

LINDA TYLER

Moa hunting in the Transactions: the battle for science's high ground in nineteenth-century New Zealand between Julius von Haast, Alexander McKay and John Buchanan

Abstract

Publishing its *Transactions and Proceedings* from 1867, the New Zealand Institute quickly established orthodoxies of what local science was and how it should be conducted. The role played by Māori in the extinction of the moa, a giant extinct flightless bird, predominated in the wake of Richard Owen's classification of the *Dinornis* from a single bone in 1839. New Zealand men of science asserted their intellectual autonomy by producing lists of moa species and by developing theories on the relationship between moa bones and excavations of pre-historic Māori sites. Key to this activity was the visual representation of the moa, developed by John Buchanan for the *Transactions*, through using photography to document skeletons articulated by Julius von Haast for display in the Canterbury Museum. However, Buchanan's attitude to von Haast was affected by the way in which the Canterbury Museum Director appropriated the work of Buchanan's colleague on the Geological Survey, Alexander McKay. This "Sumner Cave Controversy" has been previously analysed for the racism inherent in the description of Māori, and the creation of the now-discredited "Moa Hunter Period" in New Zealand history. This paper will focus instead on analyzing the role of publication of illustrations and descriptions of new species in the *Transactions* as a technology used to reproduce in a new colony the class and cultural distinctions from the Old World of Europe.

The powerful position of patrons and interpreters at the imperial centres and the secondary, supportive position of colonial contributors to the scientific enterprise have been emphasized in the literature on colonial science. This paper aims to show that while they all shared a belief that the colonial project was justified, far from being a homogenous entity, the New Zealand scientific elite was divided by provincial affiliation, cultural background, social status and personal political concerns. These divisions led to conflict as they competed to use government resources to be the first to describe the unique characteristics of New Zealand's unique flora and fauna to build scientific careers. Working men often served as collectors for those who were in control of museums, and etiquette demanded that they surrender their finds for others to describe and publish on. This was the situation when Alexander McKay excavated skeletons of moa beside human remains at the Sumner Cave at Christchurch while working on behalf of the Canterbury geologist Julius von Haast. Yet McKay chose to write up his conclusions about the find in his

own scientific paper. He asked his friend and fellow workingman John Buchanan, who had already had his own papers on botany published in the *Transactions and Proceedings of the New Zealand Institute*, to read it at a meeting of the Wellington Philosophical Institute in 1874. Haast reacted badly, seeing McKay, and by extension Buchanan, as an attempt by Wellington authorities to compromise his South Island autonomy, and pose a threat to his nascent scientific career of international fame.

In order to understand what was at stake for Haast, it is first necessary to see how his reputation was built on moa bones, and how he used them as symbolic currency. Using just a single bone in 1839, the British Museum's comparative anatomist Richard Owen had dramatically announced that a gigantic flightless bird had once roamed abroad in New Zealand. By the 1850s when both Haast and Buchanan immigrated to New Zealand, everyone was on the lookout for moa bones. They became a valuable resource for both men – Buchanan won fame by being the first to illustrate the new species classified from bones excavated in the 1870s. A *carte-de-visite* made in a Dunedin photographer's studio at the time of the New Zealand Exhibition in 1865 shows Buchanan standing in profile, unfurling what appears to be a large scroll, but is revealed to be the articulated skeleton of the recently discovered *Dinornis*, or moa, which Director Julius von Haast had put on display in the Canterbury Museum.¹ That same photograph, gridded in pencil, was used to create a lithograph that illustrated Colonial Museum Director Dr. James Hector's publication on *Chemiornis calcitrans* in *Transactions* in 1873.²

Significantly, the exchange and sale of moa bones stocked the Canterbury Museum in Christchurch where Julius von Haast was Director. Gifts of moa skeletons also brought Haast honours and he began to claim that being at the periphery and having seen the bones in situ gave his interpretations greater credibility than those in made by the comparative anatomist Richard Owen at the British Museum in London. My contention at the outset is that the story of the exhibition, publication and illustration of the scientific moa challenges the usual models of dependent, deferential colonial science at the periphery and imperial, theoretical science at the centre. Haast himself, contrary to the model of colonial science, obtained most of his scientific education in New Zealand and was oriented to at least three imperial centres: he was German-born, naturalised British and trained in surveying coal fields, volcanic areas, gold mines and copper mines by the Austrian Ferdinand Hochstetter whom he met in Auckland the day after he arrived in New Zealand in 1858. Hochstetter left New Zealand in 1859 but remained a close adviser and patron to Haast, who enriched Vienna museums with natural history specimens from New

¹ John McGregor, Dunedin FL.1863–1884, *Portrait of John Buchanan* [1865], Alexander Turnbull Library, Photographs Collection, PA2–1079.

² James Hector, 'Cnemiornis calcitrans Owen Showing Its Affinity to Camellirostrate Natafores,' *Transactions and Proceedings of the New Zealand Institute* 6, 1873. Buchanan's whole-page lithographed illustration is tipped in between pages 76 and 77.

Zealand and named an impressive glacier after Franz Joseph of Austria which led to him being made a knight and receiving an emerald ring from the Emperor.³

Haast was also strongly affiliated to the city of Christchurch and the whole region of Canterbury which extended to the West Coast at that time. He was the president of the Canterbury Branch of the New Zealand Institute and the skills acquired from working alongside Hochstetter led to him being appointed Canterbury Provincial Geologist in 1861, Haast immediately won favour from the Provincial Government by identifying valuable coal seams in Westland and correctly advised the provincial government that the Lyttelton tunnel could be drilled within budget. Reputations in colonial science were built on just such pragmatic, applied projects that were not guided by metropolitan, theoretical concerns: Haast's success as Canterbury Provincial Geologist and Museum Director was dependent upon his turning geology to local use.

By the time Dr James Hector formed the Colonial Museum in Wellington in 1865 and the associated New Zealand Institute in 1867, the moa had become a symbol not only of New Zealand, where it had once lived, but of the achievements of European science in New Zealand. The Institute membership peaked at 1300 in the 1880s, and was a significant source of illustrated print material, through its annual volume — the *Transactions and Proceedings of the New Zealand Institute* illustrated with lithographs by John Buchanan. For Buchanan, immigration to New Zealand, where he could deploy his botanical knowledge on the description and arrangement of new species, facilitated his trajectory from journeyman to gentleman, and earned him the respect of professional scientists from the upper classes, both locally and back in Britain.

Photography was instrumental to Buchanan's social transformation. Hector collected photographs for the Colonial Museum from commercial sources, as well as encouraging his staff to make their own. As Kathleen Davidson has shown, photographic prints were disseminated in nineteenth-century Australasia not only through exhibitions but also by exchange, using a system developed from the swapping of botanical specimens.⁴ For Buchanan, sending photographs 'home' facilitated his entry into the higher echelons of Scottish society, and was instrumental in his election as a Fellow of the Natural History Society of Glasgow in 1867,⁵ sixteen years after his emigration. That Buchanan was distributing photographs of New Zealand subjects independently of his illustrations at the beginning of his term as draughtsman to the Geological Survey indicates that photography was an accepted part of scientific practice in the earliest days of the Colonial Museum in

³ Peter B. Maling. 'Haast, Johann Franz Julius von', from the Dictionary of New Zealand Biography. Te Ara - the Encyclopedia of New Zealand, updated 8-Oct-2013

URL: <http://www.TeAra.govt.nz/en/biographies/1h1/haast-johann-franz-julius-von>

⁴ Kathleen Davidson, 'Museum Traffic: Nineteenth-Century Photography and the Reframing of Natural History', unpublished paper presented at Nation Empire Globe, a postgraduate conference at the University of Sydney, 9 July 2008.

⁵ Certificate as a Corresponding Member of the Natural History Society of Glasgow, 29 October 1867, Hocken Collections, University of Otago, Dunedin, MS-0603/013.

Wellington. Indeed, Buchanan was to extensively use photographs to prepare drawings and lithographs for publication, and he also accumulated a personal collection of images which he compiled into albums at the end of his career.

Buchanan's illustrations for the *Transactions* had to be drawn rather than photographed, however, as photo-offset reproduction was not introduced to New Zealand until 1914.⁶ Buchanan often did the printing himself (annotating the prints with 'J.B. del. et lith.') or oversaw the work by the Lithographic Branch of the Lands and Survey Department. Scientific photographs were used in museum displays, and in intercolonial exhibitions, and were also sold to the public or circulated among members of the scientific fraternity locally and internationally. Professional photographers were also in the business of making images of moa remains that have long been considered as having been produced purely for popular consumption but there is evidence that Buchanan acquired many of these images to use as the basis of illustrations in the *Transactions of the New Zealand Institute*.

Māori pre-history featured prominently at the meetings of societies incorporated with the New Zealand Institute, and in the late 1860s and early 1870s debate centred upon the relationship between Māori and the extinction of the moa. Haast held a minority opinion, arguing as he did that the great bird had been hunted to extinction by a pre-Māori people called the Moa Hunters. He maintained that Māori had never known these birds.⁷ Haast's scientific reputation was founded on this work on moa. In 1866 the local owner of a large sheep station contacted Haast to inform him that many large moa bones had been found in a drained swamp on his property. The Glenmark swamp contained the remains of at least 1000 moa, including complete skeletons of *Dinornis gracilis*, *Dinornis elephatopus*, *Dinornis crassus* and *Dinornis giganteus*. In late 1867, he wrote to James Hector, Director of the Colonial Museum and Geological Survey in Wellington proudly sending photographs of two articulated skeletons but admitting that each of the skeletons had to be completed with bones from a different bird.⁸

Having notified Hector, Haast then proceeded to build up intercolonial relationships that were not mediated by either the Colonial Museum in Wellington or the centres of Europe by exchanging the remaining moa bones with colleagues in India, Australia and America. An exchange with the Indian Museum in Calcutta, for example, brought particularly rich returns: skeletons of an elephant, a tiger and a python, as well as a tiger and leopard skin, and he was able to obtain four crocodiles from northern Australia and a grizzly bear from North America. These successes led to him developing a sense that he could dictate his own terms for trade. In October 1873, he requested payment of £200 from Richard Owen at the

⁶ Wilbur Glue, *History of the Government Printing Office*, Government Print, Wellington, 1966, p.131.

⁷ "Moas and Moa-hunters," address to the Philosophical Institute of Canterbury, 1871, by Julius Haast (*Transactions*, vol. iv., p. 66, 1872). Dr Haast maintained his first impressions in other memoirs and in the work which he published under the title of "Geology of the Provinces of Canterbury and Westland, New Zealand," 1879.

⁸ Haast to Hector, Colonial Museum, 17 November 1867, MU147/1.

British Museum for a *Dinornis maximus* skeleton. He further horrified Owen by refusing to accept the role of colonial collector to Owen's role as imperial interpreter and proceeded to revise Owen's classification of 18 species of moa into 11 species in 1874.⁹

My contention is that Haast's pre-eminence in moa research was an affront to Hector and his staff at the Colonial Museum in Wellington and that the publication of articles related to the discovery of moa bones in the Sumner Cave near Christchurch provides a case study to analyse the role played by Buchanan's illustration in cutting Haast down to size. The Sumner Cave controversy erupted in August 1874 when Alexander McKay's paper was read to the Wellington Philosophical Society. McKay, a colleague of Buchanan's on the same rate of pay, was a field assistant on Dr James Hector's Colonial Geological Survey, and had been employed on the advice of Julius Haast, director of the Canterbury Museum, under whom McKay had previously worked as a collector of fossils. McKay, a working-class Scot with little formal education, had claimed the right to produce an account of excavations he had carried out as Haast's employee before Haast himself had produced a paper on the subject. McKay's paper gave a brief description of the Sumner (or Moa-bone) Cave, located just outside Christchurch, which McKay had excavated for Haast in 1872, and it hypothesized on the cave's formation, before outlining the excavation's key findings.¹⁰

McKay stated that moa bones were found together with polished stone tools in a bed called the conglomerate, and that this was overlain with a dirt-bed separating it from a higher bed containing shellfish remains. In McKay's opinion the division between these beds marked 'a very long blank in the history of the cave as a human habitation ... [which] only the desertion of the cave during the Moa-hunting times ... can account for'. As to 'whether the Moa-hunters were Māoris or another race' McKay did not 'think that any light has been thrown upon the mystery ... the Moa was either exterminated long before by another race, or ... the present inhabitants arrived here not 350 years ago, but 1,350, and ... one of their first works was the extermination of the Moa'.¹¹

⁹ Haast's classification, which only comprises eleven species:—I. Family of *Dinornithidæ*: Genus *Dinornis*, comprising *D. maximus*, *D. robustus*, *D. ingens*, *D. struthioides*, *D. gracilis*; genus *Meionornis*, comprising *M. casuarinus*, *M. didiformis*. II. Family of *Palapterygidae*: Genus *Palapteryx*, comprising *P. elephantopus*, *P. crassus*; genus *Euryapteryx*, comprising *E. gravis*, *E. rheides*. ("Proceedings of the Philosophical Institute of Canterbury," March, 1874; "Address," by J. Haast, President; *Transactions of the New Zealand Institute*, vol. vi., p. 426.) Professor Frederick Wollaston Hutton (1836-1905), Director of the Otago Museum, criticized Haast's classification. Like Owen, Haast believed that all the moas formed one natural family, that of *Dinornithidæ*. (*Transactions*, vol. ix., p. 363.) Owen and M. A. Edwards admit only two kinds, *Dinornis* and *Palapteryx*, the former tridactyle, the latter with a fourth finger, short and directed backwards.

¹⁰ A. McKay, 'On the Identity of the Moa-hunters with the Present Maori Race', *Transactions and Proceedings of the New Zealand Institute*, VII (1874), pp.98–105.

¹¹ McKay, p.101.

The polished stone tools that McKay described were incompatible with Haast's moa theory, which was based on Lubbock's division of the Stone Age into a Palaeolithic and Neolithic. Because Māori were Neolithic, Haast had argued that the moa-hunters were a distinct race who inhabited New Zealand before Māori arrived. McKay indicated that this was false, and he suggested that the reason few polished tools had been found amongst moa remains was because 'a stone hatchet, or a polished mere[club], was an implement less serviceable in the dismemberment of a fallen Moa than a sharp flake or flint'.¹²

A summary of McKay's paper was printed in the Wellington papers, and then in the Christchurch ones, and Haast was incensed. He responded in a paper presented to the Philosophical Institute of Canterbury that was much more detailed than McKay's paper.¹³ His objections to it centred on questions of scientific authority and social status – in describing the excavation at the Sumner Cave Haast showed that not only was McKay employed as a labourer, but that of the two labourers on the excavation McKay had been on the lower rate of pay.

For Haast the evidence remained compelling that Māori had never known the moa. As a postscript, Haast explained why McKay's paper breached scientific etiquette. This postscript, along with Haast's entire paper, appeared in the Christchurch newspaper *The Press* and was printed in other newspapers including the Wellington weekly the *New Zealand Mail* as well as later appearing in the *Transactions*. It was illustrated by this lithograph produced by Buchanan, which shows the tools found buried with the human and moa remains at Sumner. Working most likely from a photograph that was sent to him, this lithography shows Buchanan as an illustrator siding with McKay as he has shown some of the surfaces of the adzes as polished. This illustration is much more compelling than Buchanan's depiction of the section of the Sumner cave itself, published in the same issue of the *Transactions* within Haast's paper.

McKay responded with a letter to the *New Zealand Mail* in which he explained that his intention in writing the paper had been 'to give to the world the theoretical bearings of the facts collected by me on his [Haast's] previously published theories'. If 'I filched notions from him', McKay added, then they came from what Haast had published, 'and not ... verbal instructions received from him'.¹⁴ McKay reversed Haast's scientific etiquette argument by implying that the real reason Haast was angry was because the evidence demonstrated flaws in his theory. The 'explorations were made two years ago', McKay declared, 'since which Dr. Haast has had plenty of time to publish his views, and it is my belief that but for the above paper by me the public would not have had any communication from Dr. Haast for a long time to

¹² McKay, p. 101.

¹³ James Haast, 'Researches and Excavations carried on in and near the Moa-bone Point Cave, Sumner Road, in the Year 1872', TPNZI, Vol. VII (1874), p. 82.

¹⁴ Alexander McKay, Letter to the Editor, *New Zealand Mail*, 3 October 1874, p. 20.

come' because 'the facts collected conflicted so strongly with his pet theories respecting moas and moa-hunters'.¹⁵

McKay concluded by portraying himself as a victim and an industrious self-improver. 'It is true', he stated, 'I was engaged in menial occupations; but I cannot see why, not having had the superior advantages of education which Dr. Haast seems to have enjoyed, I should be subject to his sneers because I try to raise myself to a higher position in the intellectual world'.¹⁶ McKay thus exploited his humble background to assert that he was an industrious seeker of truth, and he implied that Haast was sacrificing truth to defend his theory. Buchanan was a close personal friend of McKay's who like him was interested in the uses of photography for scientific illustration, and went on to develop telescopic photographic techniques. Buchanan's use of photographs for the illustration of moa in the *Transactions* deconstructed hierarchies as well. In them is a blurring of the boundary between a functional, technical, and empirical labour carried out by the scientific draughtsman and the critical, interpretive, intellectual labour of an artist.

Few within New Zealand's intellectual elite remained untouched by the Sumner Cave controversy. Yet, in spite of the damage it caused to social relations between men of science, the careers of the leading protagonists were not significantly harmed. Haast, for example, remained a local hero in Canterbury and continued to be influential throughout the colony, eventually being chosen ahead of Hector as New Zealand Commissioner to the Colonial and Indian Exhibition in London in 1886. With regard to the scientific theories at the heart of the dispute, it is clear that the controversy did not resolve the moa extinction debate. Even though McKay made converts for his position, debate continued through to the end of the century and beyond.

The Sumner Cave controversy was fuelled by the colonial elite's desire to know the pre-history of the indigenous peoples they were displacing, and it assumed a form dictated by the structure of the New Zealand Institute and the nature of provincial political tensions in the mid-1870s. The dispute reveals that social hierarchies were important in colonial science, but they could be subverted with dramatic effect. McKay presented himself as humble and self-improving and, in a career which saw him become Government Geologist to the Department of Mines, he continued to proclaim that he was the grandson of a shepherd and the son of a Calvinist artisan. McKay's most notable literary accomplishment was *The Canterbury Gilpin*, published anonymously in 1880, which describes the discovery of a living specimen of moa which is paraded through the streets of Christchurch with the Haast riding on its back until the frightened creature bolts for the countryside with the startled professor clinging for dear life, the two never to be seen again.

¹⁵ Alexander McKay, Letter to the Editor, *New Zealand Mail*, 3 October 1874, p. 20.

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Even though the New Zealand Institute was dominated by the social and political elite, McKay's case which was supported by Buchanan's illustration, demonstrates that, if skilfully handled, a humble social status could be the basis for claims of scientific authority.

Biographical statement

Linda Tyler is an Associate Professor teaching in the Art History Department at the University of Auckland, and Director of the Centre for Art Studies which administers the Gus Fisher Gallery, the Art Collection and Window.