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SHORT NOTE

A previously unpublished first record of the moa by French naval surgeon/botanist P.A. Lesson

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The timeline of the discovery by Europeans of the prehistoric existence of the moa (*Aves*: *Dinornithiformes*) in the 19th century has long been settled. The first remains and accounts of a giant bird in New Zealand found their way to the scientific world from several independent sources, all within the narrow period of 1837 to 1839, and all from the same general locality, the Poverty Bay – East Cape (Tai Rāwhiti) region of New Zealand's North Island.

It will be recalled the first published account was from the trader Joel Polack who reported being shown bones of an 'emu or a bird of the genus *Struthio*', by Māori while living in the Tolaga Bay area in 1835–1836. The bones were said to have been found in the vicinity of the 'mountain of *Ikorangi*' (Hikurangi) and that hunting in 'times long past' had caused their extermination. Polack added he was 'assured from the many reports received from the natives, that a species of *struthio* still exist on that interesting [South] Island, in parts, which, perhaps, have never yet been trodden by man' (Polack 1838: 303, 307-308).

In February 1837, a femur of a very large bird

which had come into the possession of John Harris, another trader based at Turanga (now Gisborne), Poverty Bay, was taken to Sydney and left along with some Māori artefacts at the home of Dr John Rule, a former naval surgeon. Harris also left a note stating that the bone and others like it were found buried in riverbanks and by 'tradition' it was from a bird of the 'Eagle kind but which has become extinct' (Anderson 1987).

In January 1838, the missionaries William Williams, brother of Rev. Henry Williams, original author of the authoritative *Dictionary of the Maori Language* and later the first Anglican bishop of Waiapu, William Colenso, James Stack, and Richard Mathews, visited Rangitukia pā, near East Cape where they were told by Ngāti Porou chiefs of a giant bird named 'moa'. This has long been the accepted first record of the name 'moa'. The local people described the bird in semi-mythical terms, maintaining one still lived in the mountainous hinterland to the southwest, in the vicinity of Whakapunake (Williams in Owen 1843, 1879; Colenso 1843).

In 1839 Rule travelled to London where in October he presented Harris' bone to Richard Owen at the Royal College of Surgeons. Owen, after initial scepticism confirmed that the bone was

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indeed the femur a very large bird. The following month November 1839, Owen presented the bone to a meeting of the Zoological Society of London, famously announcing 'I am willing to risk the reputation for it on the statement that there has existed, if there does not now exist, in New Zealand, a *Struthious* bird nearly, if not quite, equal in size to the *Ostrich*' (Owen 1839: 170-171).

In 1842 Rev. Williams sent a consignment of 47 moa bones collected in the Poverty Bay, East Coast area, to Owen via the geologist/palaeontologist Rev. Dr William Buckland of Oxford University. This led to Owen assigning the name *Dinornis novaezealandiae* for the giant moa, as reported in the *Proceedings of the Zoological Society*, 1843, and his subsequent papers which were published together as a compendium in his *Extinct Wingless Birds of New Zealand* (Owen 1879). Since that time a number of debates among scientists about the moa have arisen, including about how and when it became extinct, its systematics, at one stage classified as 28 species in seven genera and two families (Oliver 1955), progressively reduced to the presently accepted nine species in six genera and three families (Bunce *et al.* 2009; Worthy & Scofield 2012), and even its posture. However, the timeline of when Europeans first learnt of the giant New Zealand ratite and of the name 'moa', has never been challenged – until now.

The *Astrolabe* journal of P.A. Lesson

On 6 February 1827 the French naval corvette *L'Astrolabe* under the command of J.-S.-C. Dumont d'Urville was off the east coast of New Zealand, on a scientific and hydrographic expedition. Having just departed Tolaga Bay (Uawa), it was sailing northwards towards East Cape when it was intercepted by a sailing canoe or waka, flying a flag atop its mast. The waka which hailed the French ship with a musket shot, was under the command of a rangatira whose name d'Urville wrote as 'Ourua' and his assistant surgeon recorded as 'Orua'.

The late-19th/early-20th century ethnologist S. Percy Smith identified this rangatira as 'Te Rere Hourua, a great chief and warrior of Tokomaru Bay' (Smith 1896). According to historian Monty Soutar his correct name was Te Rerehorua; tribal tradition recalling Rerehorua as 'the last of the principal chiefs, and a man of great passionate nature who would kill a man anywhere ...' (Soutar 2000: 83).

D'Urville invited Te Rerehorua, who evidently knew some English, to dine with him and was impressed by his table manners and his knowledge of the words of the northern lament for the dead, the Pihe, with which d'Urville had become fascinated during his visit to the Bay of Islands in 1824 (Dumont d'Urville 1830: 111-113; Wright 1950: 125-126). At the time the intertribal Musket Wars were



Figure 1. Pierre Adolphe Lesson (1805–1888). Assistant surgeon and botanist in the *Astrolabe* 1826–1829 expedition. Younger brother to ornithologist R.P. Lesson. P.A. Lesson was a career naval surgeon and later medical administrator in French Polynesia where he wrote extensively on Polynesian ethnology. The coastal shrub houpara (*Pseudopanax lessonii*) collected at Whangarei Heads in 1827 was named for him by the famous botanical taxonomist A.P. de Candolle. Portrait in oils by Faustin Betbeder, dated 1869 (n° inv. BA 22-44). ©Musées-municipaux Rochefort 17. Hôtel Hébre de Saint Clément, Musée d'Art et Histoire de Rochefort.

raging across New Zealand. Te Rerehorua anxious to obtain muskets and ammunition and evidently wishing to befriend the powerful outsiders, persistently urged d'Urville to call in at Tokomaru Bay. The *Astrolabe's* assistant surgeon, was 20-year-old Pierre Adolphe Lesson, the younger brother of the surgeon/naturalist René Primevère Lesson who had visited New Zealand in 1824 in *La Coquille* (the original name of the *Astrolabe*), making major contributions to New Zealand ornithology (Andrews 1986; Lee 2016, 2018, 2020; Lee & Bruce 2019a,b). The younger Lesson, a botanist who would co-author the voyage botany volume, part 1 (Lesson & Richard 1832), was a junior member of d'Urville's distinguished team of naturalists which included the surgeons Jean-René-Constant Quoy, Joseph Paul Gaimard and d'Urville himself. The successful partnership of Quoy and Gaimard had already won them a reputation as world-leading field zoologists. During the *Astrolabe* expedition they were to undertake important work in New Zealand, collecting specimens and naming

and describing bird and mollusc species in particular (Quoy & Gaimard 1830–33).

P.A. Lesson's journal, which has lain unpublished for 194 years, most of this time in the municipal library in Rochefort, France, reveals some remarkable information about New Zealand's natural history, in particular what appears to be the first record of the name 'moa' applied to the giant New Zealand flightless bird. Lesson's journal entry for 6 February 1827 includes the following:

'Dans la Baie Tolaga, en voyant la bordure d'un manteau en poil d'oiseau, on nous avait donné le nom de Kiwi pour celui qui produisait un pareil plumage ; ici, en voyant les plumes qui ornaient la Pirogue d'Orua, ce chef nous avait appris que c'étaient des plumes d'un autre oiseau, qui ne volait pas mais courait seulement et était appelé par eux Moa. Il avait ajouté qu'on ne le trouvait que dans l'intérieur à assez grande distance de la côte, qu'il y en avait de fort gros, et que si on voulait attendre, il promettait d'en rapporter assez promptement. Un instant même il put croire que cela déciderait le Commandant plus que tout le reste, mais rien ne devait y faire, la baie Tokomarua [sic], quoique grande était encore trop peu connue pour qu'on s'y risquât' (Lesson 1827: 540).

In translation: 'At Tolaga Bay, when we saw the feathered border of a chief's cloak, we had been given the name of 'Kiwi' for the bird which produced such plumage; here, seeing the feathers that adorned the canoe of Orua, this chief led us to understand that these were the feathers of another bird, which did not fly but only ran, and was called by them 'Moa'. He added that it was only found in the interior at a considerable distance from the coast, that there were very large ones, and that if we wished to wait, he promised to bring some back fairly quickly. For a moment he was convinced that this would decide the Commander more than all the other reasons, but there was nothing doing. Tokomarua [sic] Bay, although large was still too little known for us to risk it.'

Unfortunately d'Urville's *Histoire du Voyage* makes no mention of this incident.

Two days later on 8 February, having doubled East Cape, *Astrolabe* was intercepted by three waka rigged with inverted triangular sails, the finest under the command of a rangatira from a pā or fortified village called 'Awatere' near Te Araroa, whose name d'Urville recorded as 'Shaki' ('Jack'). The carved bows or tauihu of these waka, Lesson reported, were decorated with the likenesses of two human heads, with tongues protruding, eyes of *Haliotis* (pāua) shell, adding 'these heads were generally surmounted with quelques plumes de Moa' – 'a few moa feathers' (Lesson 1827: 546).

Unfortunately, on neither occasion did Lesson describe or measure these feathers. This was the same day that Quoy and Gaimard collected what proved to be two specimens of the New Zealand storm petrel (*Freggetta maoriana*) which are still held in the Muséum national d'Histoire naturelle in Paris. This episode Lesson recorded, along with the name *Procellaria pelagica* (the European storm petrel).

The missing journals of the *Astrolabe* expedition

The long-standing confusion about the origins of the Paris New Zealand storm petrel specimens only resolved in 2004 in this journal by Medway and Bourne *et al.*, raises questions about the contents of Quoy and Gaimard's *Astrolabe* journals. More so because in regard to the 'moa' feathers, Lesson would have almost certainly consulted his senior zoologist colleagues, the eminent J.-R.-C. Quoy in particular. In regard to the kiwi, the feathers of which they had examined in the aforementioned cloak, Lesson wrote, 'M. Quoy nous dit que c'était l'*Apteryx*'. 'Mr Quoy tells us that this is the *Apteryx*' (Lesson 1827: 531). Unfortunately Lesson's unpublished diary is the only officer's journal from the *Astrolabe* (1826–1829) expedition known to still exist. This is because d'Urville at the end of the expedition in April 1829 collected all his officers' journals, selecting excerpts from some to include in his *Histoire du Voyage* volumes. After d'Urville's untimely death in 1842 attempts to locate these journals were unsuccessful (Leclerc 2008: 122). The exception being that of Lesson, who while keeping numerous journals dedicated to botany, medicine, surgery, shipboard alimentation, and nautical matters, did not surrender the journal he had kept as his personal diary. Instead towards the end of his life in 1888, he donated it along with the rest of his papers and those of his brother, to the Bibliothèque municipale in the Lesson family's home town of Rochefort.

Māori accounts of the moa

Nineteenth century accounts by Māori relating to the moa collected by for instance Sir George Grey, John White and Walter Buller (Berentson 2012), have tended to be dismissed by scholars principally because they were suspected of being compromised by leading questions from European inquirers (Brewster 1987). Anderson observed 'as soon as scientific reports about moa became available Europeans used them to prompt Maori 'recollections'' (Anderson 1989a).

This scepticism extends to doubts about the authenticity of the name 'moa' itself (Anderson 1989a; Worthy & Holdway 2002). The ethnologist Roger Duff went as far as to remark, 'If the Maoris of the eighteenth and nineteenth centuries had

actually found a live moa, they would not have known what to call it' (In McCulloch & Cox 1992: 36).

In February 1827, however, there was absolutely no possibility of leading questions or prompting about moa because no-one onboard *Astrolabe*, nor anyone else outside of the Māori world, knew of the moa's existence.

The skepticism about the authenticity of the name 'moa', appears to be reinforced by the fact that it was and still is, widely used across island Polynesia as the name for the domesticated red junglefowl (*Gallus gallus*). For some reason fowls were not brought to New Zealand by the original Polynesian colonists or did not survive their translocation (Wood *et al.* 2016). Why the early Māori called the large flightless birds this name is a question often remarked on by scholars. Of these Lesson was the first. In March 1827 at the end of the *Astrolabe's* New Zealand visit, in a wide ranging essay, and in the context of introduced domestic fowls that he'd seen in the Bay of Islands, he wrote:

'Ce qui doit faire admettre qu'ils y étaient tout à fait inconnus, c'est que les Naturels actuels ne désignent pas les poules sous leur nom polynésien de Moa, et que comme leurs ancêtres, ils appliquent pourtant le même nom à un oiseau Gigantesque à ailes courtes, qui autrefois, était très commun mais qui dès à présent est assez rare, tant ils sont pourchassés pour s'en nourrir d'abord et pour les plumes; ensuite, lesquelles leur servent, comme on a vu, à orner leur tête et leurs pirogues' (Lesson 1827: 797).

In translation: 'What must make [us] admit that [domestic fowls] were completely unknown here, it is that the present day natives do not designate the fowls under their Polynesian name of Moa, and that like their ancestors, they however apply the same name to a Gigantic bird short-winged, which in the past was very common, but which is now quite rare, as they are hunted down to feed on it first and for the feathers next, which serve them, as we have seen, to adorn their heads and their canoes.'

Lesson's recorded observations, apart from being the earliest written account of the moa, predating those of Polack, Harris, Williams, Colenso, and Taylor by at least eleven years, raise other questions. Te Rerehorua's claim that very large species of flightless bird called 'moa' could still be found and hunted in the remote interior was evidently made after Lesson expressed interest in the feathers and was likely motivated by his determination to have the French stay as long as possible at Tokomaru Bay. (His anxiety can be understood when it is learned his pā, Tuatini was besieged the following year, [or 1829 according to Laurie 1991] by a coalition of enemy tribes and Te

Rerehorua killed and eaten, his head preserved and sold for gunpowder) (Soutar 2000: 85). That being said, the missionary Richard Taylor in his journal entry of 26 April 1839 reported being told by local Māori of a valley near Tokomaru Bay where 'the great bird moa was said to exist.' (Taylor 1839 in Wolfe 2003: 56). However, in regard to Te Rerehorua's initial response to questioning about the feathers on his waka, Lesson's curiosity prompted by the kiwi feathers that he and his colleagues including d'Urville, had examined at Tolaga Bay the previous day, it is difficult to find a reason not to take what could only have been an ingenuous response at face value.

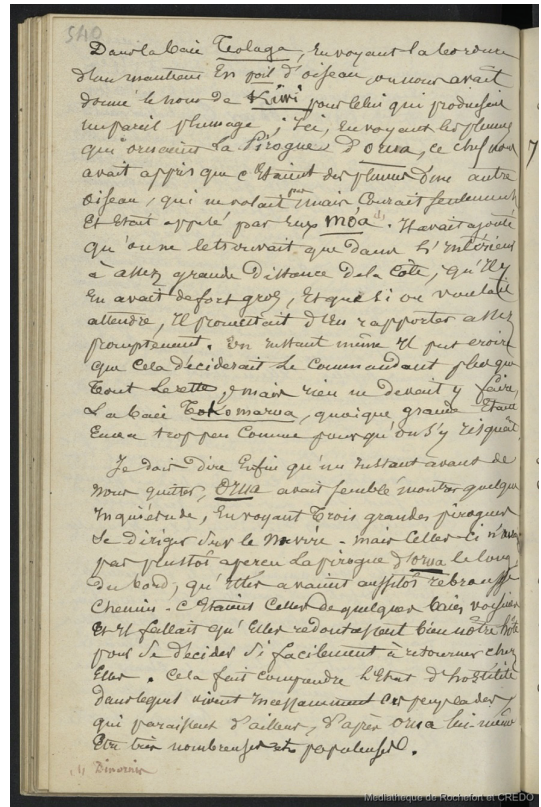


Figure 2. Lesson journal p.540. 6 February 1827 which records the name 'moa' communicated to Lesson by the Ngāti Porou rangatira Te Rerehorua. This is the first known record of the word 'moa'. Note the footnote 'Dinornis' in lighter ink which must have been added after Richard Owen's 1843 paper published in the *Proceedings of the Zoological Society of London*. ODSAS https://www.odsas.net/scan_sets.php?set_id=1157&doc=11910&step=72 Médiathèque de Rochefort et CREDO.

Authenticity of the Lesson journal

Lesson's reports about the moa are so extraordinary that it is not unreasonable to question the journal's

authenticity. On this subject the scholar France Herjean de Briançon who rediscovered the Lesson journal and wrote her thesis on it for her Sorbonne Master's degree in history (and on the *Astrolabe* expedition for her doctorate in 1992), had this to say:

'Nous pouvons affirmer sans presque aucun doute, que c'est Pierre Adolphe Lesson qui a rédigé ce journal. A la fin du récit du voyage, se trouve une signature très lisible sous la date du 3 Avril 1829. De plus, il mentionne à plusieurs reprises son frère René Primevère et raconte des anecdotes qui lui sont arrivées personnellement' (Herjean de Briançon 1986: 22).

In translation: 'We are able to affirm almost without doubt, that it was Pierre Adolphe Lesson who wrote this journal. At the end of his account of the voyage is found a signature very legible under the date 3rd of April 1829. Furthermore, he mentions his brother René Primevère several times and recounts anecdotes that happened to him personally.'

The Lesson journal is in three volumes, written in black ink, on double-sided pages, 'recto-verso', comprising 800 to 900 pages, each volume bound in leather, covering the voyage from 1826 to 1829 (Herjean de Briançon 1986: 18). It is finally in the process of being published in France under the title *L'Astrolabe - Récit du Voyage* with an introduction by Anne Di Piazza. Publication, originally intended in 2020, has been delayed by the Covid 19 pandemic, but is planned for December 2021 (A. Di Piazza *pers. comm.*). However the handwritten original of the Lesson journal is available on-line at the Médiathèque de Rochefort: https://www.odsas.net/scan_sets.php?set_id=1157&doc=111335&step=0

Implications for the historiography of the moa

So, just as the older brother René Primevère Lesson in 1824 was the first European naturalist to record the existence of the North Island brown kiwi (*Apteryx mantelli*), introducing its now famous name to ornithology (Mathews 1935 in Lee & Bruce 2019b), three years later, the younger brother Pierre Adolphe Lesson, became the first outsider to record the existence of the New Zealand moa and to record the name in writing. Concomitantly the Ngāti Porou rangatira Te Rerehorua of Tokomaru Bay is revealed to be the first person to have reported the existence of the moa to the outside world. Lesson's record must, however, be considered within the context of the consensus (albeit noting Richards 1986) that all species of moa had been driven to extinction across New Zealand by AD 1500 or earlier. (e.g. Anderson 1989a,b; Worthy & Holdaway 2002; Tennyson

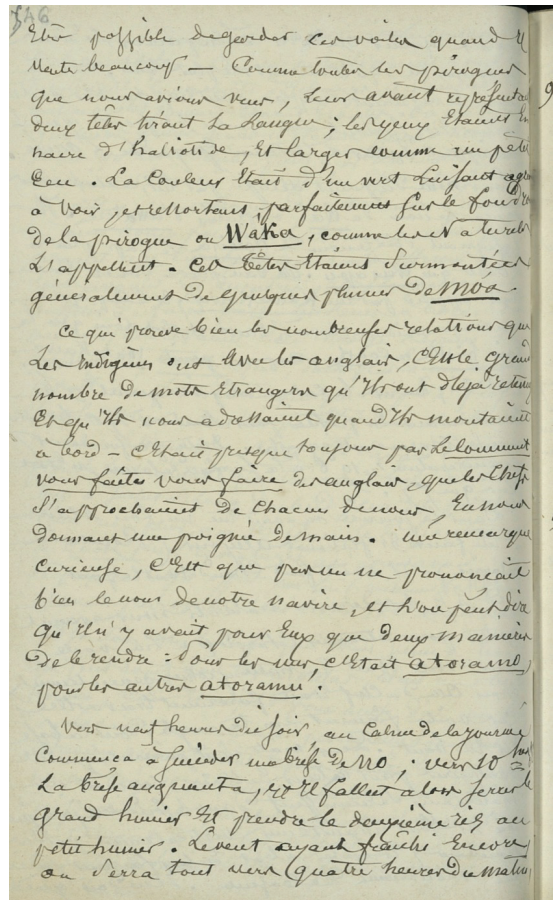


Figure 3. Lesson Journal p.546. 8 February 1827, off East Cape. Here Lesson describes the bow carvings (tauihu) of sailing waka decorated with 'a few moa feathers'. (The Māori name for the *Astrolabe* is reported as 'Atoramō'). ODSAS https://www.odsas.net/scan_sets.php?set_id=1157&doc=111910&step=72 Médiathèque de Rochefort et CREDO.

& Martinson 2006; Bunce *et al.* 2009; Worthy & Scofield 2012; Holdaway *et al.* 2014; Perry *et al.* 2014; Gill *et al.* 2020). That being said the unprompted account of a very large flightless bird, and the claimed use of moa feathers, notably in the decoration of sea-going waka in the 1820s on the East Coast of New Zealand, the first locality where moa bones were shown to Europeans, but since then figured comparatively rarely in moa-related research (albeit noting Huynen *et al.* 2008; Walter *et al.* 2010; McCallum *et al.* 2013). This at the least suggest Māori memory of the moa in this region was still vivid in 1827. It also suggests a reconsideration of Anderson's conclusion, 'The very lack of an unequivocal association between the term 'moa' and any straight forward account



Figure 5. Moa feathers. R.P. Lesson's journal entries for 6 February & 8 February 1827, record what he was told were moa feathers (probably similar to these) used to decorate carvings on sailing waka which visited *l'Astrolabe*. For further information on moa feathers see Rawlence *et al.* (2012). The feathers in the photo are of Upland Moa, *Megalapteryx didinus*, collected 1949, Takahe Valley, Fiordland, New Zealand. CC BY 4.0. National Museum of New Zealand Te Papa Tongarewa.

of large birds hunted and eaten by Maoris...[is] the main flaw exploited throughout the long debate, about what if anything the Maoris had known about Dinornithiformes' Anderson (1989a: 90).

Lesson's journal references are undoubtedly the earliest account of the moa, including the name itself, confirming it was in use, at least among East Coast Māori, along with the claimed use of moa feathers and the provision of an unmistakable description provided by a recognised historical figure, Te Rerehorua. It must be considered therefore a significant addition to the historiography of the moa. It also underscores the remarkable contribution of early 19th century French naval scientists, the Lesson brothers in particular, to the natural history of New Zealand.

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