

## **Rich Pickings: the intellectual life of Josephine Gordon Rich (1866-1940)**

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The title of this paper is a little misleading as the adjective “meagre” rather than “rich” better suits the picking over of the life of Josephine Gordon Rich (1866-1940), but the intentional pun would have been lost.<sup>1</sup> She was one of a handful of women of her generation in New Zealand to actively pursue science and deserves due recognition for her zoological achievements, and this is the aim of this paper. Information gleaned about Rich’s activities and interests is incomplete, enigmatic and largely inferred through the activities of her teacher, Professor Thomas Jeffery Parker (1850-1897) in Dunedin, and her husband, Professor William Aitcheson Haswell (1854-1925) in Sydney. Both men, little known today, were eminent colonial zoologists, but beyond short biographies in national dictionaries and hagiographic obituaries neither man is well served by historical analysis.<sup>2</sup> The women in their lives remain even more obscure, just like many other late-nineteenth-century middle-class colonial women. Generally speaking, women did not leave a legacy of first-hand accounts, and currently no diaries or journals, written by those interested in science, are available for consultation in archives or libraries.<sup>3</sup> This research contributes to the growing discourse on women in science and in particular builds on the scholarship of Ann B. Shteir, Patricia Fara, Barbara T. Gates and Suzanne Le-May Sheffield, who have studied women artists, naturalists, and popularisers of science.<sup>4</sup> Whilst there is nothing novel about the relationship between gender and power, accounts of how individuals responded to societal norms and expectations are uncommon, particularly in the antipodean context. Debra Lindsay has shown with her case studies of the American scientific community that women were shaped by, but also contributed to, the scientific world in intimate ways and this is true of Rich.<sup>5</sup> The dearth of archival material has forced a somewhat more speculative narrative than would otherwise be the case, but Rich’s interests and achievements are assessed in what follows in light of the context in which she thrived.

Rich was one of only four New Zealand women to publish the results of her scientific work before 1901.<sup>6</sup> Two published botanical and the third physiological contributions to annual volumes of the *Transactions of the New Zealand Institute*.<sup>7</sup> All four seem to have published just single articles. None held positions in universities or had easy access to a laboratory, and this hampered further scientific investigation. Working in the domestic space had its limitations. In any case, in contrast to other colonial universities and colleges, New Zealand institutions focused more on producing qualified teachers than on original research.<sup>8</sup> Rich’s unique interest in zoology included illustration. For women, painting either in oils or water-colours was a socially acceptable way to express an interest in the natural world. New Zealand attracted its share of talented women flower painters and botanical illustrators amongst its European settlers. Some at least found a way of earning their own money, although all of the eight generally-recognized New Zealand women illustrators struggled to make a living.<sup>9</sup>

### **Education**

Josephine Rich’s English born father, William Gordon Rich (1829-1912), was a run-holder in Southland, a Justice of the Peace, and actively involved in local Anglican Church affairs: an application to the Land Board to purchase five acres on their behalf in order to build a church was typical.<sup>10</sup> By chance the family was in England on census night in July 1871. From this source, we learn that Josephine was the youngest of five children and the only one not born in New Zealand.<sup>11</sup> The two eldest, Edwin William Gordon, then aged 14, and Maitland Gordon,

12, attended Tonbridge School, the public boarding school in Kent. This was their final year at the school, which is presumably why the family was living (or visiting) Tonbridge on census night.<sup>12</sup>

Josephine's maternal grandfather, Sir John Larkins Cheese Richardson (1810-1878), the politician, died in December 1878 just three months after the return of the Rich family from England.<sup>13</sup> Richardson actively campaigned, in support of Learmonth White Dalrymple, (1827?-1906) for equal educational opportunities for women. They were both instrumental in the University of Otago becoming the first in Australasia to admit women to its classes.<sup>14</sup> However, Dalrymple was ambivalent about careers for her protégées, expecting that a university education would allow women to participate fully "in the educational and domestic duties of life," and moreover, she disliked educated women who became "clever, restless and unfeminine."<sup>15</sup> This fitted with Richardson's aim for women to cultivate their minds "as will make a really good, wife, sister or daughter to educated men."<sup>16</sup> Doubtless Richardson would have been pleased that his granddaughter topped first-year classes in biology, zoology, botany and practical biology, thirteen years after his death.<sup>17</sup> However, her university records are anomalous. She does not appear in the University Calendars, nor in the Otago List of Graduates, and it is unclear whether she actually graduated, as early university records are incomplete.<sup>18</sup> Only students with formal entry qualifications, known as matriculated students, could graduate, but non-matriculated students could attend classes. It is possible that Rich was schooled at home. In England, the Rich family had employed a governess for Josephine, then aged four, and her two older sisters, Georgiana, aged ten, and Mary, eight.<sup>19</sup> It would be reasonable to suppose this practice continued on their return to Toi Toi, the station farmhouse near Fortrose, Southland. None of the Rich girls seem to have attended Otago Girls' High School, the more usual route of entry (for women) to university by the late-nineteenth century.<sup>20</sup> By 1893, women comprised over half of Otago University students, though few took science subjects.<sup>21</sup> Of course, Rich may not have had any intention of graduating; alternatively, she may simply have dropped out—attrition rates were high. Historian Dorothy Page noted a number of very promising women graduates did not live up to initial expectations. For most women, marriage signified a clear change in the direction of women graduates, as it was taken for granted that domestic responsibilities dictated the course of their lives.<sup>22</sup>

The class lists for 1891 feature Rich and three others. One, Florence McKerrow, sat a single botany exam and nothing further is known about her.<sup>23</sup> The other two both appeared in subsequent lists though only one graduated. Helena Baxter (c.1863-1931) and Emily Siedeberg (1873-1968) both sat the same zoology and biology exams as Rich in 1891 but were placed lower. The records for Baxter are just as inconclusive as they are for Rich. In 1892 Baxter failed her second-year undergraduate course, but in November 1896 had completed three years as a medical student.<sup>24</sup> Like Rich, she does not seem to have graduated. Later, in 1903, she married Thomas Kay Sidey (1863-1933), a lawyer and recently-elected Liberal Party parliamentary member for Caversham, Dunedin, thereby fulfilling the aims of both Dalrymple and Richardson for a knowledgeable companion.<sup>25</sup> Siedeberg's career is better-known, for she gained fame as the first woman to take a medical degree in New Zealand, graduating in 1896, and later had a thriving practice in Dunedin.<sup>26</sup> Whether Rich formally graduated is to some extent immaterial as it is clear that her teacher, Professor Parker, championed her ability as a student.

Parker arrived in Dunedin in 1880 after eight years working for Thomas Henry Huxley (1823-1895) in London as demonstrator and organiser of numerous practical classes. Suitably-qualified and experienced, the thirty-year-old held two positions concurrently: professor of biology, and curator of the Otago University Museum. During his first public lecture, which opened the University session in May 1881, he stated emphatically that he was an evolutionist

and follower of both Darwin and Huxley. He laid before the audience a plan of campaign for teaching undergraduate biology, and promoted original research as part of postgraduate study: “the conscientious student will derive the greatest benefit [from it], and it is in the fostering of research on the part of its members that a university performs its highest duty” he declared.<sup>27</sup> Parker supervised very few post-graduate students, and only Rich co-authored a technical paper with him.<sup>28</sup> Lack of opportunity hampered careers of would-be academics, a problem common the world over but particularly acute in the nascent academic world of New Zealand. Parker supervised Charles Chilton’s (1860-1929) doctoral studies on terrestrial crustaceans that he gained in 1893. But Chilton was forced to give up hope of an early career in academe, so re-trained as a medical doctor and practiced in Christchurch as an ophthalmic surgeon. He retained a research interest in zoology and eventually became professor of biology at Canterbury.<sup>29</sup> Parker’s hopes of study for study’s sake remained largely unfulfilled for many students. He accused the community of apathy towards intellectual effort, which resulted in a shortage of suitable candidates. After thirteen years of teaching, he said “our university system is also to blame.” He explained that if universities were ever to perform their highest function, by which he meant original research, then “it must become the recognised thing for a student who has shown special aptitude to go on working at the subject of his choice until he has acquired a critical knowledge of it.”<sup>30</sup> Rich had such special aptitude.

### Drawings

Over the summer months of 1889-1890, Dunedin hosted the New Zealand and South Seas Exhibition, an inter-colonial show produced to commemorate the colony’s jubilee. It was modelled on the established formula for international exhibitions set by the 1851 Great Exhibition in London. Praise for the extensive natural history court was fulsome, and animals were exhibited in an evolutionary order following Darwinian ideals. Patrons could follow a black line painted on the floor which emulated an evolutionary tree and channelled both their attention and progress around the exhibits.<sup>31</sup> Parker conceived and organized the exhibit, aided by Rich and museum staff. Some animals could not be shown because they were either too small or too large. So, pictures and models replaced those that could not fit into glass jars, or were not available as stuffed or skeletal specimens. One reporter noted that “five wall diagrams, showing the restoration of extinct animals, by Miss Gordon Rich, are instructive exhibits.”<sup>32</sup> These diagrams have not survived, but other drawings of hers have. In 1893, she presented the Otago University Museum with thirty-two small water-colours and pen-and-ink drawings. Some, but not all, had been on display in the exhibition three years before. Parker duly registered them in his newly-instigated formal Museum Registers, so highly did he value her contribution. Among them is a pen-and-ink drawing she re-drew for the exhibition: B.296 *Hastigerina* (Figure.1.) a microscopic amoeba-like foraminifera. The inspiration for *Hastigerina* came from a set of *HMS Challenger* expedition reports. The *Challenger* expeditions were large-scale investigations into the marine environment. Funded by the UK Government, the results eventually filled fifty volumes of official scientific reports. One volume, available in Dunedin, featured foraminifera, although why Rich chose to copy *Hastigerina* over the other examples remains a mystery.<sup>33</sup> *Hastigerina* also featured in the textbook that Parker co-authored, *A Text-book of Zoology*, this time re-drawn by his youngest brother Michael Prendergast Parker (1859-1934), a London-based artist who made his living as a scientific illustrator.<sup>34</sup> This rendition is not so fine, due in part to the medium: the textbook used wood-cuts, so the image could be printed on the same page as the body of the text. The expedition reports printed separately bound plates executed as lithographs that allowed a finer line, but Rich’s pen-and-ink drawing show an even finer line.



Figure 1. Josephine Gordon Rich, pen-and-ink drawing of *Hastigerina*, as shown at the New Zealand and South Seas Exhibition, 1889-1890, now in the Otago Museum. B.296.

Rich also drew original zoological subjects for publication, and nine appeared in the *Textbook of Zoology*, as acknowledged in the preface, though none have survived.<sup>35</sup> The book was published in December 1897, just a few weeks after Parker died from diabetes. It had an extremely long shelf life, and although much altered, the last thoroughly-revised edition appeared in 1972 and is still in print.<sup>36</sup> The book was jointly-authored by Parker and his colleague from Sydney University, Challis Professor of Zoology, W. A. Haswell, who had married Rich in 1894.<sup>37</sup> Where authorial responsibilities lay for each chapter of *A Textbook of Zoology* cannot be discerned from the written word, but from the surviving correspondence between the men, it is clear Haswell wrote the mammal chapter.<sup>38</sup> The correspondence survives in a single letter-book kept by Parker. It is a one-sided record of their exchange, and begins well after the collaboration was underway. Nonetheless, the letters provide glimpses of the life of his former student and her husband in Sydney. In August 1896 Parker wrote to Haswell that he was “very glad to hear Mammalia are progressing ... I shall be greatly disappointed if you don’t have a side dissection of the Rabbit ... if you prefer it I’ll have a go at it but I should be awfully sorry to see it left out.”<sup>39</sup> In Britain, university-trained biologists invariably undertook a course of formal drawing, or proof of competence, as a prerequisite to entry.<sup>40</sup> Parker’s offer to draw the rabbit stemmed from the similar drawings he had made for other vertebrates, and as an accomplished zoological artist in his own right he was confident of his ability. However, Rich drew the rabbit and is acknowledged in the preface. It is possible Parker did not know she had drawn it when he saw the drawing in September: “your external bunny is magnificent,” he wrote to Haswell.<sup>41</sup> Rich was unusual in continuing her zoological interests after marriage, even if it only extended to drawing for the textbook. None of the plates or figures that accompanied Haswell’s technical papers were drawn by Rich.

Rich’s high-level of drawing skill was borne not just from a lady-like copyist’s skill of the sort encouraged as an accomplishment or demonstrated by her at the New Zealand & South Seas Exhibition; rather, it came from dealing directly with the animals she worked on. She was,

like her mentor Parker, a hands-on zoologist. She dissected her own creatures, stained the tissues and examined them under the microscope; her engagement with the messy material world was both intellectual and practical. Jars containing the stomach of a sheep, a sturgeon (a primitive fish) and a kiwi preserved in alcohol, survive in the Otago Museum storeroom.<sup>42</sup> These specimens suggest Rich collaborated closely with Parker, and was probably involved with his innovative method of preserving cartilaginous fish and soft body-parts using hot glycerine.<sup>43</sup> A crayfish preserved in this fashion survives in the Otago Museum, but the extent or nature of her involvement in its preservation remains unknown. The Christchurch newspaper reported she presented eleven stuffed fish to Canterbury Museum in 1893 when she moved there, although what has happened to them since is unclear.<sup>44</sup> Additionally, she provided Henry Suter (1841-1918), zoologist and palaeontologist, with some mollusc specimens, and from his manuscript notebooks it appears he originally thought to erect a new species in her honour. He wrote: “Forterose Miss Rich *Charopa Richi*. n.sp.,” (n.sp. being a widely-used abbreviation for *nova species* or new species) but has later crossed the species name through to make it read “*anguiculus* v. *montivago*,” meaning he had decided to place it as a variant of *anguiculus* species called *montivago*.<sup>45</sup> All of the specimens indicate that Rich’s interest in zoology ran deeper than a single-year’s worth at university would suggest. Additionally, hers is the only female name to appear in the New Zealand section of an international directory of natural scientists for 1894, a short-lived annual compendium that attempted to be a “Who’s Who” of both professional and amateur workers. She has listed her expertise as Crustacea.<sup>46</sup>

Rich was happy to share her knowledge with other women in her circle. At a meeting of the Ladies’ Savage Club she “provided a really excellent entertainment for the large gathering of ladies present.”<sup>47</sup> The exclusively male Savage Club regularly attracted two hundred members to weekly meetings. There, senior members dressed up as savages and looked like “genuine savage[s] who delighted in making soup out of fair women and grilling the dear baby for a tit-bit. . . . they wore mocassins [sic], red and blue blankets, and wigs with feathers in, and looked very well indeed.”<sup>48</sup> By today’s standards, the proceedings seem racially and politically incorrect with the men unaware that their antics could cause offence or be divisive. The “delightful evening” of intended harmless entertainment contained many humorous “recitations, and songs and coffee.” Once every two months, a ladies’ evening was presented as “something of a peace offering” to the ladies who endured absences of their men every Monday evening. The men practised their home-grown entertainment in the interim and took pains to decorate the venue to appeal to the women. On one occasion, the schoolroom was “artistically arranged, the walls draped with pink and white, and adorned with fans.”<sup>49</sup> Conceived in London, as a club for those with artistic, literary, musical or scientific interest for the pursuit of happiness, the first New Zealand club opened in Invercargill in 1885 and quickly spread through the country.<sup>50</sup> However, it is not clear whether Rich provided entertainment at one of these ladies nights, or whether it was an entirely separate women-only club with a similar name: “Miss Gordon Rich was very successful in her biological item—a short lecture on the supposed sea serpent, giving probable explanations of the hallucinations in many cases. The lecture was illustrated by about a dozen large coloured drawings, which helped to make it highly instructive as well as very amusing.”<sup>51</sup> The reporter only noted women’s names in the paper, and such rational entertainment hardly sounds like the same sort of light-hearted evening as the men enjoyed. The illustrations probably featured the ribbon-fish, *Regalecus*, the result of an anatomical investigation published some years before by Parker in a London-based scientific journal.<sup>52</sup> Ribbon-fish occasionally washed up on Otago’s beaches, and because of its length of twelve feet or more was presumed to be an origin for the sea-serpent of sailor’s tales.<sup>53</sup> The technical paper was noted for “the very handsome and splendid way in which the paper is illustrated. There are in all five plates about a foot square, coloured in a style altogether

unique and beautiful.”<sup>54</sup> Did Rich re-draw them for her exposition? It seems more probable that she took the volume, or an offprint of the article itself, along to show the others at the meeting.

In May 1892, Rich joined the Otago Institute, a branch of the New Zealand Institute formed along the lines of learned societies in Britain. By this time in Britain there were many well-established specialist scientific societies; for example, the Geological Society (founded 1807), the Zoological Society (1862) and the Chemical Society (1841), mostly London based.<sup>55</sup> Unlike these very specialized societies, the Otago Institute drew its members from a variety of educated and professional ranks, and included engineers, teachers, surveyors, clergy and medical men, as well as all the university professors.<sup>56</sup> The structure of the New Zealand Institute, set up under a Parliamentary Act in 1867, ensured it had some government funding. This made it crucially different from British learned societies whose members provided the sole source of income through subscriptions. In New Zealand, local branches were expected to be self-financing and annual subscriptions of about a guinea were collected from each member.<sup>57</sup> Whilst the Otago Institute was one of the strongest of the federation of institutes set up under the Act, it nonetheless struggled to attract new members or retain those for whom science was not much more than a passing interest. Monthly meetings covered a mixture of items, including: notices of research underway at all of the affiliated branches of the New Zealand Institutes; longer papers on original scientific work; notices about wider developments in science (mostly British); and exhibits of new acquisitions for the library or museum. In “ordinary meetings” of the Otago Institute, discussions and conversations took place amongst a corps of like-minded individuals proud of their collective achievements. Council members took a broader view, and saw their duty to impart knowledge beyond the confines of the monthly meetings, so they held annual gatherings, or *conversazioni*. Like British societies, however, entry by ticket to the event controlled admission. In 1880, members received two tickets, but to “outsiders[,] tickets would be sold.”<sup>58</sup> Ten years later, after some costly failures, the tickets were “priced at five shillings for gentlemen whether members of the Inst[itute] or not, but ladies [should] be admitted free.”<sup>59</sup>

The presence of ladies in the Otago Institute is significant. This practice differed from that in similar societies in Britain. There, women were originally debarred from membership of most learned societies (a notable exception being the Botanical Society of the British Isles), although towards the end of the century provincial societies opened their doors.<sup>60</sup> Women were admitted as members of the Otago Institute from time to time. Fanny Wimperis (1840-1925) and her sister Jenny (1844-1929), both artists and friends of Parker, gained admission in 1883 and 1884 respectively. Miss Browning (*fl.* 1880s-1890s), a teacher at the Girls’ High School, became a life member in 1895, and fellow teacher Miss Marchant MA (*fl.* 1880s-1900s) joined in 1896.<sup>61</sup> On the election of Rich in 1892, the then chairman claimed it was not “generally known, that ladies could become members, but now that the woman question was coming forward he hoped there would be a large accession of lady members.”<sup>62</sup> The “woman question” referred to women’s suffrage, won by New Zealand women in 1893. Rich renewed her membership in 1893, but not thereafter because she had moved away from Dunedin.

### **Original zoological work**

Crustaceans, particularly crayfish, provided a recurrent research interest for Parker. They formed the subject of his first scientific paper, and he had even worked on them during the voyage to New Zealand.<sup>63</sup> Given this background, and the fact that Chilton studied crustaceans during the years while Rich attended Parker’s classes, it is hardly surprising that Rich should follow suit. Rich and Parker undertook their research on crayfish firstly in order to update knowledge of the musculature of antipodean crayfishes. And secondly, so that biology students

in Australia and New Zealand had a local example to examine for themselves. It is impossible to decipher from the published paper where individual responsibilities lay, but one can assume the “we” used throughout does indeed apply to both investigators. A large part of the paper reports on observations made at a superficial, that is surface, level, but by page seven references are made to dissection of deep muscle. In order “to make out the connection of the various bands [of muscles] with one another it is necessary to cut and reflex [turn backwards] the superficial ones.”<sup>64</sup> It is important to remember that descriptions of animal anatomy like this were not made from one specimen, if at all possible, but from repeated dissections and observations. Crayfish were common animals and easily obtained. Rich’s observational science equally matched Parker’s greater experience. It was not earth-shattering science, the aims being modest. The pair belonged to that “vision of scientific work that glorifies the plodding reliability ... the devotion to precise measurement endlessly repeated” as historians Lorraine Daston and Peter Galison categorise the fostering of disinterested objective scientific personas that occurred in the late-nineteenth century.<sup>65</sup>

Parker had less time to devote to research than he probably wished. When he sent a presentation copy of their joint paper to his mentor, Huxley, in October 1893 he wrote, “I have had such a press of University and Museum work since my return [from a visit ‘Home’ to England] that there has been little time for thinking of anything else.” Aware that Huxley had retired and did not follow current research as formerly, Parker added, “[I] have not the slightest wish that you should read the paper, but I do hope you will look at the plates and acknowledge that your old friend the crayfish isn’t yet played out!”<sup>66</sup> The remark about crayfish being an “old friend” refers to the book *The Crayfish* that Huxley wrote for the International Science Series and which Parker had seen through the press just before moving to New Zealand in 1880.<sup>67</sup>

Rich and Parker’s paper joined others written by a galaxy of nineteenth-century Australian and New Zealand natural scientific workers, in a special volume memorialising the life of zoologist and Australian politician Sir William Macleay (1820-1891). It was published by the Linnean Society of New South Wales, where Macleay had been instrumental in its founding and was elected as the first president of the society.<sup>68</sup> Each paper in the volume was critiqued in turn in the pages of *Natural Science*, a London-based “monthly review of scientific progress.”<sup>69</sup> The reviewer noted the “remarkably clear” plates of the crayfish paper; similar praise was not forthcoming for other papers in the volume. The illustrations that accompanied an article by Professor Baldwin Spencer (1860-1929), Melbourne university zoologist, on blood vessels of a lungfish were “over-diagrammatic in style,” whilst Captain Hutton’s shells “will be more satisfying to the eye of the conchologist than they are to that of the artist.”<sup>70</sup> For their joint paper, Rich drew the bulk of the illustrations—twenty-five from the total of twenty-seven figures. They varied in size and in content and included cross sections across and along the body, dissections seen from the top and from below, and close-up drawings of individual muscles from the crayfish’s legs, antennae, and mouthparts. Rich’s figures are distinguished by fine lines and deep shading which are contained within a confident single outline (Figures 2. and 3.). It is these features that contribute to the clarity noted by the reviewer. Nineteenth-century artistic conventions, noted by art historian Ann Shelby Blum, included a single light source and symmetrical composition of the figures on the page, and these guided Rich’s hand.<sup>71</sup>

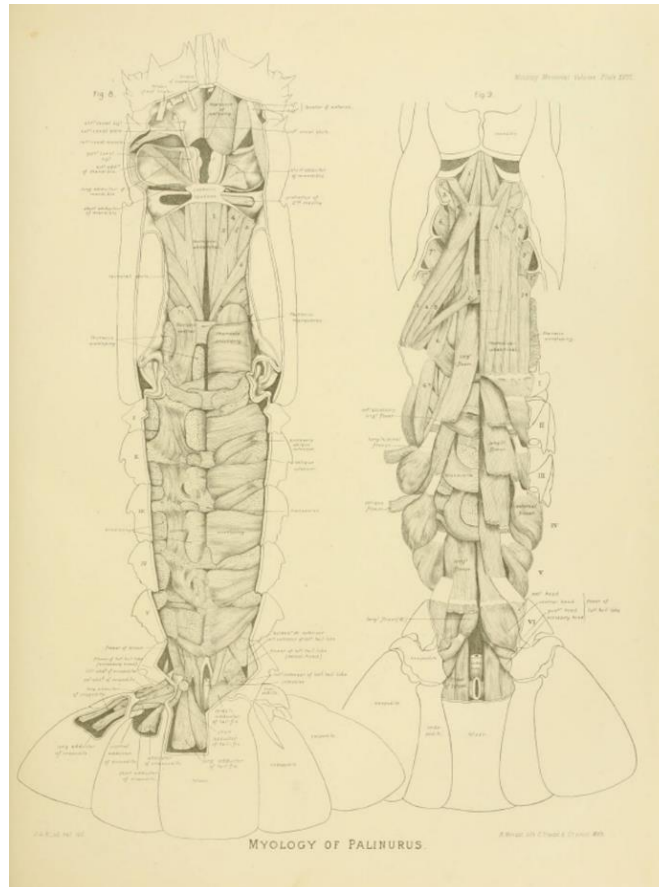


Figure 2. Plate XVIII, “Myology of Palinurus” from T. Jeffery Parker and Josephine Gordon Rich, “Observations on the Myology of *Palinurus edwardsii*, Hutton,” in *Macleay Memorial Volume*, ed. J. J. Fletcher (Sydney: Linnean Society of New South Wales, 1893), n.p.

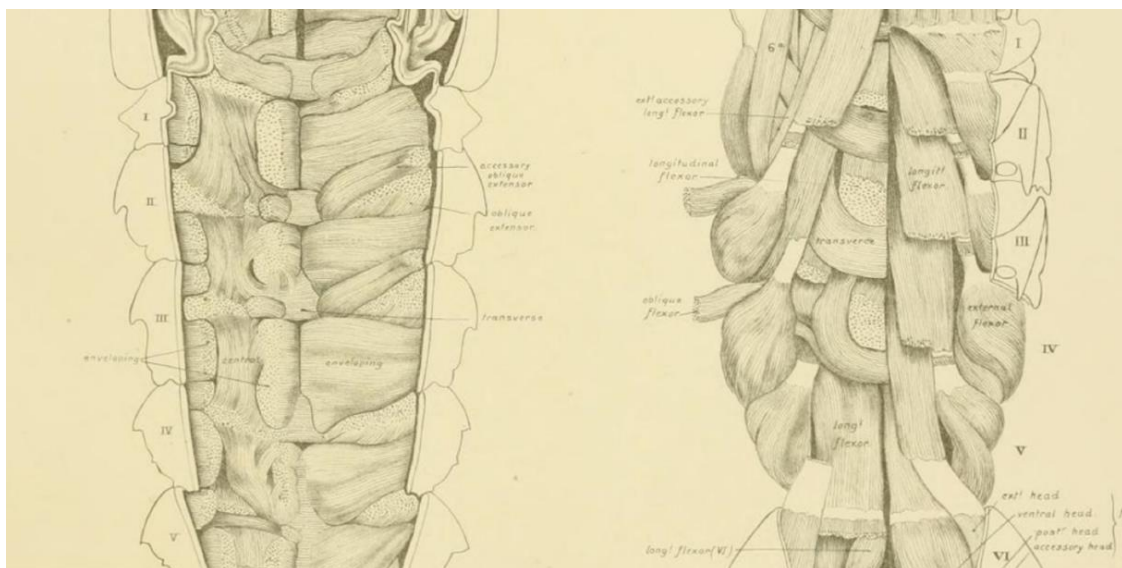


Figure 3. Close-up of Plate XVIII, showing fine lines, deep shading and single outlines.



Rich drew directly from her observations as the key J.G.R. *ad.nat.delt.* (*ad naturam delineavit*) placed at the bottom of each plate indicates. Parker's two illustrations were deliberately called diagrams, and signed simply T.J.P. *delt.*, meaning they were not drawn directly from specimens but showed summary information of how the muscles are arranged in the crayfish body. His diagrams were the only coloured plates with each muscle group depicted in yellow, blue, orange, red, green, and brown so that the ventral and side aspects could be easily compared.

Rich's skill with the pen matched her skill with the dissecting knife and the necessary other practical skills involved. She would have worked on a bench facing the window with the specimen pinned to a wooden block with a narrow bead round its edge to contain "the mess caused by escape of blood" and other bodily fluids.<sup>72</sup> Smaller dissections of parts of the animal were generally conducted under water in a dish. Amongst the tools of the dissector's trade were large pins, small hammers and sets of dissecting instruments made of best quality steel. Ideally these included "three or four scalpels of varying sizes. A large and small pair of scissors. A large and small pair of forceps," and a "seeker."<sup>73</sup> The last item, a blunt bent needle fixed in a handle, was usually made by the dissectors themselves. Rich then, like other women of scientific bent, had to acquire skills with tools not normally considered lady-like accomplishments. However, aside from drawing, Rich was not short of other lady-like accomplishments.

### **Lady-like pursuits and domesticity**

Like her father, Rich actively supported the activities of the Anglican Church. During her time in Dunedin she played solo violin at various events to raise funds for the building of St Paul's Church in the Octagon, on one occasion "in a bold and skillful manner."<sup>74</sup> In 1893, she moved to Christchurch, for unknown reasons, and there played solo at an annual concert at St Peter's, Riccarton.<sup>75</sup> She also played viola in a string quartet for Mr Wallace's Chamber Series, and the ensemble had several engagements throughout the winter months.<sup>76</sup> A more ambitious programme the following year tested the quartet's abilities, where they played Haydn's "well-known Emperor. The first movement went rather coldly, but in the second the melody was given with a good deal of success," the reviewer noted.<sup>77</sup> Other concerts followed at the art gallery, where there was a large attendance.<sup>78</sup> It is easy to speculate that among the audience was her future husband, William Haswell, as their engagement was announced in July and they married in August 1894.<sup>79</sup> Their wedding, officiated by Anglican Rev. Archdeacon Lingard, took place in Christchurch, and was attended by Rich's brother Maitland Gordon and his wife Mabel, the second daughter of biologist Captain Frederick Wollaston Hutton (1836-1905).<sup>80</sup> Both Rich siblings married into families much interested in scientific matters. Hutton, a versatile zoologist and geologist, had accepted the chair of biology in Christchurch, and moved there in late 1879, leaving the post of curator of Otago University Museum vacant that Parker filled.<sup>81</sup> The New Zealand scientific world was small but matrimony further consolidated the close-knit network.

The Haswells settled to life in Sydney, and although there are no surviving journals, diaries or letters from Rich herself, we get glimpses of their activities through the correspondence between Parker and Haswell and from brief newspaper accounts. For instance, in April 1895, it is clear house renovations were underway as Parker wrote: "I hope the additions to the house will be eminently satisfactory."<sup>82</sup> When, ten days later, he reported he had a big biology class with 28 students, he exhorted his colleague to "tell Mrs Haswell there are 5 girls, this is worse (or better?) than when she attended!"<sup>83</sup> In May, he pined for the company of his former student "I wish I could transfer myself to Sydney and hear Mrs Haswell play a piece on her violin."<sup>84</sup> Then in June 1895, after the birth of her son, Parker was ecstatic: "How are the Madonna and child progressing? You will be sure to send me a copy of the first

photo you have taken. Does the little chap yell much at night?"<sup>85</sup> Parker enquired frequently on the progress of the baby son "I am glad to hear the infant is booming along so satisfactorily ... I suppose he hasn't cut any teeth yet."<sup>86</sup> Later that month, in July, "I am delighted to hear of the [illegible] of the wife and family. The fighting weight of the latter seems very satisfactory."<sup>87</sup> In August, Rich returned to society and played her violin at an "at home" for the Women's Literary Society that she had joined.<sup>88</sup> The Professor and wife took an active part in Sydney society attending functions together, implying that a nurse looked after the baby.<sup>89</sup> However, it came to an end with the death, in November, of Archibald, aged five months, from causes unstated in the papers and unremarked on by Parker.<sup>90</sup> Infant mortality was an all too familiar occurrence in the late-nineteenth century but it clearly affected the Haswells very deeply.

Once the work of the joint authorship settled back down into continued correspondence between the two men, Parker alluded to the tragedy at the end of January 1896, when he wrote: "We are both very much grieved to hear that the Frau isn't making anything like rapid progress. But I daresay it will take some time for the change to show its effect."<sup>91</sup> Time passed, and a year on newspaper accounts reveal the Haswells once again took a full part in Sydney's round of Women's Literary Society "at homes," spring balls and garden parties.<sup>92</sup> More glimpses of suburban Sydney life are revealed in Parker's letters. In May 1897, his envy of the better pay that a Sydney professor could command compared with a Dunedin one are tempered by Parker's well-known sense of humour: "I hope Joe [Josephine] and the pony are flourishing you must feel an awful swell driving to work in your 'kerridge' and consider my bike quite plebeian. We are all going on in our usual jog-trot fashion."<sup>93</sup>

In September he comments again on the acquisition of the pony: "Please give Joe my [illegible; thanks?] for her most interesting letter and accompanying photo. As usual she doesn't come out quite as well as she ought but the hat is splendid so is the pony." In the same letter he also comments on the clearly happy marriage, "what a blessing it is that you two are such chums & have so many tastes in common. Think what a difficult thing your life would have been if Joe had been devoted to society or her if you had been a haunter of class!"<sup>94</sup> The letters stop abruptly, for Parker died in November from diabetes, a disease that he had managed to hide from most people. He had finished proof-correcting the final pages of the manuscript just a few days beforehand and the two-volume book was published posthumously. The work of revisions fell on Haswell's shoulders, and in later years Mary, their daughter (born 1899), reminisced that he "worked long hours into the night, going through the book alone and unaided, correcting his own proofs when a new edition was due."<sup>95</sup>

This solitary picture belies the interest that Rich had taken in the formation of the original book. She had not lost interest in her husband's work, but quite likely had not had the opportunity to keep up to date. It is completely possible that she made transcriptions and helped with translations and thereby contributed to her husband's career. She was a helpmeet of the sort noted by Debra Lindsay in her study of American scientific couples.<sup>96</sup> Rich worked willingly as part of a team, but to give both Parker and Haswell their dues they acknowledged her efforts, her drawings were credited, and both her specimens and artwork registered in the museum. The only piece of evidence about Parker's wife and his attitude to her stems from the dedication in his first book: "To my friend and critic C. E. R. P I dedicate this book."<sup>97</sup> It hints at a working partnership, but only those who knew the couple well would have been able to work out the cypher—Charlotte Elizabeth Rossell Parker (d.1893). Any influence she may have exerted on Parker remains unknown. Charlotte died in Scotland in December 1893, some months after Parker had returned to New Zealand after they had taken a trip "Home."<sup>98</sup> What the circumstances were that led them to separate is another unknown. Parker's sister, Elizabeth, later came out from England to take care of the three Parker boys and run the family home.<sup>99</sup>

## Concluding remarks

From her music making and association with women's literary groups it is clear that Rich sought the company of like-minded educated women on both sides of the Tasman sea. Her artistic sense and keen observational eye coupled with intense curiosity allowed Rich to actively participate in New Zealand nineteenth-century science, although she was largely unknown outside that small community. Her hard-won unique zoological expertise on crayfish enabled her to contribute significantly to the published record and to Parker's exhibition work. However, she was not a public intellectual, and once married dropped out of sight from the Australasian scientific scene, in accordance with societal norms. Wives of British scientific men seemed more curtailed than American, Australian or New Zealanders; Sheffield recounts the case of Mary Anne Stebbing, whose unacknowledged drawings of crustaceans littered her husband's zoological publications. Sheffield recounts how Mary Anne was an equal partner to her husband in both a scientific and artistic sense but remained unacknowledged and therefore invisible.<sup>100</sup> While the antipodean situation provided more autonomy than her British counterparts, Rich's life was still proscribed, economically, socially, domestically and to a lesser extent intellectually, by the two men in her life. By uncovering Rich's story, it is hoped that her place as a scientific worker in her own right has been retrieved from the realms of the utterly forgotten.

## Notes

<sup>1</sup> "Birth Certificate," Q4 5c 392 (1866), England & Wales, Civil Registration Indexes; "Death," *Sydney Morning Herald*, 7 September 1940, 12.

<sup>2</sup> A. Warwick Don, "Parker, Thomas Jeffery," in *Dictionary of New Zealand Biography. Te Ara – The Encyclopedia of New Zealand*, www.teara.govt.nz/en/biographies/2p7/parker-thomas-jeffery (accessed 20 April 2009); George B[ond] H[owes], "Obituary Notices of Fellows Deceased [Thomas Jeffery Parker]," *Proceedings of the Royal Society of London* 64 (1898), i-vii; Patricia Morison, "Haswell, William Aitcheson (1854-1925)," in *Australian Dictionary of Biography*, adbonline.anu.edu.au/biogs/A090228b.htm?hilite=haswell (accessed 2 Feb 2015); J. P. Hill, "Obituary Notices of Fellows Deceased [William Aitcheson Haswell]," *Proceedings of the Royal Society London B* 97 (1925), xii-xiv.

<sup>3</sup> The only diaries which in any way reflected a life devoted to science were those of Emma Thomson (c.1850-1894), the wife of school master, zoologist and Presbyterian elder, George Malcolm Thomson (1848-1933). However, they are a record of domesticity, with only an occasional reference to her husband's studies. Emma Thomson, Diaries 1887-1894, MS-1312/001 to MS-1312/006, Hocken Collections, Dunedin.

<sup>4</sup> Ann B. Shteir, "Gender and 'Modern' Botany in Victorian England," *Osiris* 12 (1997): 29-38; Patricia Fara, *Pandora's Breeches: Women, Science and Power in the Enlightenment* (London: Pimlico, 2004); Barbara T. Gates, "Those Who Drew and Those Who Wrote: Women and Victorian Popular Science Illustration," in *Figuring It Out: Science, Gender, and Visual Culture*, ed. Ann B. Shteir and Bernard V. Lightman (Hanover, N.H.: Dartmouth College Press; University Press of New England, 2006), 192-213; Suzanne Le-May Sheffield, *Revealing New Worlds: Three Victorian Women Naturalists*. (London: Routledge, 2001).

<sup>5</sup> Debra Lindsay, "Intimate Inmates: Wives, Households, and Science in Nineteenth-Century America," *Isis* 89 (1998): 631-52.

<sup>6</sup> Mary R. S. Creese and Thomas M. Creese, *Ladies in the Laboratory III. South African, Australian, New Zealand and Canadian Women in Science: Nineteenth and Early Twentieth Centuries. A Survey of Their Contributions* (Lanham, Maryland: Scarecrow Press, 2010), 79.

<sup>7</sup> Catherine Alexander, "Observations on the Glands in the Leaf and Stem of *Myoporum laetum*, Forster," *Transactions and Proceedings of the New Zealand Institute* 19 (1886): 314-16; E. Low, "On the Vegetative Organs of *Haastia pulvinaris*," *Transactions and Proceedings of the New Zealand*

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*Institute* 32 (1899): 153-57; K. Browning, "After-images," *Transactions and Proceedings of the New Zealand Institute* 25 (1892) 506-09.

<sup>8</sup> Creese & Creese, *Ladies in the Laboratory III*, 79.

<sup>9</sup> Bee Dawson, *Lady Painters: The Flower Painters of Early New Zealand* (Auckland: Viking (Penguin Books), 1999), x-xi.

<sup>10</sup> "The Land Board," *Evening Star*, 13 February 1884, 2.

<sup>11</sup> "Census Returns of England & Wales for 1871," RG10931, 35, Public Record Office.

<sup>12</sup> W. O. Hughes-Hughes, *The Register of Tonbridge School from 1820 to 1886, Also List of Exhibitioners Previous to 1820, and of Head-Masters and Second Masters*. (Tonbridge, Kent: [Tonbridge School], 1886).

<sup>13</sup> "In Memoriam: Sir John L. C. Richardson," *Clutha Leader*, 13 December 1878, 6; "Shipping," *Evening Star*, 17 September 1878, 3.

<sup>14</sup> Olive Trotter, "Richardson, John Larkins Cheese," in *Dictionary of New Zealand Biography. Te Ara – The Encyclopedia of New Zealand*, [www.TeAra.govt.nz/en/biographies/1r8/richardson-john-larkins-cheese](http://www.TeAra.govt.nz/en/biographies/1r8/richardson-john-larkins-cheese) (accessed 8 October 2016).

<sup>15</sup> L. W. Dalrymple, *A Few Words on the Higher Education of Women* (Dunedin: Fergusson & Mitchell, 1872), 5, cited in Barbara Brookes, *A History of New Zealand Women* (Auckland: Bridget Williams Books, 2016), 121; Dorothy Page, "Dalrymple, Learmonth White," in *Dictionary of New Zealand Biography. Te Ara – The Encyclopedia of New Zealand*, [www.teara.govt.nz/en/biographies/1d2/dalrymple-learmonth-white](http://www.teara.govt.nz/en/biographies/1d2/dalrymple-learmonth-white) (accessed 8 October 2016).

<sup>16</sup> John Larkins Christie Richardson, *Thoughts on Female Education: With Especial Reference to the Otago Education Movement*; lecture delivered in Knox Church, Dunedin, on October 11, 1870 (Dunedin: Daily Times Office, 1870).

<sup>17</sup> "University of Otago," *Evening Star*, 5 November 1891, 4; "Minutes" (4 November 1891), Professorial Board 1891-1898, AG-180-015/02, Hocken Collections, Dunedin.

<sup>18</sup> A. D. Macalister and D. W. Taylor, ed., *Roll of the Graduates of the University of Otago: to May 1988* (Dunedin: University of Otago, 1989).

<sup>19</sup> "Census Returns of England & Wales for 1871."

<sup>20</sup> Eleanor Leckie, *Otago Girls' High School, Dunedin, New Zealand. Alphabetical Transcription of Admissions and Withdrawal Registers. 1871-1920*. (Dunedin: Otago Girls' High School, 1997); Dorothy Page, Howard Lee, and Tom Brooking, "Schooling For a Gendered Future: Gender Education and Opportunity," in *Sites of Gender: Women, Men and Modernity in Southern Dunedin, 1890-1938*, ed. Barbara Brookes, Annabel Cooper, and Robin Law (Auckland: Auckland University Press, 2003), 91-122; Creese & Creese, *Ladies in the Laboratory III*, 102.

<sup>21</sup> Patricia Grimshaw, *Women's Suffrage in New Zealand*, 2nd ed. (Auckland: Auckland University Press, 1987), 3.

<sup>22</sup> Dorothy Page, "The First Lady Graduates: Women with Degrees from Otago University, 1885-1900," in *Women in History 2*, ed. Barbara Brookes, Charlotte Macdonald, and Margaret Tennant (Wellington: Bridget Williams Books, 1992), 98-128.

<sup>23</sup> Page "The First Lady Graduates," an appendix lists a possible sister Rachel McKerrow who graduated BA, 1895 and MA 1896.

<sup>24</sup> "Minutes" (3 November 1892); "Minute" (3 November 1896), Professorial Board 1891-1898, AG-180-015/02, Hocken Collections, Dunedin.

<sup>25</sup> Erik Olssen, "Sidey, Thomas Kay," in *Dictionary of New Zealand Biography. Te Ara – The Encyclopedia of New Zealand*, [www.teara.govt.nz/en/biographies/3s15/sidey-thomas-kay](http://www.teara.govt.nz/en/biographies/3s15/sidey-thomas-kay) (accessed 8 October 2016).

<sup>26</sup> "University of Otago Graduation Ceremony," *Otago Witness*, 9 July 1896, 12; David Murray, "Emily Siedeberg's House," *Built In Dunedin* [builtindunedin.com/2016/07/25/emily-siedebergs-house/](http://builtindunedin.com/2016/07/25/emily-siedebergs-house/) (accessed 26 October 2016).

<sup>27</sup> T. Jeffery Parker, "Biology as an Academical Study: 2," *Nature* 24 (13 October 1881): 573-75.

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- <sup>29</sup> R. L. C. Pilgrim, "Chilton, Charles 1860-1929," in *Dictionary of New Zealand Biography. Te Ara – The Encyclopedia of New Zealand*, [www.teara.govt.nz/en/biographies/3c17/chilton-charles](http://www.teara.govt.nz/en/biographies/3c17/chilton-charles) (accessed 8 October 2016).
- <sup>30</sup> [T. Jeffery Parker], "The Weak Spot in Our University System," *Otago Daily Times*, 17 September 1892, 5.
- <sup>31</sup> Rosi Crane, "Show and Tell: TJ Parker and Late Nineteenth-Century Science in Dunedin," *Journal of the Royal Society of New Zealand* 47, no. 1 (2016): 61-66.
- <sup>32</sup> "The South Seas and Early Court History etc," *Otago Witness*, 28 November 1889, 21.
- <sup>33</sup> Henry B. Brady, *Report on the Foraminifera dredged by H. M. S. Challenger during the Years 1873-1876. Zoology Part XXII* (London: HMSO, 1884).
- <sup>34</sup> T. Jeffery Parker and William A. Haswell, *A Textbook of Zoology* 2 vols. (London: Macmillan, 1897). See Fig. 36 in volume 1.
- <sup>35</sup> Parker & Haswell, "Preface," in *A Textbook of Zoology*.
- <sup>36</sup> Rosi Crane, "Creating Parker & Haswell's *A Textbook of Zoology* (1897)," *Script & Print* 39, no. 4 (2015): 221-40.
- <sup>37</sup> Parker & Haswell, *A Textbook of Zoology*; "Marriages," *Press*, 29 August 1894, 1.
- <sup>38</sup> Crane, "Creating Parker & Haswell."
- <sup>39</sup> Parker to Haswell [hereafter TJP to WAH], 5 August 1896, in "Letterbook 1895-1897," T. Jeffery Parker, Special Collections & Archives, Arts and Social Studies Library, (416/4), 121, Cardiff University.
- <sup>40</sup> "Notes [Training Science Teachers]," *Nature* (29 May 1873): 92-93.
- <sup>41</sup> TJP to WAH, 14 September 1896, Letterbook, 141.
- <sup>42</sup> Sheep VT2805, Sturgeon VT2803 and kiwi AV10572. In the museum database, these are recorded as all collected in 1890, well before the official museum registers start.
- <sup>43</sup> T. Jeffery Parker, "On a New Method of Preparing Cartilaginous Skeletons and Other Soft Animal Structures," *Transactions and Proceedings of the New Zealand Institute* 14 (1881): 258-64.
- <sup>44</sup> "Canterbury Museum," *Press*, 4 April 1893, 6.
- <sup>45</sup> Pamela Hyde, email to author (19 November 2016), from Henry Suter's notebooks.
- <sup>46</sup> Samuel E. Cassino, *The Scientists' International Directory* (Boston: S. E. Cassino, 1894).
- <sup>47</sup> "Alice's Letter to her Readers," *Otago Witness*, 10 September 1891, 37.
- <sup>48</sup> "Alice's Letter to her Readers," *Otago Witness*, 23 May 1889, 33.
- <sup>49</sup> *Ibid.*
- <sup>50</sup> Jock Phillips, "Men's Clubs – Masons" *Te Ara - The Encyclopedia of New Zealand*, [www.teara.govt.nz/en/mens-clubs/page-4](http://www.teara.govt.nz/en/mens-clubs/page-4) (accessed 6 September 2016).
- <sup>51</sup> "Alice's Letter to her Readers," *Otago Witness*, 10 September 1891, 37.
- <sup>52</sup> T. Jeffery Parker, "Studies in New Zealand Ichthyology: 1: On the Skeleton of *Regalecus argenteus*," *Transactions of the Zoological Society* 12, no. 1 (1886): 5-33.
- <sup>53</sup> Tyson R. Roberts, *Systematics, Biology, and Distribution of the Species of the Oceanic Oarfish Genus Regalecus* (Paris: Publications Scientifiques du Muséum, 2012), 42.
- <sup>54</sup> "Books," *Otago Daily Times*, 3 July 1886, 1.
- <sup>55</sup> David E. Allen, "The Struggle for Specialist Journals: Natural History in the British Periodicals Market in the First Half of the Nineteenth Century," *Archives of Natural History* 23 (1996): 107-23; David E. Allen, "The Early Professionals in British Natural History," in *From Linnaeus to Darwin: Commentaries on the History of Biology and Geology Papers from the Fifth Easter Meeting of the Society for the History of Natural History, 28-31 March 1983*, "Natural History in the Early Nineteenth Century," ed. Alwyne Wheeler and James H. Price (London: Society for the History of Natural History, 1985), 1-12.
- <sup>56</sup> Membership lists were published in the annual volumes of the *Transactions and Proceedings of the New Zealand Institute*.
- <sup>57</sup> "Otago Institute," *Otago Witness*, 24 May 1894, 21; "Minutes" (27 June 1888), Otago Institute Minute Book 1883-1898, MS0128B, Hocken Collections, Dunedin; Francis Lucian Reid, "The Province of Science: James Hector and the New Zealand Institute, 1867-1903" (PhD thesis, University of Cambridge, 2007), 52.
- <sup>58</sup> "Otago Institute," *Otago Daily Times*, 23 October 1880, 3.

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- <sup>59</sup> “Minutes” (12 Feb 1890), Otago Institute Minute Book 1883-1898, MS0128B, Hocken Collections, Dunedin.
- <sup>60</sup> David E. Allen, “Changing Attitudes to Nature Conservation: The Botanical Perspective,” *Biological Journal of the Linnean Society* 32 (1987): 203-12; David E. Allen, *The Naturalist in Britain a Social History* (London: Allen Lane, 1976), 169.
- <sup>61</sup> “Minutes” (12 June 1883); “Minutes” (13 May 1884); “Minutes” (10 May 1892); “Minutes” (14 May 1895); “Minutes” (12 May 1896), Otago Institute Minute Book 1883-1898, MS0128B, Hocken Collections, Dunedin.
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- <sup>63</sup> T. Jeffery Parker, “On the Stomach of the Fresh-Water Crayfish,” *Journal of Anatomy and Physiology* 11 (October 1876): 54-60; T. Jeffery Parker, “Notes on the Stridulating Organ of *Palinurus vulgaris*,” *Proceedings of the Zoological Society* 3 (May 7 1878): 442-44; T. Jeffery Parker, “On the Structure of the Head in *Palinurus*, with Especial Reference to the Classification of the Genus,” *Transactions and Proceedings of the New Zealand Institute* 16 (1883): 297-307; T. Jeffery Parker, *Skeleton of the New Zealand Crayfishes (Palinurus and Paranephrops)*, Studies in Biology for N.Z. Students, no 4 (Wellington: Dominion Museum, 1889).
- <sup>64</sup> Parker and Rich, “Myology of *Palinurus edwardsii*.”
- <sup>65</sup> Lorraine Daston and Peter Galison, “The Image of Objectivity,” *Representations* 40 (1992): 81-128.
- <sup>66</sup> T. Jeffery Parker to T. H. Huxley (30 October 1893), Huxley Papers, 24.25, Imperial College Archives.
- <sup>67</sup> Thomas Henry Huxley, *The Crayfish: An Introduction to the Study of Zoology*, International Scientific Series (London: Kegan Paul, Trench Co, 1880), viii.
- <sup>68</sup> Michael Hoare and Martha Rutledge, “Macleay, Sir William John (1820-1891),” in *Australian Dictionary of Biography*, adb.anu.edu.au/biography/macleay-sir-william-john-4125 (accessed 26 September 2016).
- <sup>69</sup> Description from subtitle.
- <sup>70</sup> “Some New Books,” *Natural Science* (February 1894): 142.
- <sup>71</sup> Ann Shelby Blum, *Picturing Nature: American Nineteenth-Century Zoological Illustration* (Princeton, NJ: Princeton University Press, 1993), 228.
- <sup>72</sup> T. Jeffery Parker, *A Course of Instruction in Zootomy* (London: Macmillan, 1884), xvii.
- <sup>73</sup> *Ibid.*, xviii.
- <sup>74</sup> “[Advertisement],” *Otago Daily Times*, 5 August 1892, 1; “Entertainments,” *Otago Daily Times*, 6 August 1892, 3.
- <sup>75</sup> “Entertainments and Social Gatherings,” *Press*, 3 July 1893, 3.
- <sup>76</sup> “News of the Day,” *Press*, 15 July 1893, 7; “News of the Day,” *Press*, 11 August 1893, 4; “Musical Mr Wallace’s Chamber Concerts,” *Press*, 18 August 1893, 6; “News of the Day [Chamber Concert],” *Press*, 1 September 1893, 4; “Musical,” *Press*, 15 September 1893, 5.
- <sup>77</sup> “Musical The Liedertafel Jubilee,” *Press*, 1 June 1894, 5.
- <sup>78</sup> “News of the Day,” *Press*, 7 June 1894, 4; “Musical Mr Wallace’s Chamber Concert,” *Press*, 8 June 1894, 5; “News of the Day [Musical],” *Press*, 20 July 1894, 4.
- <sup>79</sup> “Personal Items,” *New Zealand Herald*, 3 July 1894, 6; “Marriages,” *Press*, 29 August 1894, 1.
- <sup>80</sup> “Marriage,” *Press*, 13 June 1888, 3.
- <sup>81</sup> “News of the Week,” *Otago Witness*, 8 November 1879, 18.
- <sup>82</sup> TJP to WAH, 5 April 1895, Letterbook, 7-9.
- <sup>83</sup> TJP to WAH, 15 April 1895, Letterbook, 10.
- <sup>84</sup> TJP to WAH, 16 May 1895, Letterbook, 18-19.
- <sup>85</sup> TJP to WAH, June 1895, Letterbook, 30-32.
- <sup>86</sup> TJP to WAH, 13 July 1895, Letterbook, 36-37.
- <sup>87</sup> TJP to WAH, 30 July 1895, Letterbook, 42-43.
- <sup>88</sup> “Social,” *Sydney Morning Herald*, 31 August 1895, 6.
- <sup>89</sup> “Social,” *Sydney Morning Herald*, 14 September 1895, 7.
- <sup>90</sup> “Deaths,” *Sydney Morning Herald*, 11 November 1895, 1.
- <sup>91</sup> TJP to WAH, 30 January 1896, Letterbook, 87-88.

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<sup>92</sup> “[Women’s Literary Society],” *Sydney Morning Herald*, 27 June 1896, 7; “Government House Ball: A Brilliant Gathering,” *Sydney Morning Herald*, 18 September 1896, 6; “Government House Garden Party,” *Sydney Morning Herald*, 7 October 1896, 3; “[Social],” *Sydney Morning Herald*, 7 November 1896, 7.

<sup>93</sup> TJP to WAH, 19 May 1897, Letterbook, 162-63.

<sup>94</sup> TJP to WAH, 11 September 1897, Letterbook, 179.

<sup>95</sup> “Births,” *Sydney Morning Herald*, 29 December 1899; Mary Margaret Haswell, to Macmillans (November 4 1948), Macmillan Collection, MS-1089, University of Reading.

<sup>96</sup> Debra Lindsay, “Intimate Inmates: Wives, Households, and Science in Nineteenth-Century America,” *Isis* 89 (1998), 631-52.

<sup>97</sup> Parker, *Zootomy*.

<sup>98</sup> “Deaths,” *Otago Daily Times*, 13 December 1893, 2.

<sup>99</sup> “Table Talk,” *Otago Witness*, 22 November 1894, 46.

<sup>100</sup> Suzanne Le-May Sheffield, “Gendered Collaborations: Marrying Art and Science,” in *Figuring It Out: Science, Gender, and Visual Culture*, ed. Ann B. Shteir and Bernard V. Lightman (Hanover, N.H.: Dartmouth College Press; University Press of New England, 2006), 240-64.