). Just over half of the birds were caught and prepared in Bremen, northwest Germany where Finsch was curator of the local museum, the rest resulted from his travels. Finsch sent a second large consignment of 375 birds which Hutton registered in March 1875 (Otago Museum Archive 1868–1892). This large collection of mostly European birds prompted Hutton to write to Haast about exchanges: "I will send you skin for skin — I do not want any European birds, nor those of Australia except the waders & water birds, or anything rare" (Hutton 1874d). Hutton's glut of Australian birds came from Eli Waller (d.1881) a bird shop owner and commercial taxidermist in Sydney, who had formerly worked at the Australian Museum and had sent a consignment of 50 skins (Waller 1875). Pacific birds came from Sir George MacLean (1834–1917) a banker, treasurer of the Otago Provincial Council and Director of the Union Steam Ship Co. who had donated a large collection of bird skins, shells and other marine life from his travels throughout the South Pacific. Hutton explained to Haast that among the collection there were "a lot of duplicates in spirits which I am sending to Finsch" (Hutton 1874e).

Figure 2. Indri lemur (*Indri indri*) acquired in 1875 in part exchange for consignment of moa bones with Gerrard & Sons, London and valued at £7.0s.0d. It was packed as a taxidermied mount rather than as a skin. Otago Museum OMNZVT2384

Exchanges between naturalists were sometimes tense and misunderstandings easily arose. Hutton, it should be noted, was a pedant, inclined to argue and be outspoken, all personality traits that sometimes prevented him from working smoothly with colleagues: “he is often too pungent a critic to please those from whom he differs in opinion” (Thomson 1885). His relationship with Haast mirrored this critique and an initial exchange over penguin skins broke down quickly:

> *Unfortunately I cannot say what is a fair money value for the different skins, as I have no experience in valuing. Before I sent the penguin to you you wrote to me and said that you wouldn’t give me more than two dozen of your duplicate foreign birds and some NZ birds for it,… but if you like to return me the penguin I shall be very happy to send you 32 other skins back again.*
>
> *I am sorry that your trustees do not consider the exchange satisfactory. It is certainly not so to me.* (Hutton 1874f).

This particular misunderstanding was quickly resolved. Hutton conceded that in future such exchanges should be agreed “before hand what each are to send and then there will be no disappointment.” (Hutton 1874d). This example demonstrates Hutton’s ability to rub people up the wrong way. Later, when Hutton was established in Christchurch, his difficult personality led Haast to step away from the Philosophical Institute: “as long as Hutton is President I will not have anything to do with it, as I want peace” (Mildenhall et al. 2013: 3).

The monetary value of Hutton’s moa bones was obvious to him straightaway as he wrote to Haast, “it will be the making of this museum, and they will have now to put up a building” (Hutton 1874b). The “they” that Hutton referred to were the members of the Otago Provincial Council, who were now goaded to action. The pro-museum members of the Council played the card of inter-provincial rivalry, for without a suitable building “they were behind the neighbouring Province of Canterbury. The building would probably cost about £5000, and it was proposed to erect it at the north end of the town.” (*Mount Ida Chronicle*, 12 June 1874: 2). In July 1874, Hutton, keen to make amends over the earlier acrimony about the penguin exchange, wrote to Haast, “I am delighted to hear of your £14,000 [for a new building] for it does me all the good in the world getting moving here”. Hutton’s admiration was tinged with rivalry and he continued, “I cannot hope to compete with you in buildings or foreign collections, but I shall do my best to beat you in New Zealand collections” (Hutton 1874g). Work began on the new building during 1875 as Hutton and his taxidermist Edwin Jennings prepared the specimens for display.

Financial Precarity

The campaign to abolish the provincial system of governing reached a head during 1876. As the new reality sank in, a public meeting was called in Dunedin and it became clear the half-built museum and its ongoing finances would be adversely affected (*Otago Witness*, 19 August 1876: 6). The Otago Provincial Council was criticised for not acting years before to acquire a similar endowment scheme to Canterbury, and it was now too late. The New Zealand Government had granted 100,000 acres of land to the Canterbury Provincial Council with the proceeds from rents to form an endowment to be used for maintenance of the Canterbury Museum (*Bruce Herald*, 15 August 1876: 5). With justification Hutton was worried about the future financial stability of the Otago Museum and confided to Haast, “I am rather doubtful as to how our museum & myself will get on after the abolition of provinces as we have no endowment. You are all right” (Hutton 1875). Inevitable delays in the building process occurred and in mid-1876 Hutton was despondent. “My collections are increasing very fast, but the building goes on very slowly,” he wrote to Haast, “at present there is a stoppage, a contractor for iron

work having thrown up his contract. The walls are not quite half up yet. There is very little chance of its being open to the public before a year's time" (Hutton 1876). Nonetheless Hutton was envious of the situation in Christchurch and wrote to explain his attitude:

> *It is all very well for you to say that we should not talk about having the best museum for you are endowed and safe. But it is necessary for me at present to work on the rivalry between the provinces to get something done. You must not mind it, there is really not a particle of jealousy in it. It is only a dodge for raising the wind, and as soon as this museum is safe it will end. There would have been no Museum in Dunedin if you had not just started one in Christchurch* (Hutton 1876?).

By September 1876, however, things began to look up. The Government agreed that the University of Otago should be administratively responsible for the upkeep of the museum and allowed rental income from a high country sheep station to fund its running expenses (Otago Museum Archive 1873–1878, meeting dated 5 September 1876). Thus, with its immediate future assured Hutton turned his full attention to filling the museum. By May 1877 he was frantically busy and had to forgo a visit to Christchurch for the opening of Haast's new exhibition: "it is impossible [to leave Dunedin], … I am also just commencing to put up some skeletons in the Hall of the Museum. We are in a dreadful mess at present, but things look as if they would get straight soon" (Hutton 1877a). Hutton was still frustrated: "there are no end of delays in finishing the fittings but I hope to open by 1st September" (Hutton 1877b). Hutton was a little out in his estimates as the Otago Museum opened in August at its Great King Street site where it remains.

The subject of Sunday opening raised its head and Hutton sought advice from Haast. In Dunedin, a town still dominated by Scottish Presbyterians, Sunday was set aside for worship and the rational entertainment that a visit to the museum offered was frowned upon. He wrote to Haast seeking clarification about Canterbury's opening hours:

> *I am in favour of opening from 2pm to 4pm on Sunday but one of our committee is against it & objects on the supposed fact that it has been a failure in Christchurch, and that your museum is only used on Sundays by fashionable loungers* (Hutton 1877c).

Haast confirmed that Sunday opening was worthwhile as Hutton wrote a week later, "the information about your museum was just what I wanted – it will enable me to have ours opened on Sunday" (Hutton 1877b). This did not please some of the clergy who felt Sunday should be a day of rest, that opening the museum was unnecessary and would lead to further secularising of the Lord's Day (*Otago Daily Times*, 22 August 1877: 2). It was left to the newspaper columnist, Civis, to proffer the final advice to Hutton over this storm in a teacup: "his best plan will be to treat everything of this sort with the contempt it merits" (*Otago Witness*, 18 August 1877: 13).

Taxidermy Help

In March 1877, Hutton met Andreas Reischek at Port Chalmers who had just arrived in the colony. A renowned Austrian naturalist, Reischek had left Vienna after only a year in business as a taxidermist to take up the vacant position in Canterbury Museum. Reischek had a large job ahead of him, 30 chests of skins and skeletons awaited his skills (King 1981: 30, 36). Reischek had a totally different way of mounting specimens to Hutton's conservative approach and explained, "I placed two grizzly bears before a cave (canvas) clawing at a dead antelope, while from a rock above a lynx and a condor looked greedily down on this vanishing prey" (Haast 1948: 796). Hutton did not approve, yet he acknowledged Reischek's skill. "I think that you have got a treasure in Reischeck

[sic]," he wrote to Haast at the beginning of May, "and [I] am surprised that he should come out for so small a salary" (Hutton 1877d). Later that month Haast offered Reischek's services to Hutton but Hutton was unable to take up the offer: "I am afraid I shall have to decline it". He had no money but more importantly "there is no room in our museum for groups, which appear to me to be better adapted to an Art Gallery than to a Natural History Museum" (Hutton 1877a). Yet later when Haast and Reischek needed specialised help with the preparation of an elephant Hutton readily agreed to send Jennings:

> *Jennings is delighted at the idea of coming up to help Reischeck [sic]. … He will take up the skin of* Saiga tartarica*, … which, after the elephant is finished, he can (if you have no objection) stuff under the eye of Reischeck [sic]. It is a lesson in stuffing deer that I want him to have most* (Hutton 1877e).

The saiga antelope had been part of the consignment from Gerrards in exchange for Hutton's moa bones.

1879 proved an important year for Hutton and by mid-year he appeared settled. The museum attracted visitors including John Enys, an immigrant Cornish-man who ran a sheep station in Canterbury, and was a well-rounded naturalist who supported Haast in his endeavours. Haast wrote seeking Hutton's help with information in preparing an exhibition of moa bones for the International Exhibition at Sydney, and wrote, "I was very glad to hear from Enys who enjoyed his visit to your Museum very much, that you are comfortably installed in your new house & that you have now plenty of elbow room" (Haast 1879). But in December Hutton suddenly left Dunedin: "I have been transferred to Canterbury College to take Powell's place. We move to Christchurch in January" (Hutton 1879). The language he used remains puzzling. 'Transferred' is a curious choice of word, implying the decision may not have been Hutton's alone although that seems unlikely. There is no other evidence one way or the other to explain his sudden departure. However, he left behind a museum that had been built as a conscious response to inter-provincial rivalry fomented by Hutton. Many specimens had originated from Haast's generosity. Like other museum curators in the late nineteenth century both Hutton and Haast utilised a system of acquisition based on exchange and worldwide trade (Ville 2020).

Parker & Haast 1880s

Haast's involvement with the Otago Museum continued when Hutton's replacement, Thomas Jeffery Parker (1850–1897) arrived in mid-1880. Parker, a committed evolutionist, had spent the previous 8 years working in London for biologist Thomas Henry Huxley (1825–1895), better known as 'Darwin's Bulldog'. Parker responded to a letter from Haast, "thank you very heartily for your kind letter of welcome … I shall be very glad of the antelope skin & still more grateful if you can at any time spare in spirit specimens of Monotremes, Marsupials, or Amphibians" (Parker 1880a). The relationship between the two men was harmonious and respectful, for instance, Parker asked Haast if he had "a few insect pins of various sizes? We are quite out of them now" (Parker 1881a). They swapped scientific information frequently but after an exchange of correspondence both declined to be involved in an expedition to find living takahe in remote Fiordland (Parker 1882). Again in 1884, Parker asked for Haast's assistance. He wanted information on the location of breeding colonies of tuatara because he had received a grant from the Royal Society in London to investigate their embryology and needed eggs in different stages of development (Parker 1884a). Parker's museum exhibits were driven both by his own research on evolutionary embryology and by the needs of teaching courses in comparative zoology for both zoology and medical students for whom such lectures were compulsory (Crane 2020). Parker was not interested in Hutton's kind

of systematic inventory science and only wrote papers describing new species when opportunity arose (Parker 1880b; Parker 1883).

The character of the museum displays changed from Hutton's unwanted but accurate description of a "peep show of birds" towards displays featuring innumerable skeletons described accurately as a "mania for skeletons" ('Our Dunedin Letter' *Tuapeka Times*, 15 February 1882: 5). Each nineteenth-century museum curator wanted his own iconic animals, for Haast it was a room full of mounted moa skeletons. And while Otago had some moa too, they never quite achieved the status of Haast's extinct birds because they were not the first to be displayed in the country. Large specimens filled the criteria for iconic animals and whales certainly fitted this category. Hutton had mounted a right whale skeleton on the floor of the museum where it remained for decades until it was dismantled and put into storage. Finally in 1940 it was sent to Southland Museum in Invercargill to become an iconic attraction there (Skinner 1941).

Parker's iconic exhibit came in the form of a large fin whale skeleton he acquired in 1883. He wrote to Haast:

> *We are now mounting a skeleton of what I take to be the same species [as yours] … It is in very good condition except that a portion of caudal vertebrae were thrown away with the flukes and many of the phalanges are lost. …The baleen is in beautiful condition, & the skeleton altogether will be a very fine one. It is to be slung from iron girders supported by the columns. What size is your specimen? Mine is 54ft 6ins* (Parker 1884b).

Friendly teasing and rivalry between Otago and Canterbury continued. The whale had stranded at Nelson, and Captain William Jackson Barry (1819–1907) had it de-fleshed and cleaned, then carted it around the South Island giving lecture tours. The whale became a source of entertainment. By June 1883, he set it up in a warehouse in Dunedin where it was an attraction for a couple of months. But by the middle of August, a one-sentence newspaper report recorded that "Captain Barry has disposed of his whale skeleton to the Otago Museum" (Star, 16 August 1883: 3). And so, Captain Barry's whale became Professor Parker's whale and in so doing became a source for serious study (Crane 2015). Parker wrote a detailed description of the whale for the *Transactions and Proceedings of the New Zealand Institute* that included measurements of all the bones (Parker 1884c). Parker's published account hides his anxieties and angst. In a letter to W H (William) Flower, Director of the Natural History Museum in London, he wrote:

> *I send with this a photograph of the Museum showing a skeleton of* Balaenoptera *I had put up some time ago. I feel a little uncomfortable about the (artificial) pelvic bones, which are modelled from a figure of Haast's. Ought they to be reversed!* (Parker 1886a).

On the face of it, the Otago Museum and its fin whale played second fiddle to Haast's Canterbury Museum. But in fairness Otago never had the resources of its northern rival.

Cartilaginous Fish

Parker was resourceful and developed a new technique for the preservation of cartilaginous fish. This made a mark on the international museum world and was cited on his certificate of election to fellowship of the Royal Society of London in 1888 (Royal Society Archive 1888). Among the proposers signing from personal knowledge was Haast who had good cause to understand the effort involved. Haast was appointed Commissioner of the Indian and Colonial Exhibition held in 1886 and was in little doubt about Parker's contribution to the success of the venture. Parker

undertook to provide a large collection of the "principal food fishes to be found in New Zealand waters" (Star, 10 November 1885: 4) and sent off a large collection to Haast in 1885. "The collection now sent," he wrote, "includes 43 stuffed fishes, 99 fishes in alcohol, four cartilaginous and four bony fish skeletons, mounted octopus & 7 or 8 crustacea, & group of tuataras & mutton birds" (Parker 1885). The most impressive of this collection was the preserved skeleton of a great white shark. Including this amongst the specimens allowed Parker to show off his innovative preservation technique using hot glycerine to impregnate the tissues (Parker 1881b). The method was long-winded, expensive, messy, and involved a series of processes. These included putting the soft parts in methylated spirits for two to three weeks which hardened them. The specimen was then transferred to a glycerine fluid for another week, before being placed in melted glycerine jelly at about 40°C for two to four days. Finally, the specimen was drained and stretched across a made-to-measure trellis to dry for several weeks, and, when the surface was no longer sticky, two or three coats of varnish was applied. Consider the effort involved in dealing with zoological specimens, the experimentation that went on, the space required for numerous animals in various stages of processing, the patience for a week's worth of effort for what was an uncertain outcome, and the constant maintenance of the processes by Parker and his staff. It is an aspect of collecting natural history material often overlooked, a point that historian Samuel Alberti makes in discussing what happens to specimens once they arrive at the museum (Alberti 2009: 123).

New Zealand newspapers reviewed the whole Indian and Colonial Exhibition and gave parochial pride of place to the New Zealand Court. Haast's scientific approach was noted with approval: "…[he has] obtained for New Zealand a more scientific character than any other Court in the Exhibition" (*Star*, 18 March 1887: 3). An anonymous reviewer for one of the English magazines pinpointed Parker's efforts: "the Otago University Museum is an important contributor, and visitors and experts alike will admire the very beautiful specimens of cartilaginous skeletons" (Anonymous 1886). Haast organised a lucrative sale for Parker and sold a substantial part of his fish collection, including the shark, ribbon fish (Regalecus) and other specimens to William Flower for a total of £203/0/3d (Haast 1886a) (Fig. 3). At the same time Dublin Natural History Museum bought the octopus, the skeleton of a lamb, and some stuffed birds for £35 0s 0d (Haast 1886b; Parker 1887a). Parker had expected higher prices. "I think Flower has got a bargain with Carcharodon [great white shark] etc. but I would far rather let him have them at a smaller price than I expected than have them returned" (Parker 1886b). Nevertheless, he was grateful to Haast: "I am very glad to hear that so many of my exhibits have gone off" (Parker 1886c). Parker put a different spin, however, on his thank-you letter to Flower: "I am very glad to hear that you have decided to take some of my specimens, both my assistants & I feel quite proud at being represented in the National collection" (Parker 1886a). Parker could not disguise his emotional investment in the sale. He thought highly of his glycerine method as did Flower when he initially encountered the cartilaginous fish at the exhibition. Haast wrote to Parker, from London during the exhibition, "your work is very much admired & Prof. Flower told me the other day, that it was funny that they had to come to an Antipodean court to learn something" (Haast 1886c). By the time the exhibition closed in November, however, Flower had lost confidence in Parker's process. Haast wrote to Parker, "considering that the skeletons were constantly losing the Glycerine, I think I did very well. I saw Prof Flower this very afternoon as he explained his doubts of the skeletons keeping for any length of time" (Haast 1886b). Parker promptly reassured Flower:

> *I don't think you need be under any apprehensions as to the permanency of the glycerine jelly process …. If a really impervious coat of varnish could be given to the whole specimen I [am] certain there would be no more trouble at all* (Parker 1886a).

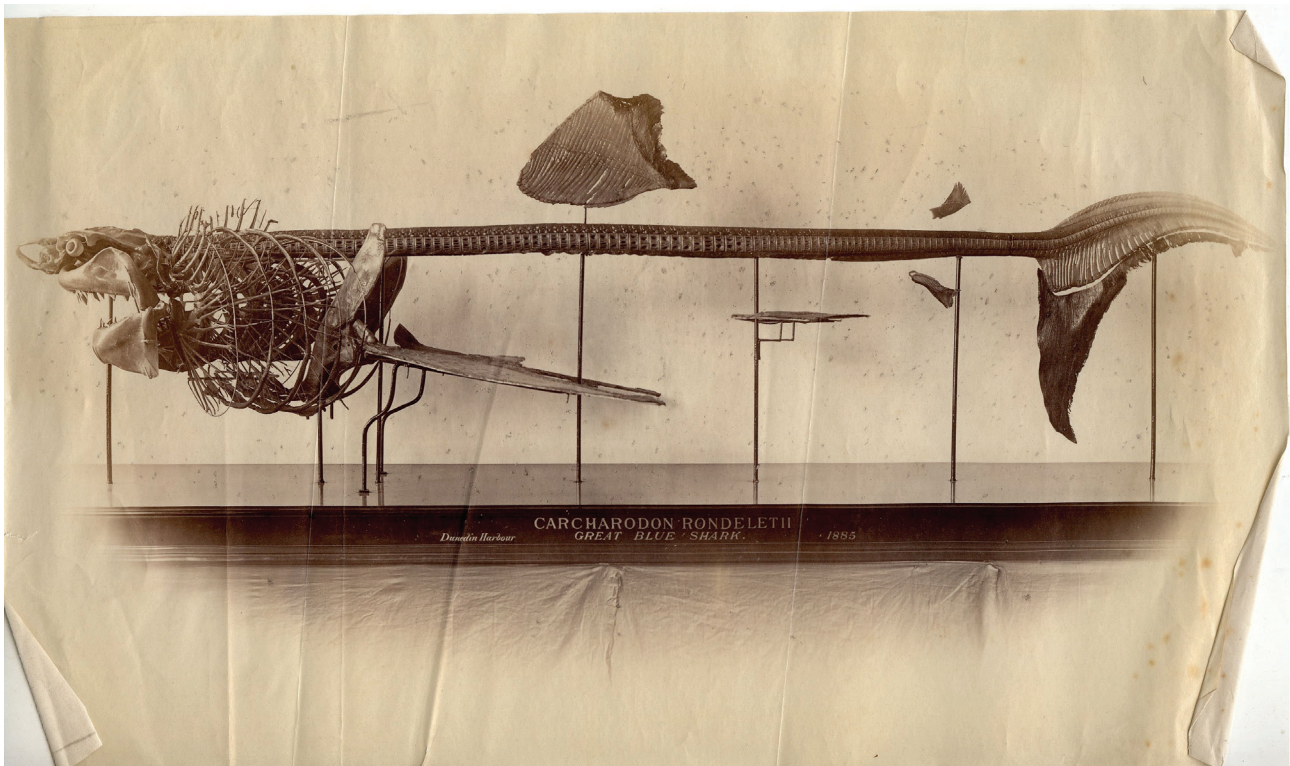

Figure 3. Skeleton of great blue shark (*Carcharodon rondoletii*) preserved by Parker's hot glycerine method. Exhibited at the Indian and Colonial Exhibition, London and sold as part of consignment by Haast with a total value £238/0/0d. Unknown photographer. Otago Museum Archives P465-25

Four months later, in March 1887, Flower by now happy with his purchase, wrote to Parker:

> *your shark is safely lodged in … the Museum. When I removed it from the Exhibition it was in a sad state … all flabby and dripping. But after a month or two in the dry air of this place, it quite recovered* (Flower 1887).

The total £238 that Haast raised for the Otago Museum needs to be put into perspective as it was a considerable sum; Parker's museum salary was £300 per year (with an extra £300 as professor, plus fees from students) (Hamilton 1894).

Haast returned to New Zealand in 1887 and Parker wrote to welcome him home, "I was very glad to hear of your safe arrival & that your health was improved. I sincerely hope there will now be no more sciatica or other troubles" (Parker 1887b). Sadly, this letter was written just a few days before Haast died at his home in Christchurch on 16 August. An obituary in *Nature* explained Haast had overtaxed himself organising the exhibition and "travelling while in weak health" and had died from heart disease ([Lockyer N] 1887). Haast had had a considerable influence on Otago Museum during its formative years, whether by supplying specimens, enabling the taxidermist to upskill, or by being an agent in the sale of specimens. He had also proffered advice and scientific support to both fellow curators, Hutton and Parker. All three men were an integral part of an extensive worldwide trade in natural history specimens, the scale of which is only just becoming apparent (Finney et al. 2022).

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