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JAMES HENRY MARRIOTT: NEW ZEALAND'S FIRST PROFESSIONAL TELESCOPE-MAKER

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Abstract: James Henry Marriott was born in London in 1799 and trained as an optician and scientific instrument-maker. In 1842 he emigrated to New Zealand and in January 1843 settled in the newly-established town of Wellington. He was New Zealand's first professional telescope-maker, but we have only been able to locate one telescope made by him while in New Zealand, a brass 1-draw marine telescope with a 44-mm objective, which was manufactured in 1844. In 2004 this marine telescope was purchased in Hawaii by the second author of this paper.

In this paper we offer a biographical sketch of Marriott, describe his 1844 marine telescope and discuss its provenance. We conclude that although he may have been New Zealand's first professional telescope-maker Marriott actually made very few telescopes or other scientific instruments. As such, rather than being recognised as a pioneer of telescope-making in New Zealand he should be remembered as the founder of New Zealand theatre.

Keywords: J.H. Marriott, New Zealand, telescopes

1 INTRODUCTION

In one of his historical papers the noted New Zealand seismologist and astronomer George Allison Eiby (1918–1992) mentioned J.H. Marriott as a "… maker of astronomical telescopes …" (Eiby, 1978: 123) and New Zealand's first professional telescope-maker, and this alerted us to his existence (e.g. see Orchiston, 1998; 2001). Subsequently, one of us (CR) acquired a marine telescope that was manufactured by Marriott in 1844, and this inspired the present study.

In this paper we provide information about Marriott and early scientific astronomy in Wellington, describe his 1844 marine telescope, and speculate on its origin. Finally, we evaluate the suggestion that Marriott should be recognized as New Zealand's first professional maker of astronomical telescopes.

2 J.H. MARRIOTT AND EARLY WELLINGTON ASTRONOMY

James Henry Marriott (Figure 1) was born in London in 1799, the son of William and Alice (née McGuinness) Marriott, and received his schooling in England. On 19 May 1822 he married Sarah Bateman in Hackney, Middlesex, and they had three daughters and two sons. Marriott spent a period working as a reporter for *The Times*, but for many years he also was able to indulge "… an enormous passion for the theatre by acting and producing, especially Shakespearian plays, and became a talented painter, engraver and musician." (Downes, 1990). However, he "… also followed the example of his father by acquiring the skills of optician and mathematical instrument maker." (ibid.).

Marriott's father, William Marriott, is listed by Clifton (1995) in her authoritative *Directory of British Scientific Instrument Makers 1550–1851* as an optician who was active in Leeds during the early 1820s. He followed a long and successful tradition of British telescope-making (e.g. see King, 1979; Warner, 1998), and was succeeded by a son, William Marriott II, who plied his trade at four different London addresses between 1827 and 1845. He is listed in Clifton's *Directory* … as an optician, philosophical instrument-maker, mathematical instrument-maker, telescope-maker, brass tube manufacturer and optical turner, all skills he undoubtedly acquired through his father. William (junior) was succeeded in the business by his wife Mrs A. Marriott, who practised as an optician from 1846 to 1848.

While there is no mention of a James Henry Marriott in Clifton's tome, it is a fair assumption that he also learnt the art of telescope-making

and the manufacture of other scientific instruments when William junior and his wife were being trained in the trade.

On 27 July 1842 J.H. Marriott emigrated to New Zealand in the *Thomas Sparks*, arriving in Port Nicholson on 31 January 1843 (Scholefield, 1939: 28) after a very eventful 6-month voyage (see Neale, 1982).[1] At this time he was "… already in his forties and full of worldly experience." (Scholefield, 1939: 28), and was looking forward to establishing a new life in this distant British colony. As a European settlement, Wellington was a product of the New Zealand Company in England (see Olssen, 1997), and had only been in existence for just over three years.

Figure 1: James Henry Marriott, who was one of the founders of the Oddfellows Lodge in Wellington (courtesy: Warwick Marriott).

Wellington was located on the shores of Port Nicholson at the southern extremity of the North Island of New Zealand (see Figure 2). To the east and west Port Nicholson was flanked by rugged mountains that in the 1840s for the most part were heavily forested, while the Hutt Valley—much of which also was covered in forest—extended northeastwards from the shores of the harbour, fed by the flood-prone Hutt (Heretaunga) River. Initially, European settlement was concentrated on the flood plain of the Hutt River at Petone and on the narrow coastal flat at Thorndon, but as Figure 2 shows, with continuing forest clearance during the early and mid-1840s, small settlements, scattered houses and farms appeared in various places to the north, west and south of Thorndon; in the Porirua area; at several locations in the lower Hutt Valley to the north of Petone; and at Trentham in the upper Hutt Valley (see Bremner 1981; Mulgan, 1939; Ward, 1928). Although no firm figures have been published, a variety of evidence suggests that when Marriott arrived in early 1843 the total European population of the Wellington region numbered between 2,500 and 3,500, the great majority of whom hailed from England (e.g. see Immigration …, n.d.). As such, they represented a cross-section of British society (reflecting the philosophy of the New Zealand Company), but the class system that was dominant back in the British Isles was not entrenched in the new colony, where ability, commitment and dedication—rather than ancestry alone—were paramount.

Long before the arrival of the first Europeans in Port Nicholson, Maori astronomers practised their craft in the Wellington area. However, their system of celestial beliefs was intricately interwoven with religion and mythology (see Best, 1922; Orchiston, 2000), and as such differed markedly from the nautical and positional astronomy typical of European observatories in the 1840s. At this time, surveyors and the captains and officers of sailing ships learnt and regularly used astronomy in the course of their occupations, and they were Wellington's first non-indigenous astronomers. After studying this period, Orchiston (2016: Chapter 21) felt "… justified in identifying William Mein Smith … as Wellington's first resident European astronomer …" Smith (1799–1869) was born in Cape Town, educated in England, joined the British Army, and trained as a surveyor. In 1839 he was employed by the New Zealand Company as their Surveyor General, and in January 1840 he and his team of three other surveyors arrived in Port Nicholson. One of his first tasks was to lay out the towns of Wellington and Petone. Smith spent the rest of his life in the Wellington region (see Jones, 1966; Smith, 1990).

The public first became aware of William Mein Smith's talents as an astronomer in March-April 1843 when the Great Comet of 1843 (C/1843 D1) graced Wellington skies and he wrote about it in one of the local newspapers (Orchiston, 2016: Chapter 21). Note that this comet made its spectacular appearance very soon after Marriott reached Wellington, as if to welcome him to this new land. Less than two years later Smith and Marriott were greeted by another Great Comet, C/1844 Y1, which was a prominent naked-eye object in December 1844 and January 1845 (ibid.). We know from newspaper

reports that both comets generated considerable public interest, which should have created a demand for telescopes. Thus, the timing of Marriott's arrival in Wellington would appear to have been particularly fortuitous.

3 J.H. MARRIOTT AS A PIONEERING NEW ZEALAND TELESCOPE-MAKER

We are bound to wonder whether this public interest in comets in 1843–1845 translated into telescope orders for Marriott. If it did, we would expect to see advertisements by Marriott in the Wellington newspapers of the day, and this is precisely what George Eiby claims. In promoting Marriott as Wellington's—and indeed New Zealand's—first professional maker of astronomical telescopes, he claims that during the 1840s Marriott advertised himself as a "… maker of astronomical telescopes …" (Eiby, 1978: 123) in the *Wellington Spectator and Cook's Strait Guardian* newspaper. What evidence is there for this? The actual name of this newspaper was the *New Zealand Spectator and Cook's Strait Guardian*, which was launched in 1844 and ceased publication in 1865. This newspaper has been digitized, and the contents of each issue, including all advertisements, can be searched electronically using selected key words. Our searches on 'Marriott', 'telescope' and 'astronomy' did not reveal any advertisements (or editorial comments or news reports) about Marriott as a telescope-maker or scientific instrument-maker. So perhaps Eiby simply confused the name of the newspaper, as there were two others in Wellington at this time, the *New Zealand Colonist and Port Nicholson Advertiser* (1842–1843) and the *New Zealand Gazette and Wellington Spectator* (1839–1844). However, electronic searches of both of these also produced the same results: no evidence that Marriott advertised as a telescope-maker during the 1840s. Instead, all three newspapers were peppered with advertisements and reports relating to Marriott's theatrical activities, including his

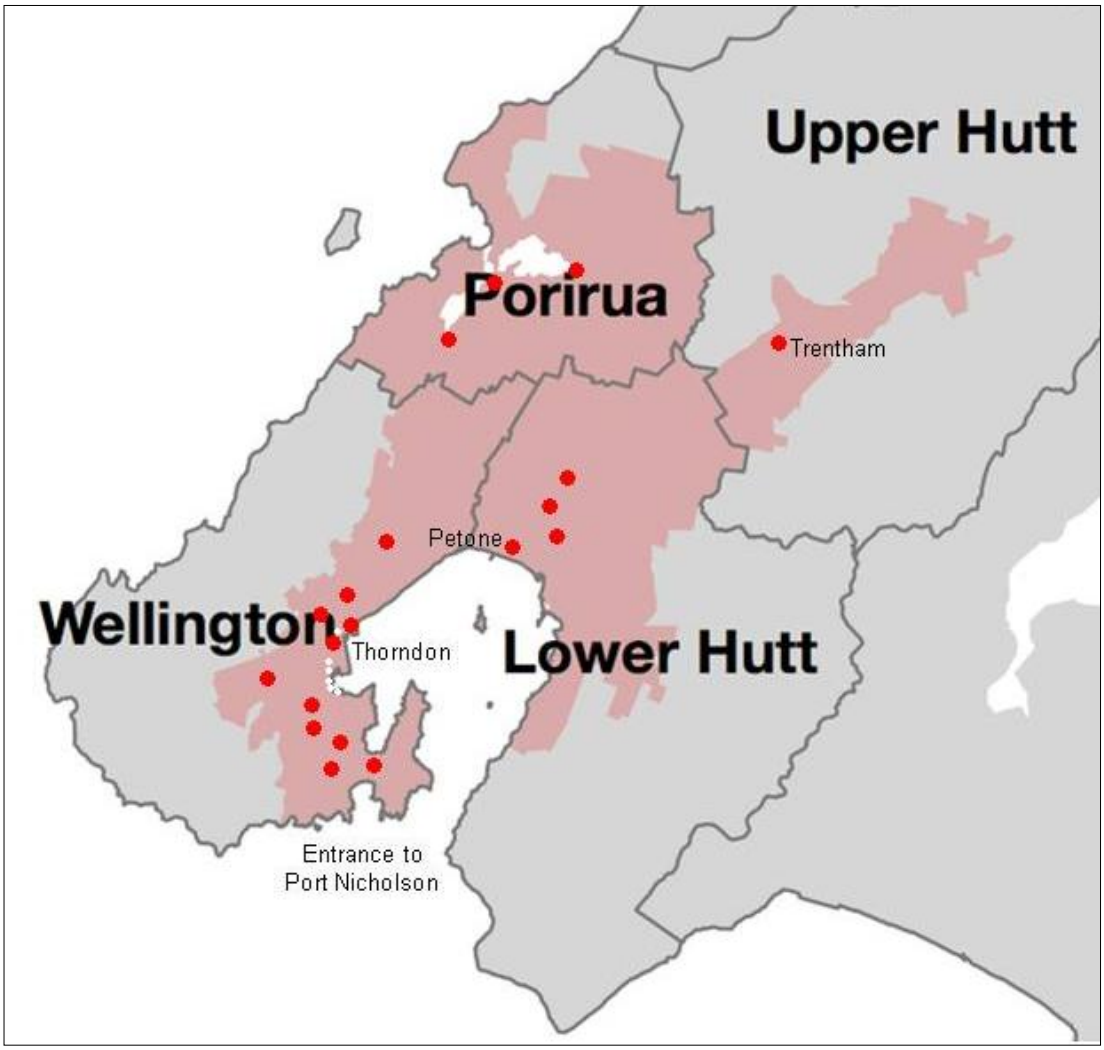


Figure 2: A map of Port Nicholson and the Wellington region. The red dots show the locations of the first European settlements at Petone and Thorndon, and other locations where Europeans settled during the early to mid 1840s in the Wellington and Porirua areas and in the lower and upper sections of the Hutt Valley. The present-day distribution of population is indicated by the pink shading. Since the initial settlement of Thorndon, there has been extensive land reclamation in the area around Wellington city, and the series of small white dots to the north and south of Thorndon show the original location of the shoreline (map: Wayne Orchiston).

Dancing Academy, and this is consistent with suggestions by Downes' (1990) and Scholefield (1939) that James Henry Marriott was a pioneer of New Zealand theatre. One of the present authors discussed Marriott in an earlier paper (Brown, 2014), and upon researching early Wellington newspapers in relation to Eiby's claim he also was unable to find any reference to Marriott and astronomical telescopes.

The reason for Marriott's apparent disinterest in comets and telescope-making is obvious when we examine his preoccupation at this time:

> Marriott quickly involved himself in his first love, theatre. In the months following his arrival he organised, promoted and took part in a season of popular plays which opened on 11 May 1843, in the saloon of the Ship Hotel. These were the first plays to be staged publicly in Wellington, and the first serious attempts at presenting regular dramatic entertainment in the colony.
>
> Encouraged by the success of these performances, Marriott persuaded the owner of the Ship Hotel to build a hall on some vacant land at the rear of his establishment. On 12 September 1843 this was opened with much fanfare as the Royal Victoria Theatre, the first theatre to be built in New Zealand, with the indefatigable Marriott having been involved in almost every facet of its construction. The theatre closed under Marriott's management in November 1843, but in September 1845 he opened the Britannia Saloon (later renamed the Royal Lyceum Theatre) in Willis Street … his enthusiasm and energy were always in evidence as an actor, singer, dancer, musician, scene painter, producer or stage director. (Downes, 1990).

Furthermore,

> … in 1844 Marriott helped to design and build the Olympic Theatre. He carried out the decorations and scenery, and even manufactured from whale oil the gas for lighting the theatre. (Scholefield, 1939: 28).

Comet or no comet, Marriott simply was far too busy to be bothered with telescope-making, and besides, those living in or near Wellington in 1843–1844 and interested in acquiring telescopes already were adequately catered for by three different firms that imported telescopes. Thus, between 3 February and 10 March 1843 the firm of Samuel and Joseph advertised "Day and Night Telescopes" (e.g. see Now's your time ..., 1843), while between 7 March and 1 August 1843 Johnson & Moore, advertised "... Ship Telescopes ..." (e.g. see Ex Indus, 1843) and from 4 April until 1 August 1843 H. Hardeman, Tailor and Draper placed many advertisements for "… first-rate Day and Night Telescopes ..." (e.g. see H. Hardeman, Tailor and Draper, 1843). Yet Marriott still liked to promote his original calling, for a little later his occupation is listed as 'optician' in a "List of all persons qualified to serve as Jurors for the District of Port Nicholson …" (1847), and various rolls in the 1840s all referred to him as either an optician or an engraver.

Over the years Marriott became very well known in Wellington, but not as a maker of telescopes. Thus,

> From the early 1850s until 1885 he ran a small but highly esteemed bookselling and stationery business on Lambton Quay … and was a tireless worker for the Mechanics' Institute and the Tradesmen's Club. Marriott also held several minor provincial government offices, including sergeant at arms, inspector of weights and measures, registrar of cattle brands and registrar of dogs. (Downes, 1990).

Apart from his theatrical talents, he wrote poetry and was an accomplished engraver and artist. Some of his sketches of public functions appeared in the *Illustrated London News* (e.g. see Figure 3), which prompted the New Zealand historian and Parliamentary Librarian, G.H. Scholefield (1939: 28–29) to reflect: "I often wondered whether the public halls of Wellington really looked so substantial and seemly as they appear in Marriott's engravings in the *Illustrated London News*."

After a life full of varied interests and achievements, James Henry Marriott died in Wellington on 25 August 1886 following "… a few days illness, brought on, no doubt, by the recent severe weather …" (Death …, 1886). At the time he was 87, and was described as "… one of the fathers of Wellington …" (ibid.). His wife had died a year and a half earlier (ibid.).

4 IN SEARCH OF MARRIOTT TELESCOPES

4.1 Introduction: The Documentary Evidence

How many telescopes did Marriott make? Books and research papers about New Zealand astronomy do not mention any telescopes made by J.H. Marriott, but what do the newspapers reveal? As mentioned earlier, New Zealand newspapers have now been digitized, which makes searching them using selected 'key words' much easier. During the period that Marriott lived in New Zealand (31 January 1843 to 26 August 1886) at one time or another eight different newspapers were published in Wellington and the neighbouring Wairarapa (see Table 1).

When these newspapers were searched for 'Marriott' and 'telescope' they produced just three articles about Marriott telescopes. The earliest dated to 1852, and it reports that on 26 August Marriott gave a well-received lecture titled "On the Telescope" at the Wellington Athenaeum and Mechanics' Institute:

> On Thursday evening Mr. Marriott delivered a very interesting lecture on the telescope, during which he gave a brief history of the instru-

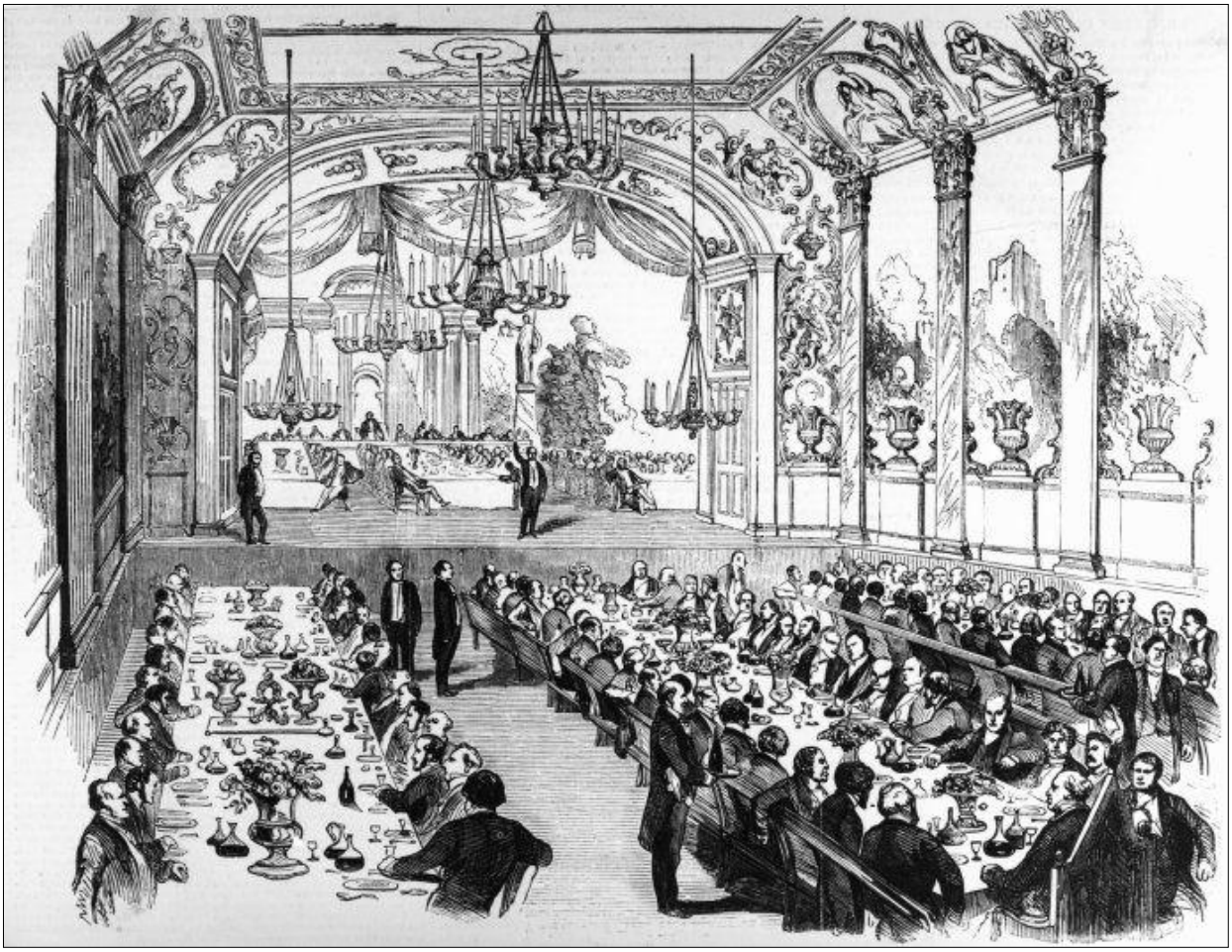


Figure 3: Marriott's sketch of the 3 March 1849 Reform Banquet in Wellington which was published in the *Illustrated London News* in 1850 (after *Illustrated London News*, 1850).

Table 1: Wellington area newspapers, 1843–1886; those that began publication prior to 1843 have dates in parentheses.

Newspaper	Years Published
New Zealand Gazette and Wellington Spectator	(1839) – 1844
New Zealand Colonist and Port Nicholson Advertiser	(1842) – 1843
New Zealand Spectator and Cook's Strait Guardian	1844 – 1865
Wellington Independent	1845 – 1874
Karere o Poneke	1857 – 1858
Evening Post	1865 – 1886+
Wairarapa Standard	1867 – 1887
Wairarapa Daily Times	1879 – 1886+

> ment, and explained in a clear and practical manner the various operations connected with its manufacture, both as regards the nice operations of cutting the lenses, and the construction of the metal tubes, which latter was more fully illustrated by a neat little model, constructed by Mr. Marriott for the occasion, of the machine used for this purpose; numerous diagrams were also exhibited to show the interior construction of the different kinds of telescopes. The lecture was well attended, and the audience, by their frequent applause, gave sufficient evidence of being well pleased with the manner in which the subject was treated. (Athenaeum and Mechanics Institute, 1852).

It is clear from this account, and a similar one that appeared at the same time in the *Wellington Independent* newspaper (1852), that Marriott was still *au fait* with the manufacturing of refracting telescopes, but noticeably absent were any completed Marriott telescopes on display during the lecture. Here was *the* perfect opportunity for him to promote his telescopes before a captive audience, and the fact that he did not do so suggests to us that he had little—if any—personal involvement in telescope-making at this time.

The second Marriott telescope mentioned in the newspapers was in a consignment from Wellington destined for the 1865 New Zealand Exhibition in Dunedin (List of Articles .., 1864). Unfortunately, there is no description of this instrument, so we do not know when it was made, or whether it was a small land or marine telescope or a larger astronomical telescope.

The third Marriott telescope mentioned in the newspapers is a marine telescope that was manufactured in 1844 but only became known to the public in 1931:

> An interesting souvenir of the days when watermen used to ply between the shore and the sailing ships which came to Wellington is now in the possession of the Wellington Harbour Board. It is a telescope in excellent condition and of very creditable workmanship, made, according to the inscription, by T.H. Marriott, of Wellington, in 1844. The telescope was presented to Mr. A.G. Barnett, secretary of the [Wellington Harbour] board, by Mr. J. Thompson, aged 86, who is the last surviving member of the company of watermen who were such an interesting feature of Wellington's early life. (Last of the Watermen, 1931).

While the newspaper survey produced surprisingly few Marriott telescopes, it did reveal that Marriott advertised extensively while resident in Wellington (but—as we have already seen—not in the earliest years he was in New Zealand). Nonetheless, the total number of newspaper advertisements alone was 242, and for some unknown reason these were restricted to just one of the eight available newspapers, the *Wellington Independent*. Even more remarkably, Marriott's first advertisement appeared on 17 November 1849, more than six years after he arrived in Port Nicholson, and his last one was published on 30 October 1873, nearly thirteen years before his death (see Table 2).

An analysis of these advertisements is interesting. Over the 24-yr period from 1849 to 1873 only four different advertisements were used, and these are listed in Table 2 and are shown in Figures 4–7. The first of these advertisements was published in late 1849, not long before Marriott returned briefly to England (to arrange for his wife and some of the children to join him in Wellington), and he only returned to New Zealand in 1851 (Death …, 1886), which would account for the absence of any advertisements in 1850 and the first half of 1851. The fact that the first advertisements specifically listing him as a "Telescope Manufacturer …" appeared in 1853 made us wonder if these were inspired by Comet C/1853 L1 (Klinkerfues), which was a conspicuous naked eye object in New Zealand skies at this time, but the fact that the even more appealing appearances of Comets C/1858 L1 (Donati) and C/1861 J1 (Great Comet, Tebbutt) a little later did not translate into a flurry of 'telescope' advertisements shows that Marriott did not correlate his advertising with the appearance or imminent appearance of major astronomical objects or events. This is confirmed by the fact that he did not advertise at all in 1874, despite the stunning presence of Comet C/1874 H1 (Coggia) and a transit of Venus that not only captivated local astronomers but also motivated teams of professional astronomers from England, France, Germany and the United States to base themselves on the New Zealand mainland or its surrounding islands (see Orchiston, 2004). Furthermore, there was no astronomically-motivated reason to advertise in 1866, 1867, 1868 or 1869—and throughout the whole year in each case. Nor were 1871, 1872 and 1873 astronomically remarkable in any way, yet nearly three-quarters (72.7%) of Marriott's advertisements were published in these three years.

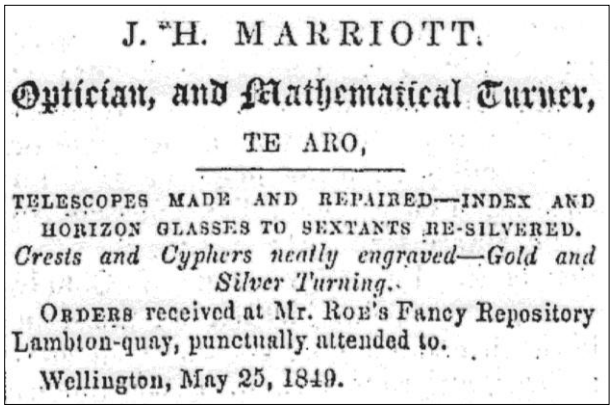
Table 2: The number of advertisements by J.H. Marriott in the *Wellington Independent* newspaper, 1849–1873.

Year	No.	Dates(s) or Date Range	Title of Advertisement
1849	2	17 November & 22 December	"Optician and Mathematical Turner' (Figure 4)
1850	0		
1851	2	12 July & 20 September	"Optical and Mathematical Instrument Maker" (Figure 5)
1852	2	17 January & 8 May	
1853	6	23 July – 22 October	"Telescope Manufacturer, and Metal Turner" (Figure 6)
1854	0		
1855	0		
1856	0		
1857	0		
1858	1	6 October	"Telescope Manufacturer" (Figure 7)
1859	2	28 June & 2 September	
1860	2	11 May & 17 July	
1861	1	19 February	
1862	0		
1863	2	3 & 6 October	
1864	3	7 April – 15 November	
1865	2	26 & 29 August	
1866	8	13 March – 11 December	
1867	15	15 January – 12 December	
1868	11	2 January – 31 October	
1869	6	18 March – 6 December	
1870	1	1 February	
1871	25	14 January – 19 December	
1872	95	24 January – 23 December	
1873	56	7 January – 30 October	

The wording of the four different types of advertisements Marriott used also is interesting, as the focus shifts increasingly from optical and mathematical instrument-making to telescope-making, so by as early as 1858 Marriott wanted to be recognised as a specialist telescope-maker rather than a (more general) maker of mathematical instruments. Marriott's obituary mentions that "He was the only person in Wellington in the early days who could regulate a compass or repair sextants and other nautical instruments." and it is noteworthy that sextants are specifically mentioned in the first three types of advertisements he used (i.e. up to 1853), while quadrants are only listed in the second type of advertisement. Compasses are included in the last three forms of Marriott's advertisements, while the last two types of advertisements show he also was a spectacle-maker. So he was able to make or repair different types of optical aids (spectacles) or scientific instruments, but note that all of his advertisements referred only to 'telescopes', never to 'astronomical telescopes', and they give no indication of the different types of telescopes that he was willing to manufacture.

Apart from advertisements in the *Wellington Independent* Marriott also placed somewhat more attractive advertisements in six different issues of *The Wellington Almanack* (1862: 37; 1865: 21; 1872: 57; 1873: 97; 1875: 105; 1878: 57). In all of these he specifically advertised as a "Telescope Manufacturer" and he specified that he made and repaired telescopes (e.g. see Figures 8 and 9). Note that all but one of these advertisements appeared after he last advertised in the *Wellington Independent* newspaper. Again, it is significant that he did not advertise in 1874, despite an imminent transit of Venus.

Clearly, it was Marriott's advertisements that inspired Eiby's claim that Marriott was a "… maker of astronomical telescopes …" but it is interesting that he never advertised as such. Even when his first advertisement appeared in May 1849—more than six years after his arrival in Wellington—it only mentioned 'telescopes' not *astronomical* telescopes. From Eiby's text, the inference is that Marriott was actively involved in astronomical telescope-making from the time he reached Wellington, but the historical documentation does not support this—as the following section also will testify.



J. H. MARRIOTT.

Optician, and Mathematical Turner,

TE ARO,

TELESCOPES MADE AND REPAIRED—INDEX AND HORIZON GLASSES TO SEXTANTS RE-SILVERED.
Crests and Cyphers neatly engraved—Gold and Silver Turning.

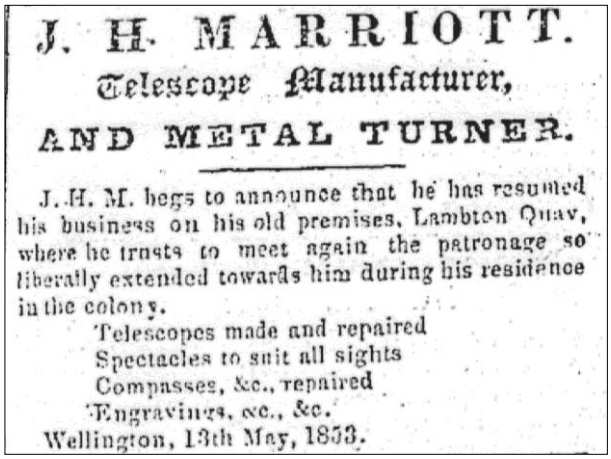
ORDERS received at Mr. ROE's Fancy Repository Lambton-quay, punctually attended to.

Wellington, May 25, 1849.

J. H. MARRIOTT,
Optical and Mathematical
INSTRUMENT MAKER,
LAMBTON QUAY.

GOLD, SILVER, AND METAL TURNER IN GENERAL.

Quadrants and Sextants repaired.
Index and Horizon Glasses re-Silvered.
Superior Object and Magnifying Glasses.
Compasses repaired and Needles re-touched by very powerful Magnets.
Engraving neatly executed.
Cyphers, Crests, &c.
Wellington, May 6.



J. H. MARRIOTT.
Telescope Manufacturer,
AND METAL TURNER.

J. H. M. begs to announce that he has resumed his business on his old premises, Lambton Quay, where he trusts to meet again the patronage so liberally extended towards him during his residence in the colony.

Telescopes made and repaired
Spectacles to suit all sights
Compasses, &c., repaired
Engravings, &c., &c.

Wellington, 13th May, 1853.

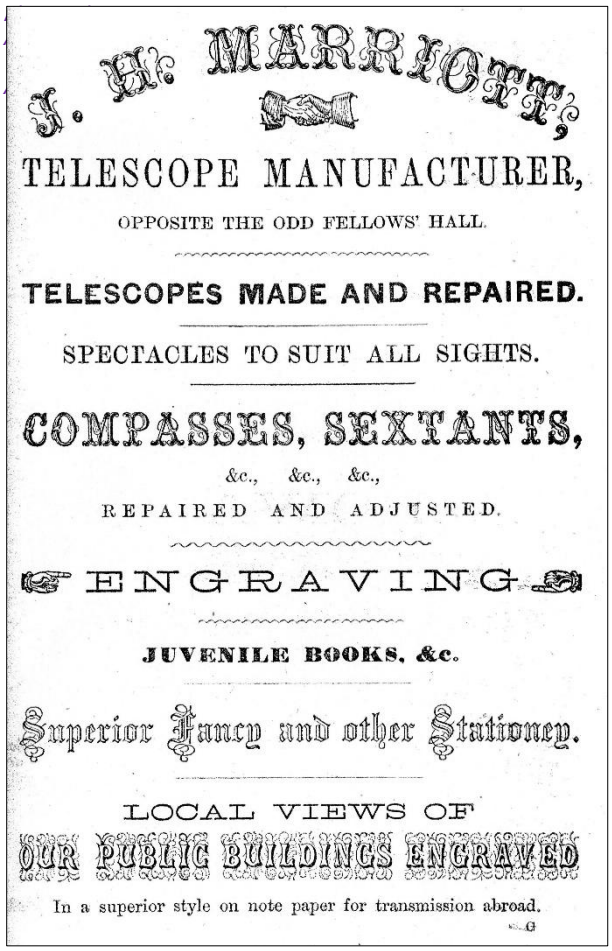
J. H. MARRIOTT,
TELESCOPE MANUFACTURER.

Telescopes Made and Repaired.

Spectacles to suit all Sights, Compasses, &c., Repaired.

Engravings, &c., &c.

Figure 4 (left, top): The advertisement that appeared in the *Wellington Independent* in 1849.
Figure 5 (left, bottom): The advertisement that appeared in the *Wellington Independent* in 1851–1852.
Figure 6 (right, top): The advertisement that appeared in the *Wellington Independent* in 1853.
Figure 7 (right, bottom): The advertisement that appeared in the *Wellington Independent* in 1859–1873.


J. H. MARRIOTT,
TELESCOPE MANUFACTURER,
OPPOSITE THE ODD FELLOWS' HALL.
TELESCOPES MADE AND REPAIRED.
SPECTACLES TO SUIT ALL SIGHTS.
COMPASSES, SEXTANTS,
&c., &c., &c.,
REPAIRED AND ADJUSTED.
ENGRAVING
JUVENILE BOOKS, &c.
Superior Fancy and other Stationery.
LOCAL VIEWS OF
OUR PUBLIC BUILDINGS ENGRAVED
In a superior style on note paper for transmission abroad.

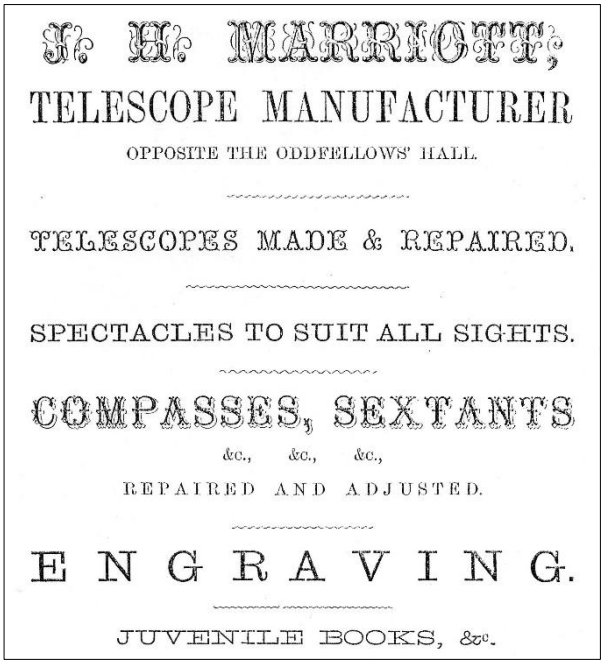

J. H. MARRIOTT,
TELESCOPE MANUFACTURER
OPPOSITE THE ODDFELLOWS' HALL.
TELESCOPES MADE & REPAIRED.
SPECTACLES TO SUIT ALL SIGHTS.
COMPASSES, SEXTANTS
&c., &c., &c.,
REPAIRED AND ADJUSTED.
ENGRAVING.
JUVENILE BOOKS, &c.

Figure 8 (left): The advertisement that appeared in *The Wellington Almanack Directory, Calendar and Diary* in 1873 (page 97).
Figure 9 (right): The advertisement that appeared *The Wellington Almanack Directory, Calendar and Diary* in 1875 (page 105).

4.2 Marriott Telescopes in Museum and Private Collections

Did Marriott's advertising translate into orders for new telescopes? As we have seen, there certainly is no sign of them in the newspapers of the day or in the nineteenth century literature on New Zealand astronomy, but what of museum and private collections?

If only 10% of Marriott's advertisements produced results, this translates to ~25 telescopes, and if he only made one telescope a year (hardly an income!) while living in New Zealand, this translates to 41 or 42 telescopes (allowing for time he spent back in England). These are minimal figures—if Marriott really was an active telescope-maker—and we would expect to find some of these instruments preserved in museum and private collections, primarily in New Zealand.

We therefore decided to survey New Zealand museums and other institutions that may hold historical telescopes in order to see whether any Marriott telescopes or other scientific instruments made by him were in their collections. Consequently, e-mails and letters were sent to fifty carefully-selected institutions (Table 3). Replies were received from 92% of these, and none of them held Marriott instruments.[2] A similar result emerged from major overseas museums, with significant astronomical collections, that also were surveyed.[3]

Nor were we able to track down any Marriott telescopes in private collections in New Zealand, although a descendent passed on anecdotal evidence of such instruments still within the family (Wayne Marriott, pers. comm., 2004 and 2005).

Thus, the only extant Marriott telescope we could trace was the marine telescope that initiated this research project, the instrument owned by one of the authors of this paper (CR). This telescope is discussed below in Section 5.

5 ROMICK'S MARRIOTT TELESCOPE

5.1 A Description of the Telescope

Romick's Marriott telescope is a single draw 'spyglass' (marine telescope) that magnifies 12×. It is 51 cm in length when collapsed and extends to 82 cm when focused at infinity (Figure 10). The body of the scope is 60 mm in diameter. When fully opened, the dust cover over the objective lens has a clear aperture of 28 mm, and the eyepiece has a 12-mm opening. The body of the telescope, draw tube, eyepiece assembly and objective assembly were all made of brass.

Table 3: New Zealand institutions surveyed for Marriott telescopes. Those that did not provide information for this study are shown in red print.

No	Name and Location
01	Te Aru Heritage Museum (Kaitaia)
02	Dargaville Maritime Museum
03	Russell Museum Te Whare Taonga o Kororareka
04	Devonport Historical and Museum Society Inc. (Auckland)
05	New Zealand Maritime Museum (Auckland)
06	Auckland War Memorial Museum
07	MOTAT (Auckland)
08	Helensville Pioneer Museum (Auckland)
09	Waiuku Museum (Auckland)
10	Raglan & District Museum
11	Kawhia Regional Museum and Gallery
12	Thames Historical Museum
13	Mercury Bay Regional Museum
14	Brian Watkins House Museum (Tauranga)
15	Waikato Museum Te Whare Taogna o Waikato (Hamilton)
16	Rotorua Museum Te Whare Taonga o Te Arawa
17	Whakatane Museum
18	Tairawhiti Museum (Gisborne)
19	MTG Hawkes Bay (Napier)
20	Petone Settlers Museum Te Whare Whakaaro o Pito-One (Petone)
21	Wellington Museum
22	Carter Observatory (Wellington)
23	Museum of New Zealand Te Papa Tongarewa (Wellington)
24	Pataka Museum of Arts and Culture (Porirua)
25	Kapiti Coast Museum (Waikanae)
26	Foxton Historical Society Museum
27	Te Manawa (Palmerston North)
28	Whanganui Regional Museum
29	Aotea Utanganui – Museum of South Taranaki (Patea)
30	Taranaki Museum (New Plymouth)
31	Tainui Historical Society Museum (Mokau)
32	West Coast Historical Museum (Hokitika)
33	Golden Bay Museum and Art Gallery (Takaka)
34	Nelson Provincial Museum
35	Marlborough Provincial Museum and Archives (Blenheim)
36	Kaikoura Museum
37	Fyffe Museum (Kaikoura)
38	Canterbury Museum (Christchurch)
39	Lyttelton Historical Museum
40	Okains Bay Maori and Colonial Museum
41	Akaroa Museum
42	South Canterbury Museum (Timaru)
43	North Otago Museum (Oamaru)
44	Waikouaiti District Museum
45	Otago Museum (Dunedin)
46	Toitū Otago Settlers Museum (Dunedin)
47	Port Chalmers Museum
48	Owaka Museum – Wahi Kahuika
49	Bluff Maritime Museum
50	Southland Museum and Art Gallery (Invercargill)

The interior of the brass parts was blackened, and two blackened baffles were built into the eyepiece and the telescope tube. All parts are threaded, so that they can easily be disassembled. The body of the telescope is covered with hand-stitched brown leather. Near the eyepiece, the draw tube contains the following engraved inscription:

"J.H. Marriott Maker Wellington, NZ 1844" (see Figure 11).

There are six lenses in the telescope; two each in the objective, eyepiece, and image erector. All but the objective are permanently mounted in brass and still tightly held in their fixtures. Several have scratches but are in generally serviceable condition. The objective is a 44-mm twin achromat. The lenses are mounted in a threaded housing. When the telescope was purchased it would not focus, and it was discovered that the front element of the objective had been glued into the middle of the eyepiece, and then damaged when removed. Several chips are evident in the outer 8 mm of the objective (see Figure 12), although this does not prevent use as these areas are outside of the 28-mm opening in the dust cover. The surface of the rear element of the objective shows some faint clouding.

The error in placement of the objective may have occurred when a major repair was carried out. The brass draw tube at some time cracked, and a brass plate has been soldered inside the tube to reinforce the cracked area, and the damaged area has been filled with solder. It is

Figure 10: A view of the extended telescope (photograph: Carl Romick).

not known how long ago this repair was done.

In an interesting paper titled "Telescopes for land and sea", Deborah Jean Warner (1998) from the National Museum of American History in Washington explores small non-astronomical telescopes made, mainly in London, during the eighteenth and early nineteenth centuries. This

Figure 11: A close-up showing the inscription on the telescope draw tube (photograph: Carl Romick).

was a time in England when

> … an industrial revolution and expanding empire went hand in hand, and where numerous soldiers, sailors and civilians were able and eager to purchase the[se] latest high-tech consumer goods. (Warner, 1998: 33).

As the title of her papers foreshadows, Warner describes and discusses the various types of portable telescopes designed for terrestrial and maritime use, by day or night, and shows that the tubes of single-draw telescopes like the one made by Marriott were first made of metal towards the end of the eighteenth century (Warner, 1998: 43).[4] Warner (1998) identifies the following types of land and sea telescopes: perspective glasses, pocket telescopes and day and/or night telescopes. Marriott's 'spyglass' (as Romick likes to call it) falls comfortably into this last category.

The telescope was mounted on a tripod for astronomical observing (Figure 13). Testing during the day showed an image sharp to the edge of the field with almost no chromatic aberration. Testing at night gave a sharp image of the Moon with little color, but there was excessive scattering around the Moon, which could have been caused by the damage to the front objective lens or by the slight clouding of the rear objective, or both. When observing from Richmond, California, the Andromeda Galaxy was well contrasted against a reasonably dark background, and most of the Messier objects in the southern Milky Way were easily visible. A photograph of a lunar eclipse taken with this telescope is reproduced here in Figure 14.

5.2 The Provenance of the Telescope

Regrettably, nothing is known of the provenance of this marine telescope, other than that it was purchased from an antique dealer in Maui, Hawaii, in August 2004, and that dealer had owned it for at least three years, originally having purchased it from another antique dealer in Maui. All we can conclude, given its far from pristine physical condition, is that the telescope must have enjoyed a long working life.

How could a marine telescope that was manufactured in Wellington, New Zealand, in 1844 end up about 8,500 km away, in Hawaii? There would seem to be two distinct possibilities. During the mid-1840s marine telescopes were widely used by officers and crew members of ships plying the Pacific, and New Zealand was a popular destination, both for revictualling and for its commercial stocks of whale oil, timber, flax, pigs, potatoes, maize, seal skins and other produce (McNab, 1908). Following the signing of the Treaty of Waitangi in 1840 between the British Crown and the Maori chiefs of New Zealand, there was accelerated Euro-

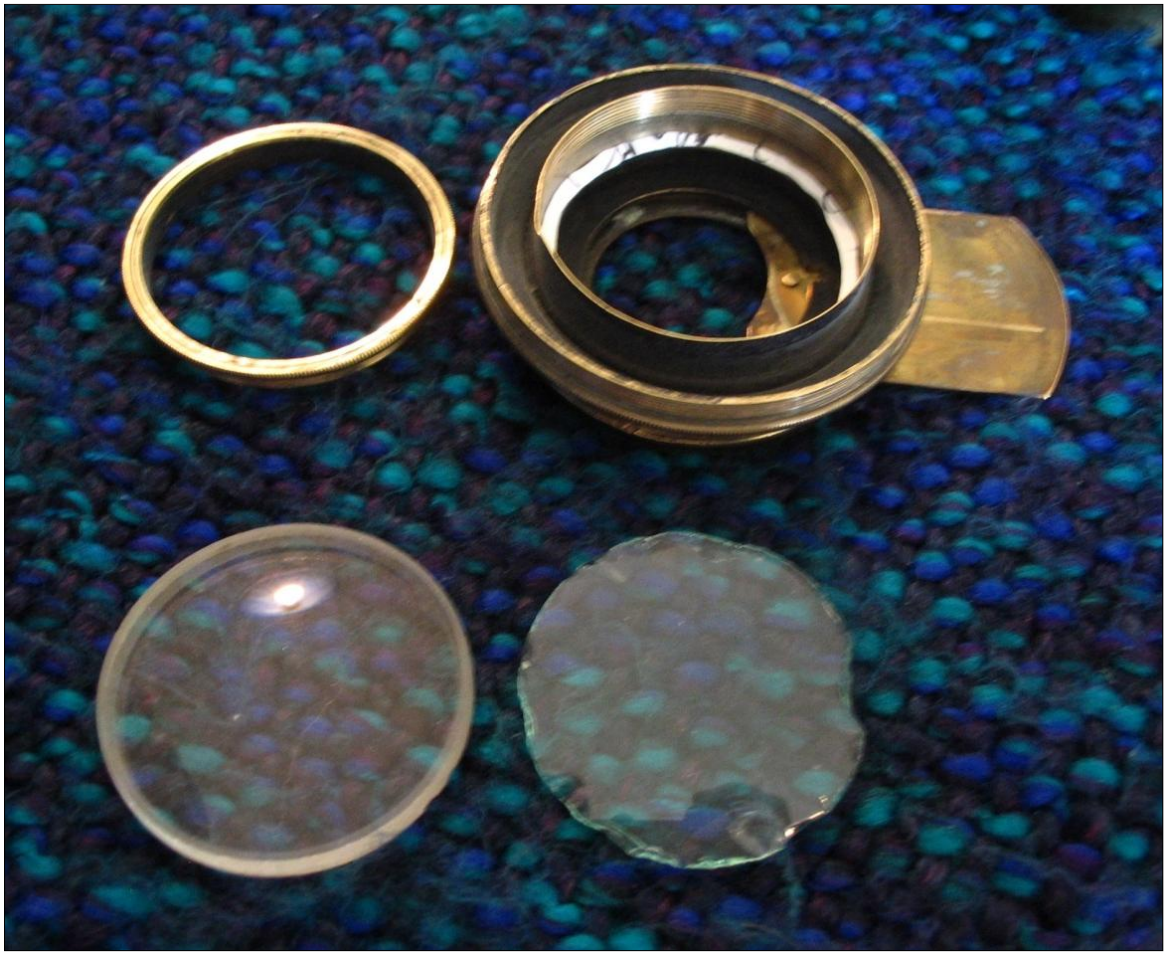


Figure 12: A close up of the brass assembly and twin objectives (photograph: Carl Romick).

Figure 13: The telescope mounted on a tripod for astronomical observing (photograph: Carl Romick).

Figure 14: The lunar eclipse of 28 October 2004, photographed with a Canon A75 digital camera through the Marriott telescope (photograph: Carl Romick).

pean occupation of the country, and by 1850 there were many settlements scattered round the long coastlines of the North and South Islands of New Zealand. Those that also served as international ports are shown in Figure 15.

Figure 15: The red dots show the location of international New Zealand ports in 1850 (map: Wayne Orchiston).

As we can see, Wellington, where Marriott lived from January 1843, was one of these.

We have no statistics on shipping movements into and out of the port of Wellington during the 1840s, but data for the Bay of Islands during the period July-December 1839 inclusive (Table 4) give an indication of the prevalence of American vessels (cf. McNab, 1914: 612–613). However it was feared that the signing of the Treaty of Waitangi in January 1840 would impact profoundly on American commerce in New Zealand:

> The British Government have now assumed the entire Sovereignty of these Islands and have enacted laws and levied Imposts peculiarly harassing to our Citizens and most destructive to their Commercial pursuits, whilst they offer the most marked protection to their own commerce.
>
> Many of our Countrymen are extensively engaged in general mercantile pursuits—some in the valuable Timber trade of the Country and others in that very important branch of our Commerce the Whale Fishery—for carrying on each of which, lands have been purchased from the Chiefs and establishments erected at a great outlay of capital but H.B.M. Government here have passed laws which they declare to be now in force, by which they assume to the Queen of Great Britain all lands purchased of Native Chiefs prior to the Treaty with the Natives and during the acknowledged Independance [sic.] of the Islands of New Zealand …
>
> The destructive effect of many of the laws passed here on our Commerce is too general to detail, the duties imposed on produce of the United States varies from Ten to Five Hundred per Centum ad valorem …
>
> Our whaling and shipping interests are deeply affected by the loss of rights and privileges long enjoyed by those engaged in that lucrative undertaking, inasmuch as Establishments on shore exclusively American can no longer exist and numerous Citizens hitherto fully and profitably employed must either sacrifice their hard earned property or serve where they should be masters —those of our ships which for the last 30 years have frequented the Ports of New Zealand to refresh, refit and whale as being the most central and best adapted to their purposes of the South Sea Islands are now forced to abandon them on account of the prohibition to the disposal of any of their cargo, the assumed possession of all the Timber lands by the British Government … (Mayhew, 1842).

Commercial activities did indeed prove more challenging for American entrepreneurs, as forecast above by Richard Mayhew, the U.S. Consul in New Zealand, and the number of American vessels visiting the Bay of Islands dropped significantly following the signing of the Treaty of Waitangi (see Table 5). Nonetheless, throughout the 1840s American vessels *did* continue to visit New Zealand ports, including Wellington, and in this scenario Romick's Marriott telescope was purchased in 1844, or a little later, by the captain or a crew member of an American ship and ended up in Hawaii, where it remained until 2004 when Romick transferred it to California.

An alternative hypothesis is that the Romick Telescope is actually the Marriott telescope that was described in Wellington's *Evening Post* newspaper in 1931 (see Section 4.1 above). Let us now examine this possibility.

The A.G. Barnett mentioned in this article was Arthur George Barnett (1883–1940; Figure 16), who joined the Wellington Harbour Board as a message boy in 1898. He must have displayed considerable acumen, for the records of the Wellington Harbour Board in the Wellington City Archive reveal that he worked his way up within the organisation, becoming Secretary of the Board in 1924 (see also Ward, 1928: 423), and as we have seen still held this position in 1931 when the Board acquired the Marriott Telescope. From 1932 to 1934 he was Chief Executive Officer and Secretary of the Board, and in 1934 he became the General Manager, a post he retained until his sudden death on 6 September 1940 (Board's Tribute …, 1940; Late Mr AG Barnett …, 1940; Obituary …, 1940), not long after he wrote an article about the Petone Wharf (Barnett, 1940). But Barnett's service extended beyond Wellington, for he also served as Secretary of the Harbours Association of New Zealand for a number of years, starting in 1911 (Board's tribute …, 1940; Harbour dues …, 1916).

While there is a relative abundance of biographical material in the Wellington City Archives about Mr Barnett, strangely these records say nothing at all about the Marriott telescope. The donation of the telescope is not even mentioned in the Harbour Board Minutes (Wellington Harbour Board Rough Minutes, 1930–1931; 1931–1932) or the 1931 Annual Report (Statement of Ac-counts …, 1932), and without access to the 1931 *Evening Post* article we would not be aware that this telescope ever existed!

Nonetheless, the Marriott telescope *did* exist, but what became of it after it came into the "… possession of the Wellington Harbour Board." (Last of the watermen, 1931) is a mystery. Laureen Sadlier (pers. comm., 13 October, 2015) has explained that

> In the very early days … if something of interest was found [in the Wellington Harbour Board collection] … it was given to the National Museum of New Zealand which is now Te Papa Tongarewa …

but there are no Marriott telescopes in the Te Papa collection (ibid). In 1972 the Wellington Harbour Board established the Wellington Maritime Museum in a majestic multi-storeyed historic building down on the Wellington waterfront, then in 1989 the Harbour Board was dissolved and replaced by PortCentral, and the Maritime Museum was transferred to the Wellington City Council only to become the Museum of Wellington City and Sea and subsequently the Wellington Museum. Apparently the collections of the Wellington Maritime Museum never included a Marriott telescope, and when one of us (WO) first enquired in 2005, it was not in the collections

Table 4: Ships visiting the Bay of Islands between July and December 1839, inclusive (after McNab, 1908: 756–758).

Home Port	No. of Vessels	% of Total
America	26	35.1
New South Wales	24	32.4
France	13	17.6
England	8	10.8
New Zealand	1	1.4
Portugal	1	1.4
Tahiti	1	1.4
Totals:	74	100.1

Table 5: The number of American ships visiting the Bay of Islands in 1840 and 1841.

Time Period	Number of Vessels	Reference McNab (1914)
1 July 1840–1 January 1840	16	Page 617
1 January–30 June 1841	19	Page 619
1 July–31 December 1841	10	Page 622

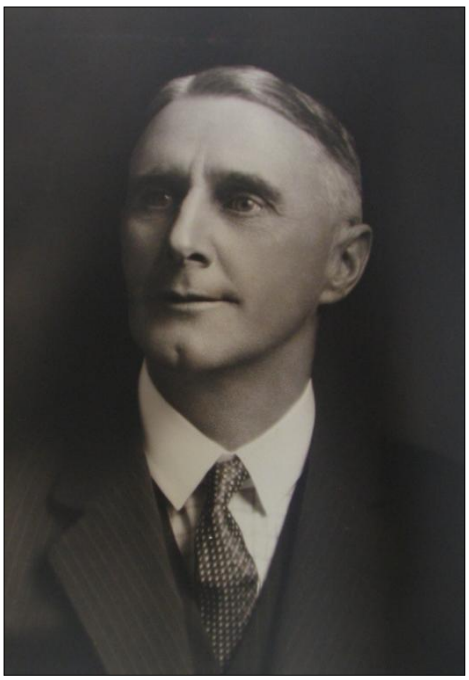


Figure 16: A.G. Barnett, in 1929 (courtesy: Wellington City Archives, AC127:2:1 WHB Members Album II, 1900–1923 p 30A).

of the Museum of Wellington City and Sea (Laureen Sadlier, pers. comm., 2005). This would indicate either that

(1) Sometime between 1931 and 1972 the Wellington Harbour Board sold the Marriott telescope, or perhaps presented it to a distinguished visitor to Wellington as a momento; or that

(2) Mr Barnett personally retained the telescope, and later he or his heirs disposed of it.

The records of the Wellington Harbour Board are now housed in the Wellington City Archives, but they do not provide any information that allows us to adjudicate on these two options. However, the 1931 newspaper article does favour the first alternative, and given that Marriott made so few telescopes, the fact that the telescope described in this newpaper article is a well-used marine telescope that was made in 1844 would seem to be more than a coincidence. Moreover, upon examining Figure 11 it is easy to see how the 'J.' in J.H. Marriott could be mistaken for a 'T' (as recorded in the newspaper article). We believe that Romick's Marriott Telescope is likely to be the same telescope that was presented to the Wellington Harbour Board in 1931, but current evidence does not allow us to explain how it made its way to Hawaii and was there in 2004 when Romick purchased it.

6 CONCLUDING REMARKS

During the forty-three years that Marriott lived in New Zealand, Wellingtonians were treated to major naked eye comets in 1843, 1844, 1858, 1861, 1865, 1874, 1880, 1881 (two of them) and 1882 (again two of them—see Orchiston, 1998: 107). There also were transits of Venus in 1874 and 1882 (Orchiston, 2004; 2016: Chapter 14), and the year before Marriott died a total solar eclipse was visible from central New Zealand (Orchiston, 2016: Chapter 16; Orchiston and Rowe, 2016). Collectively, these astronomical spectacles generated enormous public interest in astronomy, which should have translated into an ever-increasing demand for telescopes. Marriott was in the ideal position to respond to this demand, and he advertised extensively during the 1860s and early 1870s, but there is no evidence in publications, newspapers, museums or private collections that he made more than two or three telescopes—a handful at most—while living in New Zealand. Given the total cost of placing 242 advertisements in the *Wellington Independent* newspaper, and additional advertisements in *The Wellington Almanack* …, we have to wonder whether he received enough orders to at least recoup the financial outlay. We very much doubt it.

So if Marriott's primary income did not derive from telescope-making where did it come from? We know that from 1851 until 1885, one year before his death, Marriott and his wife ran a bookshop on Lambton Quay (a leading Wellington Street), and presumably this generated his main source of income. However, he probably was not particularly affluent, for his obituary describes how "Mr. Marriott's career in Wellington for the last thirty-five years [i.e. from 1851] has been that of a steady, plodding, business man." (Death …, 1886). Before this, during his early years (prior to visiting England in 1850–1851), telescope-making and the theatre did not provide a reliable income, so, although

> By occupation he was an optician and mathematical instrument maker … as might be expected at the time he arrived [in Wellington], he found very little to do in his own line, and for the first few years of his colonial life (to use his own words) he did a bit of everything "from chisseling tombstones to putting in ladies teeth." (ibid.).

The accumulated evidence shows clearly that Marriott's heart lay with the theatre and not with astronomy or telescope making, and it is better that we salute him as the founding father of New Zealand theatre rather than as the nation's first professional telescope-maker.

The sole Marriott telescope we have been able to inspect was manufactured in 1844 and is owned by one of the authors of this paper (CR) and is now in Richmond, California. This is a well-made brass marine telescope that still performs well, despite some chips around the edge of one of the two objective elements. Given the absence of conflicting evidence, we conclude that this unique telescope is probably the 1844 marine telescope made by Marriott that was handed to the Wellington Harbour Board in 1931, and subsequently was disposed of and eventually made its way to Hawaii (where it was purchased, in 2004). On present evidence, we can identify this as the first telescope that was manufactured in New Zealand. Given its historical associations, its antiquity and its unique nature, this telescope is an important part of New Zealand's astronomical heritage.

7 NOTES

1. By this time James and Sarah Marriott already had five children. Sarah Marriott and the two youngest children (a boy and a girl) only moved to Wellington in 1853, and in 1865 they were joined by the eldest daughter. The two remaining children never emigrated to New Zealand. The eldest son went to California early in the gold-rush era and remained there, while the second daughter stayed in London where she became a celebrated actress (Death …, 1886).
2. It is significant that when the late George Eiby searched for Marriott telescopes in the Wel-

lington region some years ago he also was unable to locate any (Laureen Sadlier, pers. comm., 2005).

3. Likewise, the database of astronomical collections housed in Canadian museums contained no Marriott telescopes (Randall Brooks, pers. comm., 2004), and requests circulated through the *Oldscope* (Antique Telescope Society) and *Rete* e-lists, also produced no Marriott telescopes.
4. Prior to this, pasteboard and wood commonly were used.

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We are especially grateful to Dr Randall Brooks (University of King's College, Halifax, Canada), Ayla Koning-Thornton (Wellington City Archives), Warwick Marriott (Wellington), Wayne P. Marriott (Tasman Bay Heritage Trust, Nelson), and Laureen Sadlier (now at the Pataka Museum of Arts and Culture, Porirua, but formerly at the Museum of Wellington Sea and City) for their assistance, and to other staff from the New Zealand museums and institutions listed in Table 3 who responded to our enquiries about Marriott telescope and other scientific instruments. We also wish to thank John Drummond (Gisborne) and John Seymour (Wellington) for reading and commenting on the manuscruipt. Finally, we are grateful to Warwick Marriott for kindly supplying Figure 1.

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Pendreigh Brown was born in New Zealand in 1937,

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