

1447-2554 (On-line)

<https://museumsvictoria.com.au/collections-research/journals/memoirs-of-museum-victoria/>

DOI <https://doi.org/10.24199/j.mmv.2021.80.09>

George Lyell and Frederick Parkhurst Dodd: authority and expertise in nineteenth-century Australian entomology

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Abstract

Coleman, D. 2021. George Lyell and Frederick Parkhurst Dodd: authority and expertise in nineteenth-century Australian entomology. *Memoirs of Museum Victoria* 80: 169–181.

This article focuses on the correspondence and careers of two lepidopterists, George Lyell and F. P. Dodd. Drawing on Dodd's unpublished letters to Lyell during the late nineteenth-century rage for butterflying, it examines how private acquisition gave way to the professional activity of collecting and, in Lyell's case, the eventual gifting of a large and significant collection of moths and butterflies to the National Museum of Victoria from 1932 through to 1946. The article also examines how issues of authority and expertise were measured and contested among collectors in this period.

Keywords

F. P. Dodd, George Lyell, lepidoptery, collecting, correspondence, professionalisation, National Museum of Victoria

Introduction

Professionalisation in nineteenth-century life sciences is a lively topic within British and North American histories of science, but it is a topic less examined in the Australian context. This article extends current debates by examining the correspondence between two self-taught Australian lepidopterists, Frederick Parkhurst Dodd (1861–1937) and George Lyell (1866–1951). Both were private collectors, born in the shadow of the Grampians in south-west Victoria, but that is where the similarities end. Lyell built a large collection of Lepidoptera while working full-time in business, whereas Dodd supported a large family through selling his specimens. The article begins with Lyell's decision in 1932 to donate his large collection to the National Museum of Victoria. It then moves back in time to an examination of Dodd's letters to Lyell from 1897–1904. These letters, while reflecting informal one-to-one transactions of exchange, donation and purchase, operate within a much larger push and pull of external factors. These external factors include a wide network of people who were themselves subject to a thicket of protocols, depending on their perceived status within the group. Furthermore, the complexity and interdependence of the various people involved in the science of entomology led to many disputes about who exactly qualified as professionals. Arguments as to who held the most requisite authority and expertise were particularly acute during what has been dubbed the Period of the Amateurs, 1890–1930 (Mackerras, 1949).

The George Lyell collection

In March 1946, Richard Pescott (1905–1986), Director of the National Museum of Victoria, informed the Australian Broadcasting Corporation's Melbourne office that the first instalment of a magnificent collection of Australian butterflies and moths was about to be exhibited in the main hall of the museum on Russell Street. The collector was George Lyell (1866–1951; fig. 1), and his gift to the museum was so large that it had to be exhibited in relays, from 1 April 1946 until mid-year. The announcement contained an overall description of the collection as well as information gleaned from an interview with Lyell about his gift to the state of Victoria. Although the whole appeared under Pescott's name, the real author was journalist and naturalist Charles Barrett (1879–1959). After the Australian Broadcasting Corporation published the piece, Barrett then circulated it to *The Herald*, *The Sun*, *The Age* and *The Argus*.

We learn from Barrett's interview that Lyell had decided to donate his collection after suffering a serious illness in 1932. In the 14 years since then, he had devoted himself to the colossal task of preparing more than 50 000 individual specimens for the handover, remounting and resetting many of them in the process. His aim was to build for the museum "the most comprehensive collection of Australian moths and butterflies ever known". At the time of Barrett's writing, the collection numbered 51 216 specimens, consisting of 11 721 butterflies and 39 495 moths, representing 6177 species all told. World-renowned authorities had already named 534 type

specimens, but new species were still being discovered and named within the collection. In addition to praising Lyell's great scientific knowledge and technical skill, Barrett emphasised that the gift had been unconditional, Lyell having taken the "broadminded scientific view" to amalgamate the Museum's collection with his own. In this way, gaps would be filled, ensuring that the collection would be "truly representative of Australian entomology". Barrett concluded with a brief overview of the collection's highlights, such as the "particularly beautiful" swallowtail butterflies and the "lovely Blue butterfly, *Papilio ulysses*". It was in the moths, however,

that the collection approached perfection (Melbourne Museum, Notice to Manager, ABC, AB 576, 29 March 1946).

Lyell was born at Ararat, Victoria, in 1866, the fourth of eight children (Hewish, 2014). His father was a printer born in Scotland and his mother was English. Apparently, he showed little interest in natural history until he caught his first butterfly, a caper white, at Albert Park in 1888. Wanting to know more about this creature, the 22-year-old contacted Frank Spry (1858–1922) who immediately introduced him to the Field Naturalists' Club of Victoria, which was founded in 1880. While attending meetings regularly over the course of



Figure 1. George Lyell as a young man.

the following year, Lyell continued to collect at Albert Park, where he distinguished himself by collecting 13 lesser wanderers, a butterfly that had not been recorded in southern Victoria for well over a decade. He also made occasional visits to other well-known hunting grounds: Murrumbena, Springvale, Hampton and Cheltenham.

In 1890, Lyell moved to Gisborne in central Victoria to work as bookkeeper for the town's largest business, Cherry & Sons Pty. Ltd., timber merchants and manufacturers of dairy equipment. Later, as Lyell rose to Manager and then Director, the firm developed an export business in entomological supplies such as nets, mounting boards, pins, forceps, cotton wool, boxes and cabinets (Hewish, 2014). Here, in this small country town outside Melbourne, Lyell lived for the rest of his life. His collecting was confined to Victoria and New South Wales, except for one trip each to South Australia, Tasmania and southern Queensland. Nevertheless, he corresponded and exchanged Australia-wide with scores of notable entomologists such as A. J. Turner and R. Illidge of Brisbane, G. M. Goldfinch of Sydney, G. B. Lower of Adelaide and F. P. Dodd of Kuranda, north Queensland. He also co-authored, with G. A. Waterhouse, *The Butterflies of Australia* (1914). This extensive exchange network across Australia resulted in long series of individual species, a notable and highly valuable scientific feature of Lyell's collection.

In outlining Lyell's career, Barrett paid particular attention to Lyell's triumph over the largest obstacles facing collectors, namely housing his collection and protecting it from the scourges of pest infestation and mould. Lyell achieved this by devising a small display cabinet of six or eight drawers, constructing it in such a way that each subsequent unit could be fitted together to make more cabinets, similar to the way in which a bookcase might be enlarged. In the 1890s, at the start of his collecting career, Lyell could only afford to build one of these cabinets annually, but by 1932 he owned more than fifty, built by Cherry & Sons. What Barrett did not know, or chose not to disclose, was that Lyell had approached Sir Macpherson Robertson in 1934 for £500 to build the many extra cabinets he needed to house his gift. Robertson, founder of the MacRobertson Confectionery Company in the Melbourne inner-city suburb of Fitzroy, was one of Australia's richest and most successful businessmen. Whereas Cherry & Sons struggled after the Depression, business remained strong for Robertson who contributed generously to the upcoming centenary of Melbourne's founding in 1835, including a substantial donation towards the building of the city's herbarium. In essence, Lyell asked Robertson to do for Australian Lepidoptera what he had recently done for botany. Signing off anonymously as a collector and fellow-Scot, the normally modest Lyell took the opportunity to boast that his collection would be "an object lesson to all the museums of the world and a lasting scientific attraction to Melbourne". Lyell finished by inviting Robertson to make enquiries of the Museum Director, D. J. Mahony, an invitation promptly taken up by the confectionary magnate (Melbourne Museum, Archive Box 579, 27 December 1934). In his response, Mahony revealed Lyell's identity and confirmed that a shortage of money was indeed hampering the progress of his gift. In

praising the collection as "the best of its kind", Mahony described the meticulous way in which Lyell cared for his insects. Not only did he perform yearly stocktakes to check on their condition, he also compiled annual balance sheets showing acquisitions, as well as insects discarded or exchanged. Mahony confirmed that "Every specimen is therefore fully documented" (Melbourne Museum, Archive Box 579, 9 January 1935). In the end, Robertson declined to support Lyell, arguing that he had already over-committed himself in support of the city's centenary.

George Lyell and Frederick Parkhurst Dodd

When interviewing the elderly Lyell in 1945, Barrett asked him which was the favourite of his 6177 insect species. Lyell at first parried the query, declaring "you have set me a poser. They are all beautiful". In the end he confessed that it was the Queensland wood moth *Dudgeonea actinias* Turner, bred "from a rotting log in a creek bed at Townsville" by Frederick Parkhurst Dodd (fig. 2). In 1903, Cyclone Leonta buried the log under 30 feet of flood debris. Of the 13 specimens bred by Dodd, seven are in the Lyell collection (fig. 3). While Dodd was just one of Lyell's many Australian correspondents, we know a lot about their relationship because there is an extensive run of letters from Dodd to Lyell in the Melbourne Museum archive. Although, unfortunately, Lyell's letters to Dodd do not appear to have survived, the correspondence reveals the many interdependent players and complex processes at work in shaping the Australian entomological community during the late nineteenth century.

The collecting, exchanging and selling of insects was serious business in the years leading up to Australian Federation in 1901, evident in the brisk and lively circulation, both locally and internationally, of collectors, publications, specimen boxes and letters. Given the enthusiasm for Lepidoptera, there was serious money to be made, especially on large and brightly coloured tropical specimens. The story of Conrad Kelsall, an English immigrant farmer who settled in the rainforest of north Queensland, is instructive. Within four short months in 1903, we see the rise and fall of Kelsall's hopes for a tidy profit from butterflying on the Little Mulgrave River. In letters to his sisters back in Devon, he began with great confidence, declaring his tropical home as "so new & unexplored that one is almost certain of making new finds". With the help of an indigenous man nicknamed Paddy, who captured about a dozen males of the large birdwing butterfly *Ornithoptera euphorion* Gray, Kelsall asked 6d for each of them from Alfred Bell, an insurance agent and butterfly enthusiast based in Cairns. Later, for a box of 100 butterflies, Bell paid Kelsall 25/-, proposing that, instead of cash transactions, his profit would double if he agreed in future to "run on halves" and "take some risks". Once the business was "in full swing", Bell envisaged that similar boxes might average out at "£3 or £4 per hundred". Although new to the collecting business, Bell boasted international contacts with the famous lepidopterist Walter Rothschild, as well as with Watkins and Doncaster, the English natural history dealers. Bell was also supplying insects to Lyell and Waterhouse in Sydney, at that time preparing their catalogue of Australian butterflies. But within a few months, Kelsall confessed to his sisters that he

and his business partner needed “to modify our castles considerably”. After failing to catch anything in an expedition to Lake Barrine, they returned to discover that all but 14 of the 100 insects they had sent to the Australian Museum had been rejected. Worse was to come in the shape of an insulting and caddish letter from the English dealers who purchased only two of the butterflies sent over. Claiming that the rest were too damaged, they promised to return them all to Queensland but no box arrived, leaving Kelsall to conclude, ruefully, that “it is easy swindling a person 12 000 miles away” (Lambkin, 2013).

While Kelsall was one of many minor part-time enthusiasts, Frederick Parkhurst Dodd is now regarded as a leading Queensland collector. Born in Wickliffe, Victoria, one stagecoach stop from Lyell’s birthplace in Ararat, he was the son of a pound-keeper and the eldest of eight children (Monteith, 1991; Neboiss, 1986). After the family moved to Stawell, on the edge of the Mallee, Dodd was educated at the same local state school as Lyell. Here the similarities stop. While Lyell went on to lead a settled life in a rural town within easy reach of Melbourne, Dodd joined the bank in Victoria and was then shunted around to various bank jobs in Queensland, starting in remote Townsville in 1884. He never returned to live in Victoria. Apart from six years in Brisbane, where he met and learned much from a number of prominent entomologists connected to the Queensland Museum and the Natural History

Society, Dodd’s early life as a bank clerk took place a long way from the metropolitan scientific societies of Brisbane, Melbourne and Sydney. Eventually, hating the confinement of office work, and determined to become a full-time collector, he left the bank and eventually settled in 1904 in Kuranda, a tiny town on the Atherton Tableland. The area was rich in insects, but all his entomological books and journals had been destroyed by Townsville’s Cyclone Leonta the year before. In Kuranda there were no local libraries and no entomological societies or meetings in which he could participate.

In Dodd’s letters to Lyell, we see the value, and indeed the necessity, of correspondence that connected him to Melbourne’s scientific and collecting community, including the Victorian Field Naturalists’ Club and the National Museum of Victoria. Lyell kept Dodd connected to professional societies and their activities, including access to the all-important journals. Membership of these societies and subscriptions to their publications were expensive, often beyond Dodd’s means, but when business was good, he turned to Lyell for suggestions as to who might propose and second his admission. In addition to Waterhouse and other prominent entomologists at the Australian Museum in Sydney, Lyell counted Walter Froggatt (1858–1937) as a friend. Founder of the Naturalists’ Society of New South Wales in 1891, Froggatt published regularly on Australian entomology in



Figure 2. *Dudgeonea actinias* Turner.



Figure 3. Seven specimens of *Dudgeonea actinias* Turner.

the *Proceedings of the Linnean Society of New South Wales*. After Froggatt was appointed government entomologist to the New South Wales Agricultural Department in 1896, Dodd asked Lyell to mention him in case the Department wanted to purchase some of his specimens (Museums Victoria Archives, OLDERSYSTEM~03023, AB 00368, 24 March 1901).

Dodd's correspondence with Lyell is rich in self-description, shedding light on the so-called divide between mere collectors and entomologists. The label of mere collector had been hurled by Gerard Krefft, controversial Curator of the Australian Museum, at William John Macleay during a parliamentary investigation into the museum in 1874 (Ville, Wright, and Philp, 2020). Although this divide between the true scientist and the mere collector was more rhetorical than real, it was deeply embedded in nineteenth-century thinking about who exactly possessed the authority and expertise to speak for entomology. In 1838, the British entomologist John Obadiah Westwood (1805–1893) described as the very “lowest class of entomologists” those “whose sole object is the procuring, either by capture or by purchase, of a collection of handsome insects, to be placed in drawers without any arrangement other than that of beauty and colour or size” (Wale, 2019, pp 405–406). As an insect breeder and naturalist, Dodd was far from this lowest class. His deep knowledge of the bush around him and pride in his technical skills are clear in his letters, which are full of observations about the habits and life histories of insects—their location and distribution, their food plants, their relationship to other species and genera, their enemies and their mechanisms for self-defence. Many of Dodd's fine-grained observations stemmed from tireless watching of the insects with which he lived intimately, both at home in breeding boxes, in the bush beyond, and in his Kuranda garden, planted with especially chosen flower and tree species.

Despite his expertise, it is notable that Dodd never describes himself as an entomologist. Instead, his insects are “entomological material” and he himself is a “worker in Entomology”. He even apologised to Lyell in his first letter for addressing him as entomologist on the envelope, explaining that he wanted to ensure the letter reached him (December 1897). There are several explanations for why Dodd refused to call himself, or anyone else he admired, an entomologist. The first reason was his dislike of the entomological fraternity: “I have a very poor opinion of Entomologists generally”, he tells Lyell. In particular, he had little time for the growing number of sedentary and salaried museum men whom he regarded as far less knowledgeable and skilful than himself. Writing to Lyell in 1901 about J. A. Kershaw (1866–1946), later curator and then Director of the National Museum of Victoria, Dodd places him contemptuously amongst the “amateur Entomologists”, with the word “amateur” doubly underlined for emphasis (National Museum of Victoria, 15 July 1901). The reason for his dismissal of Kershaw and others stemmed from his pride as an insect breeder with first-hand eye-witness experience. Even Froggatt, author of *Australian Insects* (1907), the first comprehensive textbook on Australian entomology, failed to come up to scratch in Dodd's opinion. While he conceded to Lyell that Froggatt “may be a good entomologist” he added that “he had better drop writing the life histories of moths”. According to Dodd,

Froggatt had been duped by a Newcastle collector called Thornton into believing that the larvae of *Endoxyla encalypti* had bored as deep as five feet into the wattle tree roots, “high class rubbish” that had been published in the *Proceedings of the Linnean Society of New South Wales* (National Museum of Victoria, 1 January 1898). Elsewhere, Dodd refers to Froggatt (anonymously) as “an Australian Munchhausen” for producing the same exaggerated observations (Dodd, 1916).

Keen to read the latest essays, notes, and pamphlets about insects, Dodd published some important discoveries of his own in entomological and natural history journals, both Australian and international. Geoff Monteith gives two examples of the ways in which Dodd was ahead of his time in understanding the life histories of insects. Dodd is now known for his breakthrough insights into the symbiosis between green tree ants and the highly prized butterfly *Liphyra brassolis* Westwood. Also notable was his detection of the mimicry between the rare swallowtail butterfly, *Papilio laglazei* Depuiset, and the poisonous day-flying moth, *Alcides agathysus* Kirsch (Monteith, 1991). However, with no access to large reference collections and short on time, Dodd was, as he confessed to Lyell, “but poorly acquainted with the names of our [Australian] insects” (National Museum of Victoria, 11 October 1897). A few months later, having picked up on the fact that Lyell was “well posted in the names”, he asked him for help, confessing that

unfortunately hundreds of my species are yet unknown to me by name. I shall do all I can to get them identified + hope to get a list compiled such as yours. When furnishing particulars of specimens sent, or even acknowledging exchanges, can you kindly add names of sub family + family of individual specimens; in many cases the generic name + view of the moth does not tell me what the insect is (National Museum of Victoria, 11 December 1897).

Before long, he was thanking Lyell for the trouble he had taken in supplying him with names (National Museum of Victoria, 12 February 1898).

Dodd's failure to master the precise names of insects did not mean that he despised the systematists. In fact, he was extremely proud of the great attention shown to his collection by Brisbane-based Dr Alfred Jefferis Turner (1861–1947), an expert in classification who would often travel to Townsville, and later Kuranda, to study, describe and name Dodd's insects (National Museum of Victoria, 29 September 1900). You can hear Dodd's pride in a comment he made to Lyell of a small syntomid he sent on to him. Turner, he wrote, regarded the specimen “as a great prize, and in fact he thinks very favourably of all the kinds I am sending you. He often calls upon me, to examine my collections, + learn if I have anything fresh in the way of captures, or from my breeding boxes”. Rowland Illidge, Dodd's mentor during his years in Brisbane, was another expert identifier, helping him to name hundreds of species. Despite his self-confessed deficiencies in this arena, Dodd was never cowed. When Lyell returned a large hawk moth, believing it was not the moth Dodd had promised

him, Dodd exploded with irritation. In this instance, where the differences between species were scarcely perceptible, Dodd's experience as a breeder gave him that extra degree of self-certainty (National Museum of Victoria, 27 May 1901).

On balance, rarity was a strong possibility in the remote Queensland tropics, but how could Dodd always be certain, lacking expert associates and reference materials? Perhaps his rare insects were common elsewhere? Furthermore, in several letters, responding to Lyell's doubts about identifying a particular specimen, Dodd asked him to "refrain from getting fresh species named" until he had corresponded with Turner on the matter. If the insect was indeed rare, Dodd could only get full credit for the discovery after Turner's identification. More often, to his regret and frustration, he confessed to Lyell that he

carelessly sent away unnamed things, perhaps some reared with great care + trouble, to find some day that they have been described from "Somebody" collection, having been taken or bred in Queensland!! This is very annoying to me. I have bred more Zeuzeridae than anyone living or dead, and my name is never mentioned in connection with the new things. Also I have bred more Charagiae [*Aenetus*] than anyone else. As to Xylos I have bred over 50 species in north Q'land, including those I got at Charters Towers years ago, perhaps 60 species. I don't know how many species I bred in south Q'land (National Museum of Victoria, 26 November 1900).

Clearly, Dodd resented the anonymity that came with living so far away from the centres of entomological research. Given the toil of collecting rare and elusive insects, this was understandable. Why should others, often wealthy purchasers, be given the credit for his work? This sometimes made him quite vain about being acknowledged for the discoveries he had made. In a letter of June 1898, he followed up with Lyell on one of his moths: "Oh, when getting that beautiful Oecophoridae named did you credit me with breeding it? I have one left and Dr Turner was charmed with it" (National Museum of Victoria, 9 June 1898). At other times, however, he begged Lyell to conceal information about what and where he was collecting. The wish to be acknowledged for the very details he needed to conceal reveals the painful bind in which he found himself (Monteith, personal communication, 6 July 2018).

Lyell understood his correspondent's dilemma and was happy to observe the friendly protocol of sending all queries about names to Turner before consulting anyone else. In return, Dodd made a point of impressing on Lyell how much he trusted him. For instance, Dr Turner was, he told Lyell, anxious to name one of his insects as new but he only had two specimens, one of which he had sent to Lyell. "No other collector would have done that", he declared. Nevertheless, Dodd's inability to name insects scientifically remained something of a sore point, leading him many years later to pronounce, defensively, to J. A. Kershaw:

It is too severe a mental strain for a professional collector to attempt to learn the names of the

thousands of insects which pass through his hands, so I seldom can supply names . . . Years ago I had a long list of names of Lepidoptera, but lost it in the Townsville cyclone. I could not replace it, a busy life of collecting has prevented my endeavouring to make another.

Dodd's boast was that he possessed other skills, such as his detective work in locating and hatching out insects, then setting them perfectly, reminding Kershaw at the end of his letter: "I can send nicely set bugs ants &c &c if the Mus[eum] cares for same" (National Museum of Victoria, 1 June 1911).

Building Trust

Dodd's first letter to Lyell, dated 9 September 1897, enquired if he might be included in his circle of "exchanging correspondents" (National Museum of Victoria, 9 September 1897). Dodd had often seen Lyell's "nicely set insects ... perfect in every way" in Queensland, so he was confident that their exchanges would not just be rewarding but (even more importantly) equal. A perfectionist, Dodd often complained about the low standards of others. In fact, he told Lyell he did not want Melbourne entomologists to know that he had a large number of insects for exchange, his reason being that "several of them do not set well enough to please me + as a rule I get inferior material to my own". Kershaw, for instance, had proved disappointing, palming off on him "faded, damaged, or common specimens" for the "rare or beautiful things" he had been sent. Lyell was probably sympathetic; like Dodd, he was proud of his meticulous standards of preservation and mounting. Notably, although Barrett would later describe Lyell's gift to the National Museum as unconditional, there was, in fact, one condition. When it came to amalgamating his collection with the Museum's, Lyell stipulated that his own was to take precedence. While anything worth saving from "the smaller and poorer old museum collection" would be remounted for inclusion, he demanded that most of the museum's specimens be scrapped (Melbourne Museum, Archive Box 579, 27 December 1934; Lyell to Robertson).

Despite Lyell's meticulously high standards, Dodd soon found cause to chastise him for the arrival of 26 damaged specimens, including some with "one or both antennae broken and missing". Suddenly, the mutual trust and reciprocity that was to cement their relationship was threatened. The geographical balance and complementarity that Dodd was seeking between Victorian and Queensland specimens was also jeopardised:

In looking through the exchange lately received I regret to notice that many of the specimens are imperfect, or rubbed, and others seem rather old. You may remember my request for clean and perfect insects, and I trust future lots will be a great improvement on this ... I have a large collection and the condition of same is first class. I keep no damaged specimens that I can replace with perfect ones and I am sorry to say that my Victorian collection compares very

poorly with my own; in fact they spoil the appearance of the others. Therefore I want no more damaged things and no matter how rare a species is, please do not send it to me unless perfect in every particular. I cannot prize a thing with a great gap or gaps in its wings, antennae missing, or badly rubbed &c &c. Should you care to continue these exchanges may I hope that you will kindly place me upon your first class list ... (National Museum of Victoria, 12 February 1898).

Behind Dodd's fastidiousness lay the fear that Lyell was not taking him seriously enough. Perhaps Lyell regarded him as a mere collector? This anxiety is evident in the way in which the adjective *first class* shifts in this paragraph, from the insects in Dodd's collection to the list of Lyell's correspondents. Keen to reinforce his standing as a first-class collector with a first-class collection, he reminded his Melbourne correspondent of the abundance he enjoyed as a tropical collector. Unlike many who were obliged to capture "almost everything that flies", he had the geographical advantage of refusing hundreds when out in the fields. The spectre of being branded as a mere collector, isolated from professional networks, also prompted Dodd to say that, should anyone enquire of a particular insect, then

perhaps you will have it mentioned they are in collections Lyell et Dodd, not taken by me as if I was a mere collector. I fear there is an impression abroad that I want specimens for others and not myself and that that is why I "haggle" for only first class specimens, should therefore you have any such impression pray dismiss it.

In other words, Dodd wanted it to be known that, instead of collecting insects solely for exchange, he was proud to retain many of the most perfect and beautiful insects for his own collection (National Museum of Victoria, 16 July 1898).

This early rupture was soon healed when Dodd received a parcel whose contents were "perfect in every way". Writing to thank him, Dodd made no apology for being fastidious. In fact, as if to underline the absence of any apology, he added bluntly that Lyell's new parcel contained "several common things" he did not want. These he would return straight away. Unable to resist reiterating the point about tropical abundance, he had to concede, in fairness, that he was able to catch more in 24 hours than Lyell could catch in five days, but that discrepancy did not mean he had to accept "poor or broken things from a Victorian collector". Nevertheless, the relationship was important to him so that meant an on-going commitment to the delicate task of building trust and reliability. When Lyell received a rare and expensive butterfly, *Ogyris genoveva* Hewitson, and one of its antennae was missing, Dodd insisted that the specimen was absolutely perfect when despatched from Cairns; nevertheless, he immediately sent a damaged specimen with "one good antenna to replace the lost one" (National Museum of Victoria, 26 October 1900, 26 November 1901). As part of the

rules governing their exchange, Dodd also assured Lyell that he could return anything he did not want for credit.

This gentlemanly exchange of first-class specimens continued for another couple of years until August 1900 when Dodd informed Lyell that altered circumstances meant he was unable to continue indulging in this pleasurable pastime. With a growing family and a costly relocation from Brisbane to Townsville – a place of "higher prices for everything" – he must now leave off his gentlemanly pursuits (National Museum of Victoria, 27 August 1900). To Kershaw, whom he hoped would purchase insects for the National Museum of Victoria, he wrote that instead of gracing his friends' cabinets, he must now look upon his "beloved specimens ... from an £8 point of view". "Most of my best things are reared", he boasted, adding "I keep no rubbish, and no one need fear at any time that I will victimize my correspondents". Despite the taint of trade – making dollars – Dodd nevertheless insisted that his business was an honourable calling. Furthermore, he would keep himself at arm's length from commerce by employing an agent (National Museum of Victoria, 17 September 1900, 31 May 1901). By 1904, he declared that "business with the dealer fraternity is so unsatisfactory" that he was badly in need a larger pool of reliable correspondents. Dispensing with middlemen, he now preferred to deal directly with collectors and museum personnel (National Museum of Victoria, 4 May 1904).

Once Dodd had turned commercial dealer, he encountered a host of rules and protocols governing selling, buying and gifting. These activities were linked, not just to questions of honour and trust between correspondents, but to perceptions of social class and educational background (Lucas, 2013). There was, for instance, the delicate matter of promising certain correspondents first option on rare or large insects. So great was the offence if these sought-after insects were subsequently seen in others' collections that, if Dodd was planning to initiate a new contact, he would first ask permission from his established correspondents. It was also bad form to share the secret of a special location without seeking permission. For instance, Dodd claimed to be the first to let his mentor Rowland Illidge into the secret of where to find two species of the extremely valuable *Aenetus* (*A. ramsayi* Scott and *A. lewinii* Walker) outside Brisbane. To Lyell he divulged: "I was the first in Queensland to find and breed these and at once informed Illidge and we several times went out together. I went away for 12 months + he took [Reggie] Relton into 'mateship' without consulting me". Illidge had also found *Aenetus* exuviae when out in the bush on his own and not let on to Dodd about his discovery. Finally, Dodd liked a correspondent to give full details of unusual insects. When it came to conveying such information, Oswald Lower, a pharmacist in Broken Hill, was one of the very slim ones, he complained. Lower also offended Dodd by lacking an eye for beauty. The closest he got to praising Dodd's settings, or a particular insect, was to ask him to "send another pair". Instead of such obliquity, Dodd preferred directness. He liked correspondents "to express pleasure over a beauty or a rarity": "I get quite cross when I send away a lovely thing if the receiver does not 'enthuse' a little". Lyell must have remonstrated over these complaints about Lower and others

because Dodd conceded: “You are right, biz is biz and I should get all I can. As a seller it matters nothing to me what the buyer is like, I suppose (National Museum of Victoria, 12 August 1901, 6 July 1904).

As a commercial dealer Dodd touted his insects via several selling points. Rarity, beauty and large size were chief. So too, as we have seen, was endorsement by an expert classifier like Turner. The other selling point was his talent as an insect breeder. When circulating sale lists with prices, some pages contained a banner heading stating that all specimens had been bred. In particular, he was proud of his high-priced things, such as his Xylos, stuffed wood-boring moths, bred and reared by him. In his eyes these Xylos were perfect in every way. With every skerrick of fat scrupulously removed, they were (he boasted) very unlikely to turn greasy (National Museum of Victoria, 17 September 1900). Dodd's letters also contain detailed descriptions of his breeding routines. Sometimes he would watch all day until late at night for a large and rare wood-boring moth to hatch. Then, sleeping only for a few hours, he would wake to find his vigilance had been in vain: his valuable moth had emerged and rubbed its wings. Moths in the “restless” but “handsome” family of Notodontidae were particularly prone to offend in this regard, often emerging after he had retired (National Museum of Victoria, 24 March 1901). It was necessary to keep vigil in the bush as well, tending the larvae of insects for years before cutting and transporting the timber home for closer monitoring on the eve of emergence. Sometimes, to Dodd's chagrin, local aboriginals ate the grubs he was watching over. That these grubs were a traditional and highly nutritious food source for Indigenous people cut no ice with Dodd. He was always very testy in his letters when mentioning this so-called theft of his livelihood. His son Walter D. Dodd (1891–1965), also a naturalist, understood better than his father the symbiosis between Indigenous people and country. From Walter Dodd's observations, it was clear that customary ways of living on country entailed a balanced economy of nature. Writing about some very large wood moths he had caught south-east of Perth in 1912, he noted that “The blacks were very fond of ‘the grub’”. Captive to the prevailing discourse surrounding the “inevitable dying out” of the Aboriginal race, Walter Dodd added that since indigenous people had become extinct in certain localities, “whole patches of wattle forests were laid low, there being no check upon the breeding of these insects” (*The North Queensland Register*, 13 April 1935).

The highest priced moth Dodd ever offered for sale was *Aenetus mirabilis* Rothschild, a species found only in north Queensland (fig. 4). His excitement at sourcing this large moth can be heard in his warning to certain favoured correspondents to “save up your pennies” for a pair (National Museum of Victoria, 26 November 1900). He had read about this moth in a journal article published by Walter Rothschild in 1894, in which the location was disclosed as Cedar Bay, North Queensland. This was a very remote spot 40 kilometres south of Cooktown and accessible only by boat or by foot (Rothschild, 1894). Dodd spent weeks and “a great deal of time and trouble” searching for this moth, at a cost of over £60, so he was obliged to charge highly for it. He assured

Lyell, one of the first collectors he contacted regarding his precious discovery, that *A. mirabilis* was unlikely to be found in private collections, or even in the British Museum or any Australian museum “for many a long day, unless through me”. As for Lyell's hint that the Victorian Government's entomologist Charles French (1842–1933) owned an *A. mirabilis*, Dodd was dismissive, imagining that it must be a damaged specimen, not perfect like those now in his possession. He asked that Lyell keep quiet about his discovery as demand for specimens was going to be strong, and Dodd wanted to prioritise overseas collectors because they would pay considerably higher prices than those fetched in Australia.

At first, Dodd asked Lyell for 60/- to 100/- [£3–£5] per pair for *A. mirabilis*. This approximates to a price range of £350–£585, or AUD \$660–\$1100 in today's purchasing power, the wide range reflecting the size, condition and appearance of the insects. Dodd believed this price range was fair and reasonable. His justification lay in the relative pricing of *Aenetus ramsayi*, a species of *Aenetus* that he had managed to sell to English collectors for £4–£6 per pair, even though this moth had been known for a long time and was well distributed, unlike the rare and “very fine” *A. mirabilis*. *A. ramsayi* was also smaller than *A. mirabilis*, the female of which averaged wing spans of 6.5 inches. In the end, Dodd settled on a lower quotation of 55/- to 75/- per pair for Lyell, reducing the cost a little because he realised his friend would find it impossible to obtain such rarities if he “stuck at their money value”. He asked Lyell not to mention this discount as he also planned to sell to his competitors (i.e. Australian collectors he disliked such as Lower, a member of the questionable dealer fraternity; National Museum of Victoria, 26 November 1900). Charles French was another he distrusted, telling Lyell that French had the nerve to ask for his precious Xylos but still hadn't sent on the beetles he owed him (National Museum of Victoria, 17 March 1901). Lyell, on the other hand, belonged to Dodd's category of reliable correspondents. In fact, so reliable was Lyell that when, a few months later, wealthy clients had failed to send on remittances, Dodd asked him to pay up-front before he had even despatched the specimen box (National Museum of Victoria, 4 February 1901). He also asked that Lyell pay him a little every month to help keep him afloat between transactions.

When it came to selling his *A. mirabilis*, Dodd pitched his highest price to Lower – £5 for a single pair. In the end, he sold him a pair for £4, a price that he claimed pleased Lower very much. Dodd himself was happy with the transaction. Given Lower's wide network and authority in the field, this sale would prove a good advertisement for Dodd's insects (13 June 1901). In general, Dodd figured that it made good business sense to sell his *A. mirabilis* cheaper to Australian correspondents because this would advertise the perfection of his preservation techniques. Despite this, Dodd held himself aloof and was never less than testy with most of the dealer fraternity, believing that his southern brethren were all down on him because, after 1900, he would only sell and not exchange his grand tropical species for anything they could supply (National Museum of Victoria, 12 August 1901).

Conclusion

In July 1910, G. A. Waterhouse travelled from Sydney to the Atherton Tableland for a week of collecting. Staying in the Kuranda Hotel, he spent a good deal of time with Dodd and his family who were warmly hospitable. From here, Waterhouse wrote to Lyell, describing his first impressions of Dodd. There was much to like about the man. He was clearly an immensely enthusiastic collector who generously lent his sons to visitors like himself for collecting trips. He was pernickety, though, a charge that Dodd would have been proud to acknowledge. In running his business, however, Waterhouse declared him unmethodical, with barely one per cent of his pinned insects labelled with dates. Where there were dates, he suspected that they were a “mere matter of recollection”. His classifications were sloppy too, with “similar groups of insects ... mixed up anyhow” (National Museum of Victoria, AB 369; 17 July 1910). From Dodd’s correspondence with the English dipterist Colbran Wainwright in the same year as Waterhouse’s visit, this somewhat cavalier attitude about details can be seen in his

postscript to one specimen box: “The localities are roughly marked off on the lids of the cigar boxes. The next lot will be arranged better, and month of capture given” (Royal Entomological Society, 24 August 1910).

As Waterhouse’s week in Kuranda neared the end, he informed Lyell that Dodd’s “tourist business brings the most money” meaning that “attention to scientific detail suffers in consequence” (National Museum of Victoria, AB 369; 17 July 1910). By tourist business, Waterhouse was referring to Dodd’s recent commercial initiative: the opening of his house to members of the public for an entrance fee. Before 1910, Dodd had always welcomed visitors curious to view his collections and see him at work, setting and preserving his specimens, but with entomology a full-time business for supporting his large family, he decided to charge a fee for this. Here we see him in a three-piece suit, posing in his garden with a butterfly net for one of his paying tourists (fig. 5). Dodd was quite the showman in this new business venture, an empresario who used special lighting effects and other tricks to impress his visitors with the mystery and beauty of his insects, turning his home into a semi-



Figure 4. *Aenetus mirabilis* Rothschild (female).



Figure 5. F. P. Dodd in his garden at Kuranda. Image courtesy of Queensland Museum.

public commercial site and museum. Into sober, scientific scrutiny, he injected an older element of spectacle and magic, performing his insects with dramatic exhibitions which mingled natural science, wonder and magic. This was the case even when his visitors were some of the top people in the field, such as Walter Baldwin Spencer and A. J. Gilruth, who visited in 1911.

Margaret Fountaine (1862–1940), a globe-trotting British lepidopterist who had recently settled with her lover not far from Kuranda, left her own account of calling to see Dodd's collection in 1916. Waiving the usual admittance fee of one shilling each, Dodd greeted them heartily as fellow entomologists, and they had a delightful time taking tea and revelling in his exhibits. Fountaine was impressed by Dodd's knowledge of Britain's scientific scene. He had read her articles in the *Entomologist* and in the *Transactions of the Entomological Society of London*. After talking entomological shop for a while, Dodd tried, with a "shrewd, penetrating" look, to dissuade Fountaine from thoughts of farming in the area. He argued, as others had done, that her prospects of success were dim. As she left, she invited him to come over and see her Malay and Java butterflies, an idea that seemed to delight him, but it would not be for a week or so (he claimed) because he was so busy. Fountaine's diary entry concludes:

We both liked Mr Dodd very much, and I believe the old man wishes to be a good friend to us, especially as he sees that we are not going to be in any way rival dealers, which naturally, as he makes his living out of this business, he could not be expected to look upon with any favour (L. Joanne Green, personal communication, 30 June 2019).

Fountaine's own eye was shrewd and penetrating in concluding that their reception would not have been so friendly had they planned to set up as business competitors.

We have seen Dodd move from exchange to commerce, transacting a business in which there were no fixed prices to guide him in determining the value at which he should trade a specimen. Beauty, colour, size and rarity were key determinants of cost, but perhaps most important was the symmetry and neatness of the setting, allowing the specimens' natural attributes to be seen. Since he was well known for his personal skill in preserving specimens, he believed his reputation in this regard entitled him to charge extra. At first Dodd is uneasy about his new dealer persona, embarrassed to be treating his insects as commodities instead of exchanging them for pleasure. He also worried, at the outset, that seasoned dealers and collectors like Lower would see him as green and try to take advantage of him. But in general he regarded trade as honourable. He needed to get his insects out through the proper channels and did not see any of this as injurious to the pursuit of science. In sum, he was well above J. O. Westwood's definition of the very "lowest class of entomologists", a collector with inert drawers of "handsome insects".

Despite Dodd's many promises to Lyell, Kershaw and others that he would start to be more methodical in preserving dates and locations, as well as keep lists of his insects, he kept on failing to do so. As for keeping a collection of named

specimens to guide him, this would not only be too cumbersome but also beyond what he could afford (National Museum of Victoria, 1 June 1911). It is difficult to determine if his shortcomings regarding taxonomic identification negatively affected his pricing. Although many of the letters contain lists with prices attached, we see him in his correspondence attempting to establish equivalencies and differences in value from one specimen to the next. Isolation, doubts about identification and the difficulty of knowing for certain if one's captures were rare were all inhibiting factors. The best he could do was to offer the insects in as perfect a condition as possible, along with close observation of their life histories. How did he classify himself? In the end, Dodd saw himself, not as an entomologist but as a professional collector, training up his four sons to be useful, all-round collectors across the various orders (National Museum of Victoria, 6 December 1912). One son, Alan Parkhurst Dodd (1896–1981), would in fact become a distinguished entomologist, collecting and importing live specimens of the *Cactoblastis* moth from Argentina to destroy the prickly pear that had spread over millions of acres of Queensland farmland. In Alan, F. P. Dodd's legacy lived on.

Acknowledgements

My thanks to Dr Geoff Monteith, entomologist at the Queensland Museum, for his generous and expert annotation of my transcription of the Dodd–Lyell correspondence in Melbourne Museum's archives. Thanks also to L. Joanne Green for sharing her transcriptions of Margaret Fountaine's diaries, held in Norwich Castle Museum, UK, and to Geoff Thompson at Queensland Museum for speedily supplying the image of Dodd in his Kuranda garden. My collaborators at the Melbourne and Australian Museums, archivists Nik McGrath and Vanessa Finney, and entomologist Simon Hinkley, must also be thanked. This paper has been funded by the McCoy Seed Fund, a collaboration between the University of Melbourne and Museums Victoria, and the Australian Research Council Linkage Grant, 'Merchants and Museums' (LP160101761).

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