

‘The democratic politician does not trouble himself with science’: class and professionalisation in the New Zealand Institute, 1867–1903

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ABSTRACT: Drawing upon a wide range of printed primary sources and manuscripts held in the archive of the Museum of New Zealand Te Papa Tongarewa, this paper argues that the New Zealand Institute during the period 1867–1903 should be understood as a class-based and a class-defining institution, and that efforts during the early 1880s to reform the Institute were in part an attempt to replace a social elite with a professionalised one. Furthermore, this paper argues that this class-based system helped to support scientific institutions by solidifying links between New Zealand’s tiny band of professional men of science and the colonial political elite.

KEYWORDS: class, professionalisation, reform, New Zealand Institute, Colonial Museum, James Hector.

Introduction

There was no formalised nationwide New Zealand scientific community before the passing of New Zealand Institute Act 1867. The New Zealand parliament, with this piece of legislation, established a mechanism by which scientific societies in New Zealand’s provincial centres could incorporate with a central body – the New Zealand Institute – and publish papers and records of their meetings together in one annual volume. The Institute’s annual vote of 500 pounds, established through the Act, was almost exclusively spent on the production, and free distribution to members of incorporated societies, of its journal, which was called the *Transactions and Proceedings of the New Zealand Institute (TPNZI)*. Through the Act, James Hector, curator of the Colonial Museum in Wellington, director of the New Zealand Geological Survey, and chief man-of-science employed by the colonial government, was

made manager of the Institute and became the editor of the *TPNZI*. This legislative framework gave science in New Zealand a firm colonial, as opposed to a provincial or inter-colonial/Australasian, focus. Where previously there had been isolated provincial philosophical societies meeting irregularly, and a small number of men interested in science communicating with scientific savants in Europe and Australia, now, for the first time, there was a journal tying together the diverse intellectual activities of New Zealand’s colonial elite.

A study of the New Zealand Institute and its constituent parts during the period that Hector was its manager, from 1867 to 1903, is therefore, arguably, a study of the emergence of science in New Zealand. Investigating the workings of the Institute helps to explain how such a vigorous intellectual community developed in New Zealand at a time when no more than a dozen men were employed as professional men of science in New Zealand’s

geological surveys, museums and, later, the university colleges. I am currently engaged in research for such a study of the New Zealand Institute in order to trace the influence of science in late colonial New Zealand society. In this paper I will present some of the initial findings I have made from a close reading of the *TPNZI*, together with archival research undertaken in the Museum of New Zealand Te Papa Tongarewa archive in Wellington, where most of the manuscripts relating to the New Zealand Institute and Hector's other diverse scientific activities are located (Strachan 1984: 74). I shall argue that the importance of class in the New Zealand Institute helped to compensate for the dearth of paid professional scientists in colonial society. Furthermore, class aspirations and expectations had a significant influence on the functioning of the philosophical societies: on the one hand participation in such societies helped New Zealand's social elite to define itself, while, on the other hand, the socially elite make-up of the philosophical societies directly impacted upon the nature of the science discussed at their meetings. This paper also argues that the moves to reform the New Zealand Institute in the 1880s by men of science based in Christchurch and Dunedin, such as Frederick Wollaston Hutton and George Malcolm Thomson, should be partially understood as an attempt to challenge this class-based system of science, and to replace it with a system dominated by professionalised scientists. This paper also helps to explain why such early attempts at professionalisation were ultimately unsuccessful.

Class in New Zealand historiography

Until relatively recently class has not featured strongly in mainstream historiography in New Zealand. Historians of the colonial era have not denied that throughout the nineteenth century there were significant inequalities in the distribution of wealth in New Zealand society. However, they have stressed that because there was generally a strong demand for labour, forcing wages upwards, there was therefore a high level of social mobility in New Zealand colonial society, and little room for the Old World expectation that one's servants should be unquestioningly obedient and deferential. As Sinclair puts it, there were 'of course, classes, in the sense of rich and poor. In each settlement small cliques usually ran all public functions from

balls to race meetings ... But there was little of the forms or trappings of the English class system' (Sinclair 2000: 100). Class divisions, under this school of historiography, were something foreign to New Zealand society, and were resisted by ordinary New Zealanders. According to Sinclair, it was only with the economic depression of the 1880s that two nationwide classes began to emerge, and one of the main achievements of the Liberal Party after their 1890 election victory was to restore New Zealand to its natural democratic, and classless, equilibrium (Sinclair 2000: 176–199).

This somewhat utopian view of nineteenth century New Zealand society has come under attack from a number of historians. Most recently, and most coherently, Jim McAloon has argued that rather than being a late and unwelcome arrival, 'class was central to colonial society, and central from the beginning' (McAloon 2004: 3). In his economic and imperialism-focussed study, which emphasises 'class formation and class structure as well as class consciousness', he concedes that class in New Zealand was different to class in Britain or Europe (McAloon 2004: 15). For example, he argues that the 'British middle-class ethic was one of individual effort and self-improvement'; however in New Zealand this 'ethic characterized both the New Zealand upper class and the New Zealand middle class' (McAloon 2004: 10). Simply because class groups and relations were different in New Zealand to class formations in Britain, he argues, there is no reason for historians not to emphasise their existence or importance. Indeed, I would add, class was given added importance in colonial New Zealand society because social distinctions and protocols were more often discussed, considered, and disputed: nineteenth century settlers battled to adapt their class expectations and social ambitions to the realities of the colonial economy. The involvement of a cross-section of New Zealand's colonial elite in the formation and running of the New Zealand Institute, therefore, should be read as an act of class consciousness and of self-conscious class building.

Historians of science in New Zealand have not explicitly emphasised the importance of class in colonial scientific societies, nor have general historians commented on the importance of science to New Zealand's colonial elite. Indeed general historians almost entirely ignore New Zealand's colonial scientific institutions: Michael King in his *The Penguin History of New Zealand* only mentions the *TPNZI* in passing, while Belich glosses over James Hector and the colonial scientific establishment in one short

sentence (King 2003: 257, Belich 2001: 249). One possible reason why class has not featured as a strong analytical category in the writings of New Zealand's few professional historians of science – Ross Galbreath, Ruth Barton, and John Stenhouse – could be their general emphasis on biographically focussed history. By studying the careers, beliefs, and lives of individuals, rather than studying larger groups such as philosophical societies or universities, they have generally not expanded upon or identified features common to the New Zealand scientific community as a whole. None the less, collectively their writings demonstrate how science and involvement in the colonial scientific community were used to advance the careers of socially ambitious individuals such as Walter Buller and Julius Haast (Galbreath 1989a, Barton 2000. Also *see* Dunlap 1999: 33). Furthermore, in his recent biography of the father and son George Malcolm and Allan Thomson, Galbreath explains that in the 1870s and 1880s there was a clear class distinction between practical and classical/theoretical knowledge in New Zealand: 'high school education [theoretical and classical education] was for professionals and gentlemen; technical [practical] education was for workers' (Galbreath 2002: 45). The philosophical societies incorporated with the New Zealand Institute organised and promoted classes for technical education to enhance the country's artisanal skill base. In doing so, the members of the societies were distinguishing themselves as socially superior to the men they aimed to improve through technical education.

Social elevation through social distinction

The advancement of technical education for working men was just one of the ways in which the members of philosophical societies incorporated with the New Zealand Institute sought to elevate themselves socially. Historians of science in New Zealand have stressed how the philosophical societies opened their doors to all comers and therefore had a wide spectrum of support and a diverse membership (Hoare 1977a: 10, Fleming 1987: 95, Galbreath 2002: 21). And in one sense this is obviously true: during the 1870s and 1880s there were never more than a dozen professional men of science working in New Zealand, excluding engineers, surveyors, and medical doctors, yet the membership of the half a dozen philo-

sophical societies incorporated with the New Zealand Institute peaked at well over a thousand in the early 1880s. Sustaining this level of society membership, at a time when the entire European population in New Zealand numbered less than half a million, required the involvement of lawyers, judges, prelates, politicians, businessmen, and other professional men in areas unrelated to science. The different provincial philosophical societies had varying rules relating to how one could become a member. Typically an individual needed to be nominated for membership by at least two members of a society and pay an annual fee of around one guinea to maintain that membership (*see* for example: MU000282, Box 1, Item 3: *Rules of the New Zealand Society Reconstituted November, 1867*; MU000147, Box 3, Folder 3: Kirk 1870). There was no requirement for a member to have any scientific training or any publication record.

Membership of the philosophical societies therefore was wide in its coverage of different professional groups. Yet, although most philosophical societies did not explicitly exclude anyone in their rules, significant groups in colonial society were not represented on membership lists. The annual membership fee, though not as high as the four pound annual fee for the elite Royal Society in London, or the three guinea subscription for the Edinburgh Royal Society – and a mere pittance compared to, say, Hector's annual salary of 800 pounds – approached a week's wages for an unskilled labourer (for London Royal Society annual contribution: MU000147, Box 2, Folder 8, The Royal Society to James Hector, 25 May, 1869; for Edinburgh Royal Society subscription: MU000094, Box 1, Folder 1, (76): Edinburgh Royal Society receipt for James Hector, 28 February, 1871). And even if a poor labouring man wished to join a philosophical society, he would still need to convince two members of the society to nominate him as a candidate. It is therefore unsurprising that there was little social diversity among the members of the philosophical societies and, as Galbreath points out, there is no evidence that any Māori became members of the incorporated societies until 1907, when Maui Pomare joined the Wellington Philosophical Society and Te Rangihiroa joined the Auckland Institute (Galbreath 1989b: 73).

Interestingly, there is significant evidence of female involvement in the philosophical societies. In the 1851 rules of the New Zealand Society, a short-lived Wellington-based precursor to both the New Zealand Institute and the Wellington Philosophical Society, it was stated that 'Ladies

may be admitted as members of the Society, without ballot, on the recommendation (in the regular form) of three Members ... but they will have no share in the management of the Society' (MU000282, Box 1, Item 3: *Rules of the New Zealand Society* Instituted July, 1851). Indeed there were few formal female members of the philosophical societies during the colonial period, and no papers by women were published until the issue of the *TPNZI* for 1892, when three such papers by different authors appeared. But, none the less, many women attended the meetings of philosophical societies as the guests of male society members – typically their husbands, fathers, or brothers (Galbreath 2002: 30). Such female guests were not given speaking rights at meetings, and their presence at meetings does not undermine the notion that the philosophical societies were socially exclusive, as the women came from the same elite section of colonial society as their male hosts (Alter 1987: 16).

As well as being socially elite in terms of membership, the philosophical societies incorporated with the New Zealand Institute were clearly class conscious and keen to play a paternalistic role in the lives of those from the lower reaches of settler society. The philosophical societies heard numerous addresses on technical education in which its benefits were explicitly couched in the language of class. James Hector (Fig. 1), in his capacity as chief government scientist and manager of the New Zealand Institute, received many letters asking for his help in establishing such schemes. In 1873, for example, a Mr Rae from the Literary Institute in Blenheim, an organisation not affiliated to the New Zealand Institute, wrote to Hector saying 'I have long been convinced of the importance of technical education to the working classes, and though I am not capable of taking the position of a Priest in the Temple of Science I have for many years endeavoured as far as possible to perform the duties of a lay brother' (MU000094, Box 2 (913), Mr Rae to James Hector, 19 November 1873). In the philosophical societies incorporated with the New Zealand Institute, elite class identity was reconfirmed by efforts to help the working classes, by discussions on the physical characteristics and future prospects of the Māori race, and in detached debates surrounding the nature of labour and capital. In each such case a different group of people – the poor, the ill-educated, or Māori – was identified as the 'other': an object of pity or a focus for quiet contemplation, but certainly not a group able to participate in the activities of a philosophical society.

The influence of social elitism on knowledge formation

The diverse and socially elite membership of the philosophical societies had a significant influence on the nature and content of the topics discussed at the societies' regular monthly meetings. At the beginning or the end of a society's season of meetings, it was customary for the outgoing – or the incoming – president to give a public address either reviewing the society's achievements during the preceding year or tackling some intellectual topic of general interest. During these addresses the president was able to make suggestions for how he believed the society should proceed in the future. One common theme in such presidential addresses was a plea to ensure the continued popularity of the philosophical societies by avoiding too narrow a focus on scientific topics of discussion. T.B. Gillies, for example, in his 1873 address to the Auckland Institute, stated that the 'terms "science" and "scientific" have become so much words of terror to those who fancy themselves outside of the pale' that he felt it necessary to remind his audience 'that literary or artistic contributions are not foreign to the aims of our society, that, indeed, they would tend to increase the interest in it...For there is a solid value in popularity when allied to usefulness' (*TPNZI* 1873: 397–398). In this search for popularity, and the continued support of the colonial elite, the philosophical societies organised regular art displays and *conversazioni*, they hosted popular lectures on exciting controversial topics such as evolution and the relationship between mind and body, and the papers presented at their ordinary meetings included many touching upon history, political economy and ethnography, in addition to the more strictly technical papers on natural history, chemistry, and geology.

As well as influencing the variety of topics discussed at the philosophical society meetings, the socially elite make-up of the philosophical societies also had an interesting influence on the status of many of the scientists and engineers within the scientific community – they appear to have been marginalised. Of those who made up the philosophical societies, it seems that those professionally involved in engineering and science were frequently also those representing the lowest social groupings (for an interesting parallel see Alter 1987: 217–221). Beyond the elite provincial engineers and the high status, and generally university-educated, men of science such as Edward and Arthur Dobson, James Hector, Julius Haast, and Frederick

Wollaston Hutton, engineers and those employed to assist high profile men of science were frequently from humble working class backgrounds. This was certainly true of the men who worked under Hector at the Colonial Museum such as John Buchanan the botanist and draftsman, and William Skey the colonial chemist (Adams 2002). Within the philosophical societies, such second-tier professional men of science were generally not elected to high office. The office of president in particular almost always went to men of substance and class, and those professional scientists and engineers who lacked high social status were restricted in the role they could play within the philosophical societies to presenting factual papers on their narrow supposed area of expertise (Stenhouse 1996: 130–131).

Indeed, when an engineer or a low status professional scientist made a general knowledge claim, beyond his specialist area, he could be criticised for over-extending himself. For example when, in 1870, in the wake of Vogel's proposed Public Works and Immigration policy, the engineer G.M. Barr presented a paper to the Otago Institute arguing against the construction of cheap railways with narrow gauges, he was roundly criticised by several of the other members of the Institute, including a Mr Cargill, who stated that under the system Barr proposed 'railways with the traffic here could not be worked except at a loss', and therefore, instead of proposing impractical schemes the 'engineers here should study economy, and suit the means to the end' (*TPNZI* 1870: 102). The implication was clear, Barr, as an engineer, had over-stretched himself in presenting a paper with such large political and economic consequences.

Professionalisation in reform

If science in the New Zealand Institute during the colonial period is seen as being a class-based, and class-defining, activity, then the reform movement within New Zealand science during the 1880s can be seen as an attempt to replace a social elite with a professionalised one. Professionalisation is a word that does not often appear in the writings of New Zealand's historians of science. In his 1987 article on the early reception into Europe's scientific community of the moa, however, J.W. Gruber describes the establishment of the geological surveys under Haast in Christchurch and Hector in Otago, then Wellington, in the 1860s, as an important part of the 'professionalising' of New Zealand science (Gruber 1987). Undoubtedly the



Fig. 1 Sir James Hector (1834–1907): Director of the Colonial Museum, the New Zealand Geological Survey, and government's unofficial 'chief man-of-science', as well as the manager of the New Zealand Institute and editor of the *TPNZI* until his retirement in 1903 (photo: Museum of New Zealand Te Papa Tongarewa, A.000288).

establishment of these first scientific institutions in colonial New Zealand was a pivotal event, but it did not significantly professionalise New Zealand science: during the late nineteenth century there were very few state-funded opportunities in the sciences, and non-professionals were not excluded from most scientific institutions. Furthermore, non-professionals wrote the bulk of papers presented to meetings of philosophical societies throughout the period.

While professionalisation has not been influential in the writings of New Zealand historians of science, there now exists an extensive literature relating to the professionalisation of science in Europe and North America. Although, as J.B. Morrell reminds us, we should be careful not to view professionalisation in a deterministic fashion as a 'necessary consequence of industrialisation', and we

should therefore be careful not to assume that professionalisation was an identical process in different localities and historical epochs, studying the writings of historians of professionalisation in North Atlantic science is useful for New Zealand historians as it can help to broaden our understanding of how professionalisation is used as a descriptive category in relation to science in the nineteenth century (Morrell 1990: 981–982. Also *see* Alter 1987: 13). Rather than viewing professionalisation as being a discrete event that can be said to occur at a particular point in time, professionalisation in nineteenth century science is now viewed as being a process, or series of processes, which included increases in the number of paid positions in the sciences; in the number of specialist scientific qualifications and training opportunities; in the specialisation of scientific societies and the use of technical language in scientific publications; and in the number of honours conferred by scientific societies on individuals for their acknowledged scientific achievements (Morrell 1990: 982–984. For the specialisation and professionalisation of scientific societies *see* Alter 1987: 14–21). As a result of these changes during the nineteenth century, most historians now acknowledge, as Morrell puts it, that ‘science in Europe and the United States was incompletely and very slowly transformed from the pastime of leisured individuals into a regular vocational pursuit’ (Morrell 1990: 982).

In contrast to their neglect of professionalisation as an analytical category, New Zealand historians of science have often referred to what they call a ‘reform movement’ in New Zealand science (Hoare 1977b, Stenhouse 1996: 138, Galbreath 2002: 81). Using the opportunity afforded by the publication of G.M. Thomson’s *The New Zealand Journal of Science* from 1882 to 1885, a number of men began openly to express their concerns about the scientific establishment in New Zealand. These concerns were wide and varied and included everything from protestations about the low quality of the illustrations in the *TPNZI*, through to demands for greater representation for the provincial philosophical societies on the Hector-dominated Board of Governors of the New Zealand Institute. The leading members of the New Zealand scientific community had frequently mentioned such concerns in their private correspondence almost from the passing of the New Zealand Institute Act 1867, but in *The New Zealand Journal of Science* they were expressed, for the first time, in a highly public forum.

Implicit to many of the articles agitating for reform

published in *The New Zealand Journal of Science* was a belief that the control of the New Zealand Institute should be in the hands of professional scientists, or at least those who actively did scientific work. For example, A.K. Newman, the Wellington-based doctor, ethnographer, and philosophical materialist, in an article proposing the formation of a New Zealand Association of Science along the lines of the British Association for the Advancement of Science, stressed that it ‘must be governed by a committee of *workers*, and not of great names. Every man on the committee should be chosen because of his known capacity as an organiser and worker, and no man should be on it merely because he is a “Sir” or an M.L.C. or M.H.R., or a luminary of the Church guileless of all scientific work’ (Newman 1882: 148–149). The implication was clear – any new association should not repeat the mistakes of the New Zealand Institute: the right to govern a scientific society should be a reward for one’s achievements as a scientific worker. F.W. Hutton was even more direct in his criticisms of the socially elite Wellington-centred management of the New Zealand Institute when he stated in a letter to *The New Zealand Journal of Science* that ‘of the eleven governors [of the Institute] more than half have never contributed a paper to the Transactions’ (*The New Zealand Journal of Science* 1884: 100). Such statements clearly match the broad analytical use of the term professionalisation in the modern historiography of science, as discussed above.

Furthermore, although Thomson, Hutton, and Newman were agitating for more elected representation on the Board of Governors of the New Zealand Institute, it is clear that their proposed reforms were not intended to be fully democratic or socially inclusive. When Coleman Phillips wrote in defence of the organisational structures of the New Zealand Institute, he stated that ‘I think the use of the words “democratic community” and “representatives by election” by Mr. Thomson rather out of place in a scientific paper of any kind. Nothing, to my mind, is more objectionable than the extreme democratic tendencies of the Colony as it is, and if we are to have the evils resulting therefrom – I allude more particularly to the low standard of education shown by the generality of our public men – forced upon the New Zealand Institute, time it will be for the work of the Institute to cease’ (Phillips 1884: 134). Thomson responded by making it clear that his ‘democratic tendencies’ were ‘not so strong that I admire the existing state of things in matters political’, however he did

not think 'that there is any danger of the condition which Mr. Phillips dreads so much coming to pass in our scientific societies' because the 'democratic politician does not trouble himself with Science; he is generally satisfied to pose as a working man's hero' (*The New Zealand Journal of Science* 1884: 136). What the supporters of reform and professionalisation, and the supporters of the status quo in the New Zealand Institute, could all agree on in the 1880s was that scientific societies should not be socially inclusive or openly democratic. Rather, the reformers wanted New Zealand's scientific institutions to be run by professionalised men of science, while the status quo in the New Zealand Institute prioritised social status over scientific attainments.

The reform movement of the 1880s failed to change the structure of the New Zealand Institute, and G.M. Thomson's journal was discontinued both because it failed to gain a large subscription list and because many of its subscribers defaulted on their payments (Thomson 1885). Although it was clear that a large number of New Zealand Institute members, particularly in the Dunedin-based Otago Institute and in Christchurch's Philosophical Institute of Canterbury, were unhappy with many aspects of the New Zealand Institute's management, support for reform was not widespread enough to allow for a bloodless coup against Hector and his system. There were too many unanswered questions: would the dominance of the New Zealand Institute by professionalised scientists scare away the bulk of members, who were not active scientific workers? Would this result in the philosophical societies struggling financially owing to a decrease in income from membership fees? Would Parliament's annual vote of 500 pounds to the Institute be endangered by a decrease in diversity among the Institute's membership? In the face of such uncertainty, and with their criticisms at least made public, if not addressed, following the failure of *The New Zealand Journal of Science* the reform movement supporters continued to work within the New Zealand Institute and kept their criticisms mostly to themselves.

In defence of class

With the formation of the Australasian Association for the Advancement of Science (the AAAS) in 1888, and its first meeting in New Zealand in Christchurch in 1891, there was finally a colony-wide – or rather inter-colonial – movement that incorporated many of the suggestions that the

agitators for reform in the New Zealand Institute had made during the early 1880s. The AAAS gave its highest honours to active scientists, and its meetings were never held in the same city on consecutive occasions: it was thus professionalised, and de-centralised, unlike the New Zealand Institute. As a consequence of the AAAS meeting in Christchurch, Thomson briefly revived *The New Zealand Journal of Science*. Furthermore, Hutton demonstrated how professionalisation and a broad base of support could co-exist in a colonial organisation through his involvement with the New Zealand Alpine club. The Christchurch-based club, which from 1892 produced *The New Zealand Alpine Journal*, claimed to have been partially inspired by 'the meeting of the Australasian Scientific Association in Christchurch when the glaciers were very much discussed' (Anonymous 1892: 3). As part of its constitution the club was divided into "members" who must first qualify by some work and who were to have the sole management of the club's affairs' and 'subscribers', who were 'to consist of persons who take a passive interest in the work and wish to help it by subscribing; these to have no voice in the management of the club but be admitted to all its privileges' (*The New Zealand Alpine Journal: A Record of Mountain Exploration and Adventure* 1892: 4).

Hutton, who was one of the Alpine Club's founding vice-presidents, and the chairman of the meeting at which the division between 'members' and 'subscribers' was decided upon, was clearly applying his belief in the virtues of professionalisation in New Zealand science, and the New Zealand Institute, to a different, but related, context. In the Alpine Club a committee consisting of the club's president, one vice-president, and any two members of the club, could decide upon the merits of a potential 'member' (*The New Zealand Alpine Journal: A Record of Mountain Exploration and Adventure* 1892: 6). Although the 'members' were given the full management of the club, this came with the added burden of a higher annual subscription fee (*The New Zealand Alpine Journal: A Record of Mountain Exploration and Adventure* 1892: 7). Hutton thus demonstrated his belief that a society managed and run by professionalised or active workers could be sustainable in colonial New Zealand and could gain the support of those excluded from the society's management on the basis of their non-professionalised status. During the nineteenth century, however, Hutton and his like-minded supporters never had an opportunity to apply their belief in professionalisation to the reorganisation of the New Zealand Institute.



Fig. 2 Colonial Museum on Museum Street, Wellington (1904): Located directly behind Government House and the colonial Parliament, it provided James Hector with an excellent base from which to form strategic links with various members of colonial New Zealand's political elite (photo: Museum of New Zealand Te Papa Tongarewa, C.001054).

All of this changed in 1903 when James Hector, after thirty-five years as the New Zealand Institute's manager, finally, at the age of sixty-nine, retired from government service. Very rapidly Hutton took this opportunity to campaign for a new act of parliament to alter the constitution of the Institute (Fleming 1987: 43). With the passing of the New Zealand Institute Act 1903, many of the changes advocated in the 1880s were finally put into place: the provincial philosophical societies were given increased representation on the Institute's Board of Governors; the elected post of 'president' of the New Zealand Institute was created, and the first man elected was Hutton; the position of 'editor' of the *TPNZI* was separated from the management of the Institute, and soon articles submitted to the *TPNZI* were being peer-reviewed (for evidence of peer-reviewing see MU0000147, Box 10, Folder 3: G.M. Thomson to A. Hamilton, 4 February, 1908). Very quickly the numerous official positions Hector had held were separated and allocated to different people: a new Geological Survey was established under the directorship of Dr James

Mackintosh Bell; the Colonial Laboratory came under the control of Dr Maclaurin; and the new director of the Colonial Museum (Augustus Hamilton) was only briefly editor of the *TPNZI*, before being replaced in that role by G.M. Thomson (MU0000147, Box 10, Folder 2, Circular Letter by A. Hamilton, 1 October, 1905). Science in New Zealand flourished after 1903 under the control of these and many other professional state-employed scientists. Given how quickly professional state science developed in New Zealand during the early twentieth century, it began to appear to some, in retrospect, that the reason professional science, if not science more generally, had stagnated before 1903 was because James Hector had maintained dominance over the colonial government's scientific institutions, and because the state coordinated system of scientific societies – the New Zealand Institute – had been more of a gentlemen's club than a forum for professional scientists. Contemporaries and subsequent commentators and historians have dismissed Hector as an autocratic empire-builder and the New Zealand Institute he managed as

elitist and ineffectual (for example, *see* Fleming 1987: 45, Belich 2001: 249). Before 1900, however, the New Zealand parliament had been very unwilling to expand funding for scientific activities, and Hector's Colonial Museum and Geological Survey had suffered frequent budget cuts during the economic depression of the 1880s and early 1890s. The departure of Hector from government employment in 1903 coincided with generally improved economic conditions in New Zealand from the mid-1890s onwards and the increased willingness of the government to fund certain scientific activities, combined with a rise in the number of graduates in the sciences from New Zealand's fledgling university colleges.

To dismiss Hector and the late-colonial New Zealand scientific establishment as elitist and ineffectual is therefore to ignore the realities of colonial New Zealand society. Professional science in New Zealand, as in many other nineteenth century colonial contexts, was precariously placed: long-term government funding was never assured. Science was often viewed, particularly in the colonial context, as being an expensive and unnecessary luxury, and even when a scientific institution was seen as being of genuine practical utility, as was the case with many geological surveys, it was often assumed that their economic usefulness would be finite, and that the particular scientific project should receive funding for only a fixed period of time (Alter 1987: 62). This mindset led to the conclusion of the geological surveys paid for by the Canterbury and Otago provincial governments in the mid-1860s and, most dramatically, to the disbandment of the Australian colony of Victoria's geological survey in 1869 which, up to that point, had been the most impressive professional scientific institution in all of the Australasian colonies (for the Victorian survey *see* Hoare 1976: 386, Home 1988: xii).

The structure of the New Zealand Institute under James Hector, therefore, can be seen as a response to the precarious position of Hector and the tiny group of his fellow state-employed men of science in colonial New Zealand. Hector exploited the contacts he had as chief government scientist after 1865 to gain himself political allies and to attempt to ensure his scientific department some permanence of supply. The Colonial Museum, which was conveniently located directly behind Government House and the colonial Parliament, gave Hector an excellent base from which to forge such strategic links, and in 1868 he married Maria Georgiana Monro, the daughter of David Monro, then the Speaker in the House of Representatives

(Fig. 2). The formation of the New Zealand Institute in 1867, therefore, was in part an attempt to solidify the links between New Zealand's half a dozen precariously positioned professional men of science and New Zealand's social and political elite. Certainly, if the formation of the New Zealand Institute was an attempt to woo the political elite, it should be viewed as a success: by my count by 1874 no fewer than thirty-nine percent (fourteen out of thirty-six) of those who had been members of the Legislative Council in 1867, when The New Zealand Institute Act 1867 was passed, and forty-six percent (thirty-two out of seventy) of those who had been members of the House of Representatives in the same year, had become members of the New Zealand Institute.

By refusing to exclude or marginalise non-professionals, Hector and the New Zealand Institute ensured that it would always have some support among New Zealand's governing elite – and this was to prove particularly important both with the periodic bouts of economic retrenchment enacted by successive governments following the expansive economic policies of the early 1870s, and with the rise of a 'democratic' anti-elitist and anti-intellectual strand in New Zealand politics, personified in the likes of Richard Seddon (Hamer 1988). The class-based nature of the philosophical societies incorporated with the New Zealand Institute under James Hector can be defended, therefore, on the basis that the Institute acted as a bulwark for state-funded science against sudden changes in government policy. Any moves to professionalise the New Zealand Institute in the 1880s could potentially have threatened New Zealand's entire professional scientific community by removing its strongest bond to the political elite. In any case, while professionalised scientists were sometimes excluded from the management of the New Zealand Institute, it was hardly a stagnant organisation: it provided an effective focal point for all intellectual activity in colonial New Zealand (Howe 1991: 45, Beattie 2003: 383).

Conclusion

This article has argued that the New Zealand Institute during the period 1867–1903 was a class-based, and a class-defining, organisation. It was supported by a wide section of New Zealand's social and political elite and, as well as being New Zealand's premier forum for scientific discourse, it was also a major focal point for the emerging

social sciences, the humanities, and the creative arts. It is therefore somewhat surprising that the Institute has received so little attention from recent historians of the colonial period in New Zealand. Environmental historians and historians of race relations certainly often use the *TPNZI* as a quarry for examples of settler attitudes to New Zealand's indigenous natural history and people, though generally they do so with little discussion about the nature of the New Zealand Institute itself; however many historians of other aspects of colonial New Zealand's intellectual history ignore the New Zealand Institute completely. Fiona Hamilton, for example, in her recent study of the rise of public history in late nineteenth and early twentieth century New Zealand does not mention the New Zealand Institute or the *TPNZI* once, although the Philosophical Societies incorporated with the Institute were undoubtedly one of the most important centres for the discussion and development of narratives relating to New Zealand's past among late colonial European New Zealanders (Hamilton 2002).

The absence of significant references to the New Zealand Institute in the work of modern New Zealand historians is symptomatic of the absence of references to the history of science generally in most New Zealand historiography. This is in sharp contrast to recent developments in historiography elsewhere in the world. As John MacKenzie puts it, it 'is indeed one of the most encouraging aspects of the modern historiography that the histories of science and medicine which, until comparatively recently, were somewhat esoteric areas of study, have joined the mainstream of intellectual history' (MacKenzie 1997: 11–12). This phenomenon has most recently, and most dramatically, been demonstrated in Chris Bayly's *The Birth of the Modern World* in which not only does science rank alongside the rise of the modern state, industrialisation, and religion as one of the 'great social concepts which have been used by historians, as they were by nineteenth-century writers and publicists, to characterize the dominant changes of the nineteenth century', but the techniques developed by historians of science to describe the relationship between science and social and political history, and the approaches used to describe the interaction of western and non-western science, are generalised to provide a model for the study of intellectual history as a whole (Bayly 2004: 4, 284–285). The writing of intellectual history in New Zealand would certainly be similarly enriched if international developments in the historiography of science

were studied and generalised. With regards to the New Zealand Institute specifically, I have argued that participation in the Institute had significant social and class-associated implications for many individuals, and that collectively these can help to explain why there was some resistance to the moves made in the early 1880s to reform the Institute.

In 1880, J.T. Thomson, New Zealand's first surveyor general, and the then president of the Southland Institute, stated in his inaugural address to that body that all 'these Societies [incorporated with the New Zealand Institute] have done good service by promoting intellectual enquiry, and by the bringing of persons engaged in the same studies and observations together, who would otherwise not meet; also, by the discussion of subjects of utility, or of special and general interest, – a record of which is to be seen in the twelve volumes [then printed] of "*Transactions of the New Zealand Institute*" ... altogether the establishment of such a medium of communication between local as well as distant practical and scientific workers in the colony may be said, to the thoughtful enquirer, to be one of the most auspicious events in the social history of our colony' (*TPNZI* 1880: 458). Although Thomson's comments should be read as typical of the exaggerated claims made at such formal occasions in any organisation, Thomson was correct in stating that the formation of the New Zealand Institute and the publication of the *TPNZI* were both significant events in the social history of New Zealand. New Zealand's social and intellectual historians ignore them at their peril.

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