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Source: American Museum Novitates, 2022(3987) : 1-28

Published By: American Museum of Natural History

URL: <https://doi.org/10.1206/3987.1>

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The Itineraries of Alfred Crossley, and Natural History Collecting in mid-Nineteenth Century Madagascar

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ABSTRACT

Alfred Crossley was one of the most prolific collectors of natural history specimens in Madagascar during the 19th century, with several vertebrate species named for him and numerous vertebrate and invertebrate holotypes to his credit. Yet the details of his life, and even of his professional activities, have been almost completely lost to history. Here I assemble what is known of Crossley's Madagascar itineraries in the years between 1869 and 1877, with the aim of providing a basis for more precisely pinpointing his many collecting localities. With the aid of a newly rediscovered obituary and contemporary press extracts, I also outline the details of a productive and drama-filled life that began with shipwreck and captivity in Madagascar and ended in a lonely death there, possibly under dubious circumstances. I also seek to understand why Crossley attracted so little attention while doing such visible and significant work, concluding that this lack of recognition was due partly to humble social origins in an era of gentlemen scientists and partly to an exceedingly retiring personal disposition.

INTRODUCTION

Not until the middle of the 19th century did the collecting of natural history specimens in Madagascar begin to become professionalized. It had long been known, of course, that the island offered matchless natural wonders: as early as 1771, the botanist Philibert Commerson had described Madagascar as the naturalists' "promised land," where "the most unusual and marvelous forms are found at every step"; by the time the 19th century had reached its halfway

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point, many European cabinets, museums, and private collections had amassed impressive if haphazard samplings of Madagascar's flora and fauna, and many hundreds of the island's endemic animal species had been named. But it was only in the 1860s that determined collectors began to traverse the island with the principal intention of collecting botanical and zoological specimens to represent the island's natural diversity.

A variety of names is associated with the natural history of Madagascar in that formative mid-19th century period. But a handful stand out. Most visibly, there was the prolific French geographer and naturalist Alfred Grandidier (1836–1921), who made three voyages to the island between 1865 and 1870, and who devoted the remainder of his long life and considerable fortune to producing the spectacular series of 39 large volumes entitled *Histoire physique, naturelle, et politique de Madagascar*. Grandidier's explorations also resulted in an extensive natural history collection. Much of it was lost in a fire on the island of Réunion in transit to Paris (Faure et al., 2019), but the surviving balance forms the backbone of the Madagascar collections in France's Muséum National d'Histoire Naturelle (MNHN).

The earliest organized biological expedition to Madagascar was carried out by the Dutch collectors Francois Pollen (1842–1886) and Casparus van Dam (1827–1898), the former a wealthy merchant and naturalist, the latter a museum technician with a love of hunting. At the behest of Hermann Schlegel, Director of the Rijksmuseum van Natuurlijke Historie (RMNH, now Naturalis) in Leiden, the pair spent from November 1863 to July 1866 in Madagascar, making a pioneering collection of insects, fish, birds, and mammals in the island's northwest. Following his return to Holland, Pollen continued to finance RMNH collecting in Madagascar. Van Dam accordingly collected on the west coast in 1869 and 1870, followed between 1875 and 1882 by the German Josef Peter Audebert (1848–1933), working principally along the island's east coast. Although Audebert was a free agent for the final two years of his Madagascar sojourn, some of the specimens then collected also went to the RMNH, via dealers.

And then, there was the Englishman Alfred Crossley (1839–1877).

Crossley was an independent operator who collected in Madagascar periodically between 1869 and 1877, initially with funding from Christopher Ward, a wealthy entomologist living in his home city of Halifax in northern England's west Yorkshire. In the absence of inherited wealth or formal institutional sponsorship, Crossley was obliged to dispose of the bulk of his natural history collections through dealers, principally William Cutter and Edward Gerard in London, Gustav Adolph Frank in Amsterdam, and Gustav Schneider in Basel. This method of distribution accounts for the scattering of Crossley's surviving specimens (probably a modest proportion of the original total) among British and continental European natural history institutions, in dramatic contrast to the concentration in single museums (mainly the RMNH and the MNHN) of the collections obtained by his continental contemporaries. The Zoology Department of the British Museum (today, the London Natural History Museum [NHM]) does, however, seem to have had the first pick of Crossley's specimens, or at least of those that passed through his principal agent, Cutter. The intermediation of dealers seems to have been largely responsible for unfortunate gaps in the documentation of Crossley's collections since, as noted by Andriamialisoa and Langrand (in press), the collector himself seems to have rou-

tinely shipped field notes along with his collections. It appears that those notes often became separated from the specimens themselves or were passed along by the dealers to their clients only in summary, or not at all. In many cases, for example, the only locality information that survives is the province of collection, or the shipping point, or the name of the nearest large town, however distant from the nearest plausible place of collection.

The involvement of dealers does not, however, explain why we know so little about the man himself or about his collecting activities in Madagascar. This invisibility to posterity makes a striking contrast with his European counterparts. Grandidier wrote and spoke extensively about his own explorations and discoveries—see, for example, volume 1 of his great series (Grandidier 1885/92), Pierre Vérin's compilation based on an unpublished manuscript of 1916 (Vérin, n.d.), and the recent monograph by Faure et al. (2019). Pollen in his turn authored a long (and beautifully illustrated) account of his and Van Dam's Madagascar journey (Pollen, 1868), and collaborated with Schlegel on a masterly review of the mammals and birds collected (Schlegel and Pollen, 1868). And although identifying many of Audebert's collecting localities is still a challenge, partly because of his famously idiosyncratic transliterations of place names (see Carleton et al., 2014), the German collector not only wrote several articles about his adventures in Madagascar (e.g. Audebert, 1882a, 1988b, 1883: see Dahle, 1884 for issues of reliability), but remains something of a local hero in his hometown of Dillingen in the Saarland of southwestern Germany. Audebert has consequently been the subject of a couple of biographies (Handfest, 1967; Jost, 2012), and Carleton et al. (2014) have recently provided a thorough and thoughtful review of what is known of his collecting localities that gives us a greatly improved overview of his activities in Madagascar. All in all, it is evident that the subtitle of one of those Audebert biographies, "the forgotten Madagascar researcher," really belongs to Alfred Crossley, about whom, and about whose localities, "astonishingly little is known" (Carleton et al., 2014). That little has been neatly summarized by Andriamialisoa and Langrand (in press).

Limited documentation is, of course, fairly routine for 19th-century natural history collections. And, given the dispersal of his collections through multiple dealers, it is as unsurprising as it is probable that many of Crossley's specimens went into private hands and subsequently disappeared, leaving many of his activities unaccounted for by surviving material evidence. Indeed, it is distressing to consider how much may have been lost. What is truly astonishing, though, is how little notice anyone took of the man himself. The scientists who had the privilege of describing the many new species Crossley brought back to Europe wrote in terms suggesting his name was well known among members of the close-knit zoological community, but after the Halifax collector's death, virtually nobody in the scientific realm apparently thought it worth recalling his achievements or even reporting his passing. The British Museum ornithologist Richard Bowdler Sharpe (1879) had enthused in 1872 that Crossley's "investigations in the wonderful island of Madagascar will forever connect his name with the natural history of that part of the world;" but subsequent to the naturalist's demise, Sharpe's curt 1879 reference to "the late Mr Crossley" is the most extensive reference to him that I can find in the anglophone scientific literature of the late 1870s. I have not, for example, been able to locate in that literature any obituary or even a simple death notice.

What is more, beyond his mute specimens, Crossley left virtually no durable traces of his travels, apart from sparse Mauritian newspaper mentions and one immigration entry from that island (see below). A search of the surviving records from the period in the Madagascar National Archives, kindly conducted by M. Jean de Dieu Ratefinanahary, turned up no trace of him whatever. And although many of the 19th-century British missionaries in Madagascar were themselves accomplished naturalists, one combs the relevant archives of the London Missionary Society in vain for any mention of Crossley, who also fails to appear in the *Antananarivo Annual*, the missionaries' published record of mainly British comings and goings in Madagascar. Virtually nobody seems to have thought him worth taking any notice of personally, even as he was making a substantial contribution to science. Why?

Almost certainly, the reasons for Crossley's invisibility lay in a combination of his own personal reticence and the stultifying class system of 19th-century England. In the absence of any documentation about him, my first inclination had been to believe that he was likely a "black sheep" member of the illustrious Halifax carpet-manufacturing family headed by Sir Francis Crossley. This conclusion appeared to find support when I discovered that, while Alfred was in Madagascar in 1870, Sir Francis made a munificent gift of £20,000 in support of the London Missionary Society's work in the island. However, this supposition eventually proved to be wrong. There was evidently no close familial connection, and clearly nobody in Madagascar or Mauritius even suspected one at the time.

Crossley is not an uncommon Yorkshire name, and either of two Halifax birth certificates bearing the naturalist's name might be his. One bears the birth date of August 11, 1839; the other is dated March 14, 1842. Unlike the later certificate, the earlier one specifies no father; and, since Alfred Crossley's second wedding certificate (definitely his; his wife's identity is known and he identifies himself as a naturalist) also leaves glaringly blank his father's name and profession, the 1839 birth record is almost certainly the relevant one. It also agrees with the statement in his anonymously written obituary (see appendix 1) that Alfred Crossley died at 37 years of age. Curiously, though, the age of 33 that the naturalist declared to the Mauritius immigration authorities in June of 1874 (see also below) agrees better with the later birth certificate. The 1839 document gives Alfred's mother as Hannah Crossley and his grandfather as William Crossley, carpet weaver and occupant of a house on Savile Row in Halifax, an address that no longer exists. Alfred was evidently raised by his mother and her family in the modest neighborhood of Mount Pleasant, and all that is known of his early life comes from the recently unearthed obituary, reproduced here as appendix 1, which appeared in the *Halifax Courier* newspaper on Saturday, 16 June 1877 (Anon., 1877).

According to his obituarist, as a youth Alfred Crossley had been:

Possessed by a strong desire for the life of a sailor...and was duly apprenticed. In one of his voyages he was shipwrecked, and he and another sailor only escaped by taking to a small raft, on which they drifted on to Madagascar. Here they were detained for two years as prisoners, but not very hardly treated. In the end they managed to escape... and eventually got away.

By the standards of the time and place, the “detention” so tantalizingly summarized in this passage most likely involved enslavement rather than outright captivity. This would have offered Crossley and his companion a lowly degree of incorporation into local society that would have provided them with an opportunity to absorb Malagasy language and culture, and it is consistent with the obituarist’s observation that they were “not very hardly treated.” The Halifax sailors’ experience offers a strangely close parallel to that, a century earlier, of another shipwrecked English sailor, Robert Drury (1729). No exact dates are given for Crossley’s ordeal, but the time frame was likely within a year or two of 1860. Confirmation of his strange tale also exists in a shorter posthumous report that appeared in the *Leeds Mercury* newspaper of Saturday 16 June 1877, to the effect that:

Mr Crossley has passed a life of adventure, having part of his life become a seaman. On one occasion, in a shipwreck, he and a companion escaped on a raft to Madagascar.

It cannot be determined with any certainty whether the two press versions of Crossley’s early experiences are independent, or whether the shorter account was derived from the longer one, but they are certainly both supported by the fact that Christopher Ward, Crossley’s fellow Haligonian and initial sponsor, eventually recruited him to return to Madagascar to collect butterflies. What else besides prior Madagascar experience could have caused the entomologist to engage a young and only briefly educated sailor for this specialized task, in a place that few had even heard of?

One must, then, accept as accurate the tantalizingly sketchy obituary accounts of Crossley’s early adventures in Madagascar. And since those adventures almost certainly occurred during the reign of the notoriously xenophobic Queen Ranavelona I (who died in 1861), they presumably shared much of the drama of those of Robert Drury and the French sailor François Cauche (1651). Yet, while both of those earlier shipwreck survivors published successful books about their Madagascar experiences and duly took their cameo places in history, Crossley wrote nothing and, indeed, his story seems to have gone entirely unreported by anybody at the time. It would have been a rattling good tale for any journalist to tell, so how could it have been so totally neglected, especially since the protagonist was from a country with such a vigorous local press? And how, indeed, could Crossley have traveled so widely for several years without apparently attracting any popular or official attention?

As already hinted, it seems very likely that Crossley’s inconspicuousness in both respects was due to a powerful combination of personal characteristics and social origin, and possibly also to political circumstances in a time of mutual suspicion and occasional conflict between the Malagasy monarchy and the European powers that coveted the island. On the former front, the *Halifax Courier* obituarist reported that “Only now and again, and under favourable conditions, could [Alfred Crossley] be drawn out to speak of his travels.” Evidently the very antithesis of the self-promoting Cauche and Drury, Crossley seems to have been extremely reserved, and hugely reluctant to talk about himself. Taken together with his low social status, those personal traits might explain, for example, why he apparently attracted

no attention whatever in the British colony of Mauritius, where every visitor from Europe with any profile at all was the subject of intense curiosity. Mauritius was the major transfer point for Europeans visiting the nearby Madagascar, and we know that Crossley debarked there at least twice (April 1874 and June 1875, see below), although the island was likely his jumping-off point on all his early Madagascar journeys (La Réunion, then lacking a sheltered harbor, being the only alternative). On the face of it, Crossley should have been a particular focus of interest in Mauritius because his visits fell within the tenure as the island's Colonial Secretary of the avocational ornithologist (and fellow Madagascar traveler) Edward Newton. Newton was the younger brother of the prominent Cambridge ornithologist Alfred Newton, for whom Crossley collected (see below), and he was a leading light in the Mauritius Institute, the island's premier scientific organization of that period. Yet, as well known to Indian Ocean ornithologists as Crossley's work doubtless already was, there is no surviving record of any kind that he ever attended a meeting at the institute.

The only plausible explanation for this invisibility is that, as an illegitimate and penniless working-class youth from the provinces, Crossley had no formal social presence on the colonial scene and lacked the standing to mingle with the island's luminaries. In synergy with his reluctance to draw attention to himself, that social wall would explain Crossley's inconspicuousness. This scenario fits well with his obituarist's heartfelt testament to his lack of ego: "there was a singular absence of forwardness, not to mention swagger, in his manners." And finally, quite unlike Pollen or Grandidier, Crossley was evidently under no illusion that he was doing what he did for the sake of science. He was doing it simply to make a living, under evidently stressful economic circumstances.

CROSSLEY'S MADAGASCAR ITINERARIES

The first source one turns to for information on Crossley's itineraries in Madagascar is volume 1 (*Histoire de la géographie*) of Alfred Grandidier's *Histoire physique, naturelle, et politique de Madagascar* (Grandidier, 1885/92). In his extensive listing of early travels in Madagascar, Grandidier gives the following for Crossley:

- 1869 Vohémar to Antalaha to Angontsy (near Ambohitralana), thence west over the Masoala peninsula to Maroantsetra, and up and down the Antainambalana River.
Then, from Fénériver (Fenoarivo) or Mahambo or Foulpointe (Mahavelona), via Tamatave (Toamasina) and Ambatondrazaka, to "pays d'Antsihanaka" (around Lake Alaotra).
- 1870 Antsihanaka to "pays d'Imerina" (around Antananarivo).
- 1871 Maroantsetra to Mandritsara, thence to Antsihanaka.
- 1872 Tamatave south to Mahanoro and Masindrano (Mananjary), then inland to Ambohimga Atsimo and Ivohitrambo (Ambohimombo).
Then, Ankavandra to Majunga (Mahajanga), via Manerinerina.

These itineraries are clearly incomplete (there is no note, for example, of the 1869 journey south from the Baie d'Antongil, despite evidence that the English naturalist collected en route), and

they make Crossley's travels seem curiously disjointed. However, Grandidier's destination lists are supported by other sources as far as they go, and there is, indeed, strong presumptive evidence that the two men were personally acquainted and readily able to exchange information. Grandidier's linguistic talents would have helped: on July 29, 1870, the Tamatave correspondent of the Mauritian broadsheet *Overland Commercial Gazette* (OCG) noted—perhaps even with Crossley's probable Yorkshire brogue in mind—that “Mr Grandidier...speaks English better than many natives of England.”

During July of 1870 Grandidier was in Tamatave, awaiting what would be his final departure from Madagascar. He had been planning to go to the French island of La Réunion, but the Franco-Prussian war intervened, and according to the OCG he eventually departed northward on July 26 aboard the *Indre*, a French naval vessel. He presumably returned to the *métropole* via the newly opened Suez Canal. At some point before Grandidier's departure, Crossley had evidently gone missing: on May 28 the OCG Tamatave correspondent remarked in passing that “What [the British Consul] intends to do about the one British subject who is dead [Mr Bennie, a Scottish planter who had died of disease], and another (Mr Crossley) who is missing...I do not know.” Almost a month later, Crossley was still incommunicado: on June 21 the correspondent noted that “Nothing has been heard yet of the missing English natural history collector Crossley, tho' he may turn up safe after all,” a prediction that was borne out on July 16 when the OCG reported that “among the intending passengers [on an unspecified conveyance for an unspecified destination] is Mr Crossley, the natural history collector.” It is not clear exactly where Crossley was at the time, and the story became murkier on August 5 when the OCG correspondent chronicled the arrival in Tamatave from Mauritius, aboard the German brig *I.G. Fitch*, of “an Englishman said to be a natural history collector.” However, the *Fitch* reference was very likely to Crossley's fellow natural history collector Thomas Waters, who would go on to work in Madagascar for several years. In which case, Crossley might well have been in Tamatave on July 16 and, if so, he would have overlapped there with Grandidier by more than a week.

It is, moreover, clear that at this point the two naturalists had already met, because in February 1870 Grandidier had named the dwarf lemur species *Chirogalus crossleyi* for its discoverer/collector (Grandidier, 1870). The description of the new species was included in a brief note titled “Description de quelques animaux nouveaux découverts à Madagascar en Novembre 1869” (Grandidier, 1870) and the author noted that the holotype was from “forêts est d'Antsianak” where Crossley was actively collecting during the month in question. Antsihanaka (Grandidier's “Antsianak”) was a term often used to refer to the rainforest region east of the territories of the Sihanaka tribe around Lake Alaotra. This tribal region was connected to the east coast by a regional transport path terminating south of Tamatave (see below). Grandidier had himself collected in the central-eastern region, but no closer to Lake Alaotra than Beforona, some distance to the south of the lake. For Grandidier to have acquired his dwarf lemur specimen (and others) from Crossley, the two naturalists must almost certainly have encountered each other in person, necessarily at some time between November 1869 and February 1870 (probably earlier in that period rather than later, given the time needed to write and send

the article to press in Paris). Where the meeting took place is problematic (though see below), but evidently some kind of communication continued after Grandidier's 1870 departure, because he included the years 1871 and 1872 in his list of Crossley journeys. At some time after that, however, direct contact seems to have been lost; 30 July 1875 saw Grandidier writing to the British Museum ornithologist Richard Bowdler Sharpe to inquire if he had received any news of Crossley.

Back in May of 1870, the OCG Tamatave correspondent had declared that:

Tho' there are many foreign residents in Madagascar, natives of Mauritius, Réunion, and France, the number of persons residing here natives of the United Kingdom is (always excepting Missionaries, who are mostly at the capital), extremely limited and the arrival of any "Britishborn" is so rare that I always record it, and believing as I do that the permanent residence here of intelligent and respectable natives of the United Kingdom is conducive to the well being of the country I am always glad to record it.

These anglophile sentiments make it very odd that the correspondent should have been so uninterested in Crossley, even as he fawned at length over the wealthy French Grandidier. Once again, one finds oneself forced to the conclusion that Crossley was simply the wrong kind of "Britishborn."

The only other sources of information about Crossley's itineraries are the (frequently obscure) recorded localities of the specimens he collected and the comments of the scientists who described his specimens (there is grievously little archival material). A summary of what is known appears in appendix 2. Among contemporary published observations the most informative are those of the British Museum's Richard Bowdler Sharpe, who periodically reported to the Zoological Society of London (ZSL) on ornithological accessions received from Crossley at the NHM. On June 9 1870 Sharpe confirmed that Crossley's initial journey to Madagascar had been financed by Christopher Ward and that his first specimens had been dispersed through the Great Russell Street dealer William Cutter (Sharpe, 1870). Further, he gave an outline of Crossley's 1869 itinerary, as follows:

Mr Cutter informs me that Mr Crossley first made a trip into the province of Vohima, in the northern corner of the island.... Afterwards returning to Tamatave, he proceeded inland to Antananarivo and thence northwards to Nossi Vol, which, he informs me, is to the south-east of Lake Alaotra [sic]. Here, and at Saralalan, a place about seven or eight miles to the east of Nossi Vol, most of the birds were collected.

Sharpe's idea of Madagascar's geography was clearly a little hazy; but his account does confirm Grandidier's statement that the starting point of Crossley's 1869 journey was Vohémar (Vohémar), the most northerly administrative center along Madagascar's east coast (see fig. 1 for Vohémar and other sites mentioned in text), in which region Sharpe noted ornithological pickings were slim. In seeking to establish the source of Crossley's type material of the montane forest rodent *Nesomys rufus*, described in 1870 by Wilhelm Peters from "Vohima" material supplied by Edward Gerrard, Jr., Carleton et al. (2014) pointed to Sharpe's allusion in the

extract just quoted not to the town, but to the “province of Vohima.” The coastal region around Vohémar would have been an unexpected habitat for this mammal, so these authors suggested that Crossley’s collecting locality of “Vohima” applied more broadly to the local region, and redefined the term as “former province of Vohima, Northern Highlands, mountains surrounding Andapa.” This is clearly correct as far as it goes, because the NHM and RMNH both contain Crossley specimens of the lemur *Propithecus diadema candidus* (obtained via Cutter and Frank, respectively) that could have been collected only in the mountains around Andapa. Confusingly, that upland town was, and is, accessed not from Vohémar, but from the port of Sambava (fig. 1), which lies farther south along the coast—and indeed, the MHN *P. d. candidus* specimen is labeled “Sambavy,” possibly indicating the shipping point. However, Crossley also collected examples of *Eulemur coronatus* at “Vohima,” indicating that this locality name also covered the lower and drier crowned lemur territories that lay farther northeast within the former Vohima province. Still, it remains plausible that, as Carleton et al. (2014) suggest, Crossley “curtailed his collecting along his direct Vohémar-Antalaha route, due to unproductive results,” for the coastal plain was almost certainly unpromising territory for the collection of the novelties for which collectors would pay.

Accordingly, it is very likely that Crossley started his 1869 collecting in the area around Vohémar, but then quickly proceeded down the coast to Sambava. At that point he diverted southwest to Andapa, or at least to the area now designated as the Marojejy National Park, before retracing his steps to the coast. Following this excursion, which would have taken some time, he hastened south along the coast to Antalaha and beyond, pausing at the Angontsy islet that lies close to today’s Ambohitralana. From the latter settlement a porter path proceeded inland up the valley of the Onivé river and across the mountainous and densely forested Masoala peninsula, to the town of Maroantsetra at the head of the Bay of Antongil. Grandidier reports that the naturalist then made a trip up and down the navigable portion of the adjacent Antainambalana River, as corroborated by his collection en route of specimens of *Eulemur fulvus albifrons* (NHM) and *Varecia variegata* (NHM and RMNH), at localities designated as “Maranzettra” and “Maransettra River,” respectively.

Crossley then proceeded from Maroantsetra, either on foot or by very small boat, to Mananara village at the entrance to the Antongil bay, where he collected butterflies for Ward (see below). Thence he continued southward along the coast to Tamatave, via the three coastal villages of Fénérive Est, Mahambo, and Foulepointe that lie along the coast immediately to the north of the major port. From Tamatave, there were two possibilities for Crossley’s route inland to what Grandidier called the “forêt est d’Antsianak.” The first was the well-trodden porter path to Antananarivo. That route initially ran south, parallel to the coast and through degraded countryside, to Andovoranto. It then followed the Iharoka River as far inland as it was navigable, and subsequently followed a tortuous footpath westward up the rugged escarpment to today’s Moramanga and beyond. If this is the trail Crossley took, he would have diverged from it at Moramanga, heading due north up the Ankey plain to Ambatondrazaka, at the southern end of Lake Alaotra, Madagascar’s largest body of fresh water. From there, it was a short jaunt northeast to his Antsihanaka collecting area. Alternatively, Crossley might have headed south



from Tamatave no farther than the Ivondro River, at which point he could have followed the river valley inland and up to the village of Fito, eventually emerging on to the Ankey plain near Didy, just to the south of his Antsihanaka sites. While logistically simpler, this latter itinerary fits a little uneasily with Sharpe's rather confused account, and Crossley does not appear on Grandidier's short list of early travelers along this route. Either way, it was clearly on his way to Antsihanaka from the east coast that Crossley collected specimens of *Eulemur rubriventer* that went to the RMNH, via Frank. These bear only the locality of "Betsimisarakana," which is unhelpful except to the extent that it excludes "Antsihanaka" (both names denote extensive tribal areas).

The region to the immediate southeast of Lake Alaotra included the major Antsihanaka collecting localities known to Crossley as Nosy Vola and Saralalan, the latter lying, according to Sharpe, some seven or eight miles to the east of Nosy Vola. Schwarz (1931) opined that Nossi Vola [sic] lay to the east of the Bay of Antongil (i.e., on the Masoala Peninsula); and Powzyk and Thalmann (2003) incorrectly reported that Peters (1872) had likewise placed both Saralalan and Nosy Vola (at one of which Crossley also collected the type specimen of *Lichanotus mitratus*, a synonym of *Indri indri*) on the Masoala. However, given what we know of the distribution of *Indri* this cannot be the case; and Goodman et al. (2006) are very likely correct in identifying Nosy Vola with today's Nosivola, "located to the east of Lake Alaotra and on the road between Ambatondrazaka and Manakambahiny-Est," the latter a village lying just south of the Zahamena Reserve. As for Saralalan, Chris Raxworthy (in litt.) suggests that Tsaralalana (a common Malagasy term meaning "good road") may have been an old name for Manakambahiny-Est itself. All this would place Nosy Vola and Saralalan a bit farther apart than Sharpe suggested, but the two localities were clearly within a day's walk of each other, and there can be little question that Andriamialisoa and Langrand (in press) were right to place Crossley's Antsihanaka sites "in close vicinity of the Zahamena protected area of today." Crossley collected at Nosy Vola in October 1869 and at both Saralalan and Nossi Vola during the following month; and it was somewhere in this region, in November, that he collected the holotype of Grandidier's *Chirogalus crossleyi* (and, for the record, that of Forsyth Major's later *Cheirogale melanotis*). How long Crossley had been in Madagascar at that point is hard to estimate, but he had already visited the northern part of the east coast very extensively and it is hard to imagine he could have left England any later than the early spring of 1869.



FIG. 1. Outline map of Madagascar, to show localities visited by Alfred Crossley. Major towns are capitalized; Fianarantsoa was not reached as far as is known, although some Crossley specimens bear the locality "Fienerentova" (see text). The localities recorded as "Maranzettra" and "Maransettra River" lie up the Antainambalana River from the town of Maroantsetra. Saralalan (not shown) lay a few miles east of Nosy Vola. The "Kinkimauro," "Chepipp," and "Voolaly" localities almost certainly lay in the vicinity of Kianjavato, and "Chiden-Chiden" was likely on the Mananjary River just west of Mananjary town. Manerinerina is an approximation of an extensive area of forest, and it is just possible the term may also have applied to a village southeast of Mahajanga. Vangaindrano may or may not have been visited (it is suggested only by a single specimen). In Crossley's time there were no roads in Madagascar, centers of population being connected by river and/or by footpaths, along which heavy burdens and wealthy travelers might be transported by *filanzana* (palanquin).

As early as December 1869, *The Entomologists' Monthly Magazine* (EMM) reported that "Mr Cutter exhibited insects on behalf of Mr Ward." These were presumably the butterflies that Crossley's sponsor Christopher Ward described in the same journal in February of the next year (Ward, 1870a), referring to him as "my collector in Madagascar." During the 1860s it was beginning to dawn on many zoologists that broad geographic designations such as "Madagascar" or "Angola" were insufficient if specimens were to be scientifically useful and that exact localities were required. Sharpe was among those foresighted scientists, but Ward sadly was not, and he named four new butterfly species without giving any locality information. However, the names he gave those species not only imply that Crossley did indeed furnish locality information with the specimens, but are suggestive in themselves: *manan-hari*, *vohemara*, *nossima*, and *anteva*. In particular, the first of them (referring to the coastal village of Mananara at the entrance to the Baie d'Antongil confirms that during his 1869 travels Crossley had indeed proceeded overland down the coast from Maroantsetra to Foulpointe and Tamatave (or, if he went by water, had used local canoes rather than taking passage aboard a larger trading vessel).

In the July issue of EMM, Ward (1870b) described several other new butterfly species "lately received" from Crossley. Again, no localities were given, but once more the species names (*antsianaka*, *rakoto*, *ankaratra*, *vola*, *iboina*, *avelona*) imply that the collector had recorded their localities and sent them to his sponsor. The first of those names reflects the familiar Antsihanaka territory, while *ankaratra* provides evidence in support of Grandidier's contention that in 1870 Crossley proceeded from Antsihanaka to the Imerina province around Antananarivo (the Ankaratra volcanic range at the province's southern limit lies little more than 50 km from the capital; see also below). The name *iboina* (for the then fairly recently annexed northwestern Boina kingdom that had been administered from Majunga) additionally suggests that Crossley continued northwest from Antananarivo for some considerable distance. This is another itinerary that Grandidier did not note, but it might find support in Sharpe's (1870) observation that at some point Crossley collected a magpie-robin (*Copsychus albospecularis*) at "Vodirat, 25 miles N.W. of Antananarivo." This locality likely lay on the main porter path to the northwest along the Ikopa valley, somewhere around the missionary station of Fihaonana. During the 1870s Fihaonana was a two-day journey from Antananarivo (Sibree, 1915); and it could thus have been reached in a quick side trip from the capital, rather than passed by during a longer trek to the far northwest (closer to Iboina territory). Either option seems possible; Ward's species name is the only reason for thinking Crossley went beyond Fihaonana, but he was evidently not back on the east coast before July—and the March-July 1870 interval, of course, embraces the mysterious period during which he "went missing." The obituarist's observations may be relevant in this context:

Mr Crossley would disappear in the romantic and most beautiful wilds of the island for weeks, sometimes months, with native servants...patiently gathering up the living creatures he sought for, and being skilled in the work, properly curing and packing them.

Crossley's "going missing" in May-June 1870, as reported by the OCG correspondent, is entirely compatible with his habit of "disappear[ing] in the most romantic and beautiful wilds." Where he actually went, of course, is entirely a matter for speculation.

As early as April 18, 1871, while reviewing Cutter's portion of Crossley's 1870 Madagascar bird collection, Sharpe reported to the ZSL that "Mr Crossley...has lately returned to England" (Sharpe, 1871). He also added some detail to Grandidier's sparse report that in 1870 the naturalist had gone from "l'Antsihanaka au pays d'Imerina," although he began by lamenting of one bird species that the collector

has not attached any label of the exact locality to these specimens. They were a few which he brought with him in his personal baggage, as the greater part of his collection was so unfortunate as just to reach Paris as the investment of the city was completed, and the cases were shut up during the whole of the siege" [which began on 19 September 1870, and ended on 28 January 1871].

Still, some at least of the impounded specimens had the advantage of retaining their labels, which confirm that Crossley had still been collecting in Saralalan and Nosy Vola on January 28 and February 1, 1870, respectively. This strongly suggests that he had been in the "forêts est d'Antsihanaka" consistently since October of 1869; and he must therefore have furnished Grandidier with the holotype of *Chirogalus crossleyi* somewhere in that vicinity, possibly at Ambatondrazaka. It is recorded that Grandidier traversed the island from west to east three times during his last visit from mid-1869 to mid-1870 (Faure et al., 2019), and he might easily have passed through the Antsihanaka region during his final return to Tamatave, although he does not record that itinerary in his own journey lists.

In his presentation to the ZSL, Sharpe additionally lifted the curtain a little on Crossley's field techniques, remarking that the naturalist "told me that [*Mystacornis crossleyi*, Crossley's vanga] ran along the ground in thick forest, and were shot for him by natives with blow-pipes." Sibree (1915) describes the traditional Malagasy use of blowpipes (*tsirika*), and Crossley's "going native" in his collecting methods may have reflected an intimacy with local ways of doing things that derived from his early Madagascar experience, which would have served him well in numerous contexts. The naturalist clearly also provided Sharpe with abundant circumstantial information on the specimens he collected, quite probably in person; no correspondence has yet been located. That information included behavioral observations and details of ephemeral characteristics such as eye and bill colors and stomach contents. The strong implication is that Crossley indeed kept careful records on each specimen collected, presumably in field journals that have not survived.

According to Grandidier, Crossley was back in Madagascar in 1871, likely early in the year. Starting in Maroantsetra, he would have gone south down the coast to Mananara before turning inland and following the Fahambahy river valley up the escarpment toward Mandritsara, at about 1000 meters altitude. In that vicinity, he may have passed through, or close by, what is now the Marotondrano Special Reserve. He then continued south to Lake Alaotra and Antsihanaka. That was the remote and difficult way to reach his Antsihanaka stamping grounds; but

it would have taken him though some pristine forests that contrasted greatly with the degraded environments he was to face along the coast south of Tamatave the following year. In 1872 the NHM acquired from Frank a *Lepilemur* specimen (the holotype of J.E. Gray's 1872 *Lepilemur pallicauda*). Labeled as from Morondava, it was presumably collected in 1871 and is the only independent evidence I know of that Crossley subsequently went from Antsihanaka to Morondava in that time frame. How and when Crossley's 1871 foray in Madagascar ended is not recorded, but it seems likely that he spent the early fall of 1871 in England.

Whenever it was that he arrived back in England, he did not tarry there long. Late in 1872 Sharpe reported to the ZSL that Crossley had already been obtaining more *Mystacornis* specimens as early as February of that year and at the time of his presentation to the ZSL; 10 months later, the naturalist was "still continu[ing] his labours in the island." Crossley's reported bird localities for early 1872 included Voolaly, Kinkimauro, Chiden-Chiden, Chepipp, and the "country to the west of Mananzara," all of which were likely or certainly visited in February of 1872. Chiden-Chiden (which Crossley had already recorded as the name used by the locals at Nosy Vola for the Mascarene martin *Phedina borbonica*) was probably the first of those localities to be collected. On February 3 it produced a Madagascar palm swift (*Cypsiurus gracilis*), a species that frequents secondary vegetation in lowland areas. It therefore seems plausible to place this locality, possibly named for one of its denizens, somewhere along the lower reaches of the Mananjary River, not too far from the coast and the eponymous town. Thence Crossley evidently moved swiftly inland: within the month, at Kinkimauro, Chepipp, and Voolaly, respectively, he collected a Pollen's vanga (*Xenopirostris pollenii*), a Madagascar flufftail (*Sarothrura insularis*), and a white-throated oxylabes (*Oxylabes madagascariensis*), all typically if not invariably inhabitants of relatively intact moist lowland forest. There are no exact collection dates, but it seems reasonable to surmise that all three localities lay close together and low on the eastern escarpment, most likely in the general area of today's Kianjavato. This village lies above the valley of the Mananjary River at an altitude of around 200 meters, and some 50 kilometers inland as the crow flies; forest of appropriate aspect still survives in its vicinity. The "country west of Manazara" designation could indicate anywhere between the two collecting areas just mentioned, since this locality produced a specimen of Frances's sparrowhawk (*Accipiter francesiae*), a species that is found along forest edges as well as in plantations and secondary formations.

February of 1872 was evidently a busy month for Crossley, and one regrets that we do not currently know the exact timing of his collecting activities farther up the escarpment (see below). As far as can be ascertained, though, the naturalist seems typically to have done his collecting in bouts, with long and currently unaccounted-for gaps in between them. This pattern might be explained at least partly by Sharpe's (1872) discouraging remark that "the present consignment comes from the country to the south-east of Antananarivo... [where] ...unfortunately the barren and inhospitable nature of the country has seriously interfered with Mr Crossley's arrangements." My colleague Steve Goodman (in litt.) points out that it is unclear here whether "inhospitable" refers to environmental degradation or to hostile political circumstances, but in either case similar conditions might well have applied during many of his other

explorations as well. Apparent gaps in Crossley's itineraries might also, of course, have been due to the subsequent loss of specimens that went to private collectors.

Sharpe's account confirms Grandidier's assertion that in 1872 Crossley traveled south from Tamatave along the coast to Mahanoro and Masindrano (the modern Mananjary, known to Crossley as "Mananzara"). Additionally, in the RMNH there is a female *Eulemur fulvus collaris* (a cotype of Gray's *Prosimia melanocephala*) that was acquired from Crossley, via Frank, and catalogued in 1875. It can only have been collected during the 1872 journey and (unless, perhaps, it derived from a captive individual that had been taken north) it offers presumptive evidence that Crossley did a jaunt south to the Mananara River valley beyond Vangaindrano (fig. 1), before doubling back to Mananjary town. Either way, he then followed the valley of the Mananjary River inland and up the escarpment, via Kianjavato, to Ambohimanga Atsimo and eventually to Ivohitrambo. This last locality was almost certainly today's Ambohimombo, which lies at an altitude of about 1300 meters and is clearly where Crossley collected specimens of *Propithecus diadema edwardsi* that are now in the NHM and RMNH. Despite the long distance between Ivohitrambo and the coast, the specimen that went to the RMNH (via Frank) bears the locality "Mananzare," presumably the port from which it was shipped. From Ivohitrambo, Crossley could readily have joined the major porter path connecting the regional and national capitals of Fianarantsoa and Antananarivo, probably at or near Nandihizana, the only known source of individuals assigned to *Propithecus holomelas* (a melanistic variant of *P. d. edwardsi*, a lemur also collected there: Günther 1975a). Nandihizana was almost certainly the collecting locality of all the NHM Crossley lemurs labeled "Fienerentova"—oddly, since, at some 15 km north of Ambohimaso, the site lay a considerable distance from Fianarantsoa town (see Tattersall, 1986a).

As reported by Grandidier, the final stage of Crossley's epic 1872 journey ran from Ankavandra to Mahajanga, via Manerinerina. This second itinerary, in a region far distant from the first, would have required Crossley to proceed from Nandihizana to Antananarivo, where he presumably recuperated before heading westward, probably via Tsiroanomandidy, to Ankavandra. The only lemur specimen that testifies to this journey is an individual of *Propithecus verreauxi deckeni*, labeled as from Ankavandra, which went to the RMNH via Frank. From Ankavandra, Crossley evidently traveled northeast toward what was then known as the "Manerinerina Forest" (Sibree, 1915), whence he could have followed the Mahavavy valley to Mahajanga (or conceivably, as Chris Raxworthy [in litt.] suggests, he might have traveled to the village of Manerinerina farther east, close both to the Ankarafantsika forest and to the main path between Antananarivo and Mahajanga). From Mahajanga it is probable, though not definite, that Crossley returned to the UK; it was at around this time that the British India Steam Navigation Company added a stop at Mahajanga to its Aden-Mozambique itinerary. I am unaware of any specimens documenting this 1872 itinerary beyond Ankavandra, though more clearly needs to be done in this respect.

After 1872 we hear no more from Grandidier about Crossley's travels, and Sharpe did not report further to the ZSL on his activities until 1875 (Sharpe, 1875). However, a newspaper's passenger list (*Le Progrès Colonial*, 13 April 1874) has Crossley arriving in Mauritius from

Marseille on April 10, 1874, aboard the Messageries Maritimes steamer *Godavery*. As already noted, nothing is known about the collector's sojourn in Mauritius (and there is no record of his departure therefrom), but he was presumably in Madagascar by the beginning of May 1874. As for his subsequent travels, Sharpe (1875) reported to the ZSL on February 1, 1875, that bird specimens collected in 1874 had likely been obtained "between Antananarivo and Morondava, for which place ['my old correspondent'] Mr Crossley was making when we last heard of him." At the same time, he complained that

at present we are unable to state precisely where these collections of Mr Crossley have been made; for the letter which usually accompanies his consignments...has miscarried, and all the clue I can find to his whereabouts is the name "Ampasmonhavo" on the tickets of some of his birds.

Sharpe thus reaffirms that Crossley was in the habit of carefully documenting his specimens, at least by the standards of the time. But it is doubtful that Ampasmonhavo lay between Antananarivo and Morondava, because it is given as provenance for the holotype of the rufous-headed ground roller, *Atelornis crossleyi*. This bird is characteristic of the eastern humid forests at low to medium altitudes, which makes Crossley's specimen most likely collected somewhere on the eastern escarpment during the initial segment of his journey. Andriamialisoa and Langrand (in press) equate Ampasmonhavo with Ampasimaneva, although the latter is a village sited on the east coast far south of any reasonable itinerary between Tamatave and Antananarivo.

In the same issue of the ZSL's *Proceedings*, Sharpe's British Museum colleague Albert Günther confirmed the itinerary given by Sharpe when he described various mammal specimens collected by Crossley "on his way from Tamantave to Murundava" (Günther, 1875b). Since those mammals included a juvenile *Lichanotus mitratus* (*Indri indri*) and the holotype of *Cheirogaleus* (= *Allocebus*) *trichotis*, both eastern rainforest species, they, too, must have been collected somewhere on the heavily forested eastern escarpment. Beyond Sharpe's and Günther's assertions, there is no current supporting evidence that Crossley actually traveled west of Antananarivo on this occasion.

Crossley's 1874–1875 sojourn in Madagascar lasted about a year, as we know from published passenger lists (*Le Cernéen*, *La Sentinelle de Maurice*, June 22, 1875) and immigration records that show Crossley arriving back in Mauritius from Tamatave on June 20 1875, aboard the bullocker *Touareg*. In this connection, it is perhaps worth quoting the missionary James Sibree (1915, writing of 1863):

In those days there was no service of steamers...touching at any Madagascar port, and the passage from Mauritius had to be made in what were termed "bullockers"... [which were] ...small brigs or schooners which had been condemned for ordinary traffic, but were still considered good enough to convey from two to three hundred oxen from Tamatave to Port Louis or Réunion.

Crossley was accompanied by 269 head of cattle on his doubtless uncomfortable trip; and his age was declared to the immigration authorities as thirty-three. Again, there are no further

details available of his stay in Mauritius, but we know he quickly departed for England (possibly on the steamer *Bury St Edmunds*, which left Port Louis for London on July 1, 1875), because on August 3 of that year he was already writing to Alfred Newton from an address in the modest Mount Tabor neighborhood of Halifax. He was acknowledging receipt of a check, presumably in payment for specimens. An undated letter from the same address to Sharpe (whom he addressed as “Dr Sharp” [sic]), confirming receipt of his publications, was probably sent at around the same time.

We know nothing of Alfred Crossley’s life in Halifax, but his obituarist recalls that his first wife Sarah had died at some point; and on 24 February, 1876, he was remarried to Rebecca Dennis in the unassuming New Connexion Methodist Hanover-Street Chapel (significantly, not in the grandiose Park Congregational Church that had been built by Sir Francis Crossley in 1867). This new attachment apparently did nothing to quell Crossley’s wanderlust, or perhaps the naturalist was experiencing economic duress, for on March 22, 1876, barely a month after his wedding, he was already writing to Sharpe (“Dear Friend,” this time) from 21 Penn Street, Pelton Lane, Halifax, to tell him that he was “thinking to make another start,” and asking his opinion of the relative merits of the Philippines, the East African lakes, and Madagascar. What Sharpe replied is unrecorded, but, as we know from Crossley’s obituary, a scant four months after the marriage he returned to Madagascar under “circumstances seeming favourable.”

ALFRED CROSSLEY’S FINAL JOURNEY

Almost nothing is known about Crossley’s experiences in Madagascar after his arrival there at some time in August 1876, beyond the anonymous obituarist’s observation that “somehow, things did not go well.” What happened following his return is necessarily speculative, and any reconstruction of events must lean heavily on a hugely defamatory letter that Audebert wrote to Pollen from Sambava in January of 1878, in which he informed his sponsor of his rival’s death the previous year. This letter, preserved in the archives of the RMNH, is the only personal account of Crossley that we have apart from the obituary. It is written in rather crude French (see appendix 3), and the brief relevant sentences are given below, in loose translation. Audebert describes Crossley as:

Badly behaved, but I gave him money anyway, despite the bad results. When he arrived he wanted to do everything, and he did nothing. He even hijacked my men and took the specimens they had procured for me. Nasty person.

This is certainly not the obituarist’s Crossley, although the words are characteristic of their author. But the letter does confirm that the two collectors had met directly, and both its tone and its content suggest a rather disturbing—although entirely speculative—scenario for Crossley’s final months.

Audebert first arrived in Madagascar at the beginning of September 1875, approximately two and a half months after Crossley had left for the UK. The two collectors could thus have met only during Crossley’s final Madagascar visit, which began at some time in August 1876, a scant six

months before the latter's death on February 28, 1877. By that time Crossley was hugely experienced in Madagascar and had become accustomed to working with a team of loyal field assistants whom he had trained over the years and to whom his obituarist specifically referred. He had evidently mastered the political and logistical ropes of working in the island, and he had developed effective and efficient field techniques that produced beautiful specimens (Sharpe [1871] once noted that "All the specimens sent by Mr Crossley were in fine condition, the plumage being especially bright and glossy"). Everything should, then, have gone as smoothly in 1876 as he had evidently hoped (those "favourable conditions" noted by the obituarist), although, as Steve Goodman (in litt.) points out, in Madagascar this was a time of considerable political turbulence and resentment of the Christianizing efforts of foreigners. However, most of the unrest was on the plateau, and in available reports the OCG correspondent does not note any developments at Tamatave that would obviously have affected Crossley's activities locally. Yet the obituarist refers to "several mishaps" that evidently doomed his 1876 expedition from the start. What could they have been? On the face of it, potential political difficulties aside, there were only two new and unexpected hurdles for him to surmount: the smallpox epidemic that hit Tamatave in April of 1876 and was soon raging throughout the island (Crossley himself was likely vaccinated); and the presence of Josef Peter Audebert, the vehemence of whose letter to Pollen is hard to understand in the absence of extreme personal animus.

When Crossley returned to Tamatave in August 1876, Audebert had been in Madagascar for a year, having evidently got off to a fast start: his collecting activities began as early as October 1875, to the north of the port city around Foulpointe and Fenoarivo (Carleton et al., 2014). At the time of Crossley's arrival Audebert was either back in Tamatave or more likely had already moved north to Mananara (Carleton et al. 2014). One plausible reason for Audebert's quick start—and indeed, the only obvious reason why the two collectors should ever have met—was that Audebert had learned that the experienced Malagasy field collectors who had worked for Crossley were currently unemployed, and had taken advantage of the opportunity to recruit them. When Crossley arrived back in Tamatave in his turn, he would have discovered that the field crew he had trained and with whom he had worked for years, was unavailable. This would have been a considerable setback, the first of the "several mishaps" that his obituary records befell him; and he might well have felt it necessary to track Audebert down (probably in Mananara) and confront him, giving rise to the "hijack" incident. The wording of Audebert's letter to Pollen suggests that Crossley might even have succeeded in his quest to recover his team (temperamentally, he was probably a much more agreeable boss than the famously irascible Audebert); if that was the case, the latter's resentment would have been profound. On a more general level, it is also plausible that the younger German might have felt threatened by the reputation of the vastly more experienced English collector, who had already sold many specimens, via Gustav Frank, to his own employer, Hermann Schlegel. Putting all this together, it seems at least a possibility that the relatively well-funded Audebert was also in some way responsible for the rest of Crossley's mishaps—and maybe worse. Chris Raxworthy (in litt.) suggests a kinder version of events in which Audebert paid Crossley to collect, and became annoyed when the latter fell ill and was unable to deliver. But that would not explain why the

two collectors should ever have met in the first place; it was clearly not Crossley's habit to collaborate, and he certainly did not seek out the company of two other British collectors, Waters and Plant, who were also active in Madagascar during his time there.

We have no documentation of what transpired following the incident Audebert describes in his letter, and no very precise idea of when the confrontation happened. All we know is that, within a few months, Crossley was dead. We have the date of his death from multiple sources: February 28, 1877. But the place is not known for certain, and where he was buried remains obscure. A brief newspaper death notice records that he died in Antananarivo, but "Tamatave" appears, altogether more plausibly, on a probate record (which poignantly put the value of Crossley's entire estate at "under £200"). Still, wherever the sad scene painted by Crossley's anonymous obituarist unfolded, it is heartbreaking:

he was stricken down with sickness—an inflammation; this was in February; he could not, because of weakness, write all he had to say to his wife, and a friendly hand wrote part of it. No further communication was received from him as the weeks went away.... On Wednesday [June 13, 1877], however, a telegram of but a few words told that he was dead—how, where, when, is not known.

Interestingly, while scientific interest in Crossley as a person seems to have been close to zero (scientists in those days were, after all, gentlemen), notice of his passing was not confined to the local Halifax press. A search has turned up some 20 brief obituaries that appeared between June 16 and 30, 1877, in local newspapers from all parts of the UK. They range from *The Leeds Mercury* and *The North British Daily Mail* to *The Edinburgh Evening News*, and from *The South Wales Daily News* and *The Bucks Herald* to *The Kentish Gazette*. All notices were run in with other news (as was the style at the time), and most were identical to, or close variants of, the short note that appeared in the Halifax *Guardian* of June 23: "A telegram has been received announcing the death of Mr Alfred Crossley, the well-known naturalist, in the island of Madagascar, whither he had gone to collect specimens." Nonetheless, the quantity and sheer geographical breadth of this coverage, as well as the use of the term "well-known," imply that despite his reticence people across the UK, as well as locally in Yorkshire, may have followed Alfred Crossley's travels with interest; and it encourages one in the belief that there is more out there to be discovered about him.

CONCLUSION

One aim of this contribution is, of course, to draw attention to the astonishing life of an individual who made enormous contributions to 19th-century zoology, but who survives in history only as a name in specimen lists. It was, indeed, an amazing revelation to discover the sheer improbable drama of Crossley's story. Whether or not everything reported and speculated here is eventually substantiated, it is surely material for a movie—even without mention of Crossley's collecting activities in what are now Zimbabwe and Cameroon, for which it is hard to believe he was able to find the time in his tragically short life. As to amplifying our

knowledge of this extraordinary person, it is probably too much to hope that Crossley's last letter to his wife still lurks in a filing cabinet somewhere, but it is perhaps not out of the question that other documentation survives in Halifax, or in continental museum records, or even in Madagascar.

The other aim is to clarify Crossley's itineraries in Madagascar, with the objective of helping identify the exact localities at which the collector obtained his specimens. In the case of those many of his specimens that became holotypes, this need is particularly critical, but everything Crossley collected is potentially hugely important in providing range and variation information for taxa unique to a biologically extraordinary island in which habitats are disappearing apace. Accordingly, this contribution is also an appeal to all those working with any of Alfred Crossley's Madagascar specimens to try to fit any collecting localities they encounter within the outline itineraries presented here. Carleton et al. (2014) accurately describe the problem of pinpointing many of Crossley's collecting localities as "intractable." But maybe it is not impossible. As Carleton and colleagues suggest, it is conceivable that correspondence between Crossley and his dealers, or scientists such as Sharpe, Schlegel, or Peters, still exists uncatalogued in museum and other archives—although I was dismayed to learn from my colleague Phyllis Lee that documents relating to the bird collections (specifically those of Walter Rothschild) that had been stored in the basement of the NHM were at some point "BURNED by a new curator who thought they were taking up too much room" (P. Lee, in litt., 16 June 1986). There may, however, be better hope for the Grandidier archives in the MNHN in Paris and for anything in Ward's records that may have gone, with his collections, to the entomologist Charles Oberthür and thence also to the MNHN.

Pending positive archival findings, the main hope for identifying Crossley's localities will lie in the laborious identification of as many as possible of Crossley's specimens (of insects, vertebrates, and plants) to the lowest taxonomic level practicable, and then comparing the subsequently established geographical distributions of those taxa to his itineraries as outlined here and amplified from other sources. Despite the degradation of environments in the last century and a half, a knowledge of local histories and current conditions on the ground will clearly be helpful here. This is arduous and unglamorous work that will not be soon completed, especially given the way in which Crossley's collections have become scattered. But it offers the best prospect of reaching an understanding worthy not only of the specimens themselves, but of the personal sacrifices made by a man "of a fine and intelligent nature" who, although "simple and honest...was also modest and brave."

ACKNOWLEDGMENTS

My interest in Alfred Crossley dates back many decades, and over the years I have received help from many kind people in my attempt to rescue this remarkable man and his itineraries from obscurity. I am hugely indebted to Charles Nelson for publishing an initial appeal for information in *Notes and Queries* (Tattersall, 1986b) and to Eleanor MacLean, who responded with photocopies of the Crossley and Grandidier letters, cited in the text, that are held in the

Blacker-Wood Library of Zoology and Ornithology at McGill University in Montreal. Priscilla Ward helped track down early literature, and Gary Beaumont first alerted me to the *Halifax Courier* obituary. Rosemary Seton generously allowed me access to the archives of the London Missionary Society held at the School for Oriental and African Studies of London University. At the NHM, Paula Jenkins and Andrea Hart scoured the existing records on my behalf at different times, and Phyllis Lee looked for missing ones. In Madagascar, Mm. Razoharinoro and Ratefinanahary kindly did archival searches at the Académie Malgache and the National Archives, respectively. The late Jim Hardyman, whose career as a missionary in Madagascar gave him unparalleled local knowledge, unstintingly shared that expertise with me. Chris Smeenk, A.M. Husson, and L.B. Holthuis welcomed me to the zoology collections at the RMNH, and Olivier Langrand not only drew my attention to the Audebert letter in the RMNH archives but kindly furnished me with a copy of it, thereby galvanizing me to finally produce the account of Crossley's travels presented here. In Mauritius I received extensive help and hospitality from the late Jean-Alain Lalouette and his family. Belinda Ramnauth and the staff of the National Library of Mauritius in Port-Louis allowed me access to the library's 19th-century newspaper collection, and Alex de Voogt kindly double-checked newspaper references for me there. Several colleagues have shared my interest in Crossley and the history of collecting in Madagascar, and thereby encouraged it; besides Olivier Langrand and Steve Goodman, they include Nigel Collar, Matthew Goodrum, Will Harcourt-Smith, Chris Raxworthy, Alison Richard, the late Elwyn Simons, Natalie Vasey, and Anne Yoder. Steve Goodman and Chris Raxworthy provided valuable commentary on the manuscript. Patricia Wynne kindly drew figure 1. And my wife, Jeanne, has patiently tolerated an interest in the remarkable Alfred Crossley that occasionally amounted to an obsession. My gratitude goes to all those I have named and to many more.

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APPENDIX 1

TEXT OF THE ANONYMOUSLY WRITTEN OBITUARY OF ALFRED CROSSLEY (*Halifax Courier* of Saturday, June 16, 1877)

DEATH OF A HALIFAX MAN IN MADAGASCAR

Intelligence has been received this week of the death, in the island of Madagascar, of Mr Alfred Crossley, a townsman. He was only 37 years of age, and for the greater part of his years he had been living a life of adventure and peril by sea and by land. In early years, while residing with his relatives in the neighbourhood of Mount-pleasant, he was possessed by a strong desire for the life of a sailor, and as he could not be persuaded otherwise he was duly apprenticed. In one of his voyages he was wrecked, and he and another sailor escaped only by taking to a small raft, on which they drifted on to Madagascar. Here they were detained two years as prisoners, but not very hardly treated. In the end they managed to escape from their captors, and reaching more civilized parts of the island they eventually got away. Mr Crossley pursued the sea-faring life for some time longer, in the meantime marrying Sarah, the daughter of Mr Parker, formerly a blacksmith in Crib-lane. He afterwards was disposed to settle down in Halifax, but circumstances not favouring that disposition, he went out again to Madagascar, not as seaman this time, but as a naturalist. Partly under an engagement with a private gentleman, he went to capture and bring home specimens in natural history and botany for the enrichment of private and public collections in this country. We believe he was commissioned specially to look out for butterflies; but nothing came amiss to him of course, the rarer specimens being particularly sought. He captured animals, birds, butterflies, insects, not overlooking, while he subordinated, botanical specimens. It was a strange life to lead truly. Mr Crossley would disappear in the romantic and most beautiful wilds of the island for weeks, sometimes months, with native servants—"boys" as they are called, and as Livingstone called his attendants—patiently gathering up the living creatures he sought for, and being skilled in the work, properly curing and packing them. On these expeditions he went many times, and the specimens he brought home appear now in the collections of private gentlemen and in public institutions, such as the British Museum. Readers would be astonished and incredulous were we to mention the prices some specimens realise, and equally so at the number of persons employed in work like this in different parts of the world. Mr Crossley spent a good while in parts of Africa in like pursuits.

Full of perils of many kinds undoubtedly such a life must be, but it has attractions to the adventurous and courageous. Mr Crossley used to say that after a few months in the wilds the strong homesickness used to come upon him. And he would hasten away to the port and quickly home, often astonishing his friends by suddenly appearing among them, when they thought he was thousands of miles away. He took what proved to be his final farewell just a year ago. It may be mentioned that his wife had died, and in February, 1876, he married again, Rebecca, the daughter of Mr Wm. Dennis, a gentleman well known as a vocalist in Halifax. Four months after the marriage, circumstances seeming favourable, he decided to go to Madagascar again. Somehow, things did not go well with him, and several mishaps occurred. Then he was stricken down with sickness—an inflammation; this was in February; he could not, because of weakness, write all he had to say to his wife, and a friendly hand wrote part of it. No further communication was received from him as the weeks went away, but as it was made known that smallpox raged on the island, and ships and mails were not allowed to leave, alarm was stayed. Thus for many weeks hopes and fears beguiled each other. On Wednesday [June 13, 1877], however, a telegram of but a few words told that he was dead—how, where, when, is not known. Less than anybody would Alfred Crossley have expected to be made the subject of a paragraph in the *Halifax Courier*; but he was worthy of these few lines, for he was of a fine and intelligent nature. Simple and honest, he was also modest and brave. There was a singular absence of forwardness, not to mention swagger, in his manners. Only now and again, and under favourable conditions, could he be drawn out to speak of his travels, but sometimes he would tell attractive stories of the sea, and of adventures among wild scenes and wilder men; and at these times there would creep out, unconsciously to himself, facts and incidents showing the fortitude, courage, and bravery of the man. He had an intense desire, all his wanderings over, to die at home at last; but it was not so.

APPENDIX 2

CHRONOLOGICAL SUMMARY OF ALFRED CROSSLEY'S ITINERARIES IN MADAGASCAR

Exact dates are unclear except where given.

- 1839 August 11, born Halifax, UK.
- (?) 1858–1860 Shipwrecked off Madagascar; held captive/enslaved; escaped.
- 1869 Returns to Madagascar to collect; travels Vohemar to Maroantsetra via Andapa, thence to Tamatave via Mananara. Continues via Moramanga or Didy to Antsihanaka (Saralan and Nosy Vola), where he meets G. Grandidier at end of year.
- 1870 Travels from Antsihanaka to Antananarivo, and thence northwest at least as far as Fih-aonana, possibly beyond. Back in Tamatave by July (after “going missing”), returns to UK.
- 1871 In Madagascar again; travels from Maroantsetra to Mananara, thence inland to Mandritsara and south to Antsihanaka. May have proceeded west to Morondava before returning to UK.

- 1872 Back in Madagascar by February; collects around and inland from Mananjary. Possible detour to Vangaindrano, then follows Mananjary River valley via Kianjavato to Ambohimombo and Nandihizana on plateau. Thence to Antanananarivo, east to Ankavandra, and north to Manerinerina Forest region before reaching Majunga. Returns to UK, probably from Majunga.
- 1873 Presumably in UK.
- 1874 In April, passes through Mauritius en route to Madagascar, where AC is said to have crossed the island from Tamatave to Morondava, though the only recorded specimens are from the east.
- 1875 In June, returns from Tamatave to Mauritius, continues to UK.
- 1876 Remarries in Halifax on February 28, back in Madagascar by August. Confronts Audebert, likely in Mananara.
- 1877 February 28 dies, probably in Tamatave.

APPENDIX 3

EXTRACT FROM A LETTER FROM JOSEPH-PETER AUDEBERT IN SAMBAVA TO FRANÇOIS POLLEN IN HOLLAND, JANUARY 1878, AS TRANSCRIBED BY OLIVIER LANGRAND

[Crossley was...] mal élevé, mais on lui verse l'argent, malgré les mauvais résultats. En venant il a voulu tout faire et il n'a fait rien. Il a même détourné mes hommes et arrêté les bêtes qui avez pris pour moi. Encore un sale citoyen. Crossley est mort comme vous le savez presque un an. Son marchand étant Mr Cutter Natural History Agent in Bloomsbury. Un autre Mr Gustave Schneider à Basel."

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