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Two recently identified photographs of living Nullarbor barred bandicoot (*Perameles papillon*) prior to extinction

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ABSTRACT

Two photographs of living Nullarbor barred bandicoots, *Perameles papillon* have been identified in the collections of the Harry Brookes Allen Museum of Anatomy and Pathology at the University of Melbourne. The photographs are of captive animals photographed in the 1920s at the University of Adelaide by anatomist Frederic Wood Jones. In addition to one glass slide held by the South Australian Museum archives, these are the only documented photographs known to exist of *P. papillon* as a living animal, prior to the species' extinction in the early 20th century.

Keywords: extinction, Frederic Wood Jones, marsupials, museums, Nullarbor barred bandicoot, Ooldea, Peramelemorphia, photography.

Introduction

Since the onset of European colonisation in 1788, Australia has suffered the highest rates of terrestrial mammal extinctions in the world (Burbidge 2024). In this era of catastrophic species loss, photographs of extinct animals are increasingly recognised and valued for their scientific and cultural importance (Sleightholme and Campbell 2021; Adams *et al* 2023). Although attention is disproportionately focused on iconic animals, particularly the thylacine (*Thylacinus cynocephalus*), there are lesser-known extinct Australian vertebrates with a photographic record such as the toolache wallaby (*Notamacropus greyi*) and paradise parrot (*Psephotellus pulcherrimus*) (Chisholm 1922; Finlayson 1927). Two photographs of barred bandicoots (*Perameles* sp.) have been identified in the collections of the Harry Brookes Allen Museum of Anatomy and Pathology (HBAM) at the University of Melbourne. The author contends that they portray the extinct Nullarbor barred bandicoot (*Perameles papillon*). *P. papillon* was described by Trouvillon and Phillips in 2018, on the basis of historically collected museum specimens and subfossil remains. *P. papillon* was a gracile bandicoot with a pointed snout, large erect ears, and striking symmetrical barring on its rump, reminiscent of a butterfly; hence, the specific name. The species was listed as extinct under the Federal Government's *Environmental Protection and Biodiversity Conservation Act 1999* in 2021. It was probably extinct by the late 1930s, and it is assumed that this was due to predation by introduced carnivores and habitat degradation by introduced herbivores. Prior to its extinction, *P. papillon* had a distribution on the Nullarbor Plain, Roe Plain, and Eyre Peninsula in South Australia (Trouvillon and Burbidge 2023). Living in remote environments and defined solely on deceased specimens, information on living animals is scarce.

The two photographs are part of a series of 32 mounted photographs, all depicting native Australian animals and environments. They were produced by Frederic Wood Jones (1879–1954), Professor of Anatomy at the University of Melbourne from 1930 to 1937. Born and educated in England, Wood Jones first came to Australia to take up the role of Professor of Anatomy at University of Adelaide from 1920 to 1926. He became a significant figure in 20th century Australian mammalogy, publishing the influential *The Mammals of South Australia* in three volumes (Wood Jones 1923, 1924, 1925). Wood Jones was a prolific museum collector and acquired many specimens during South

Australian and Victorian field trips in the 1920s and 1930s (Long 2024). He was also well-known for keeping and breeding native animals, maintaining a ‘menagerie’ in a shed at the rear of the University of Adelaide (Anonymous 1923). Although never travelling there himself, Wood Jones received shipments of live and dead animal specimens from Ooldea, a small South Australian settlement on the eastern edge of the Nullarbor Plain. Wood Jones established a connection with stationmaster Anthony Gladstone Bolam, who obtained animal specimens via the assistance of local Aboriginal collectors (Barrett 1924).

Methods

The photographs were found within archival boxes of documents, books, and photographs belonging to University of Melbourne anatomist Sydney Sunderland (1910–1993). The boxes were placed in the care of the author after being found in a basement storeroom of University of Melbourne’s Medical Building in January 2023. The archival material included photographs from the collections of Wood Jones, Sunderland’s predecessor and mentor. Within this photographic material was a group of 12 black and white photographs mounted between a pane of glass and a cardboard backing. These were added to a set of 20 similar photographs already held by the HBAM, and accessioned into the museum database in November 2024. Thorough archival research was undertaken by the author into the provenance of these photographs. An additional 11 photographs from this set were identified in the archives of the Royal College of Surgeons London (Royal College of Surgeons 2024). During the cataloguing process the author contacted Kenny Travouillon, Terrestrial Zoology Curator at Western Australian Museum, to assist with the identification of the species of *Perameles* in two photographs. Kenny Travouillon identified them as *P. papillon*.

Results and discussion

The two photographs were accessioned into the HBAM as 516-501117 and 516-501116. The first image (516-501117) is a black and white photograph mounted between a pane of glass and a stiff cardboard backing held together with black cloth tape (Fig. 1). ‘*Perameles myosura notina* adult ♀ Ooldea specimen’ is inscribed on the cardboard backing, handwritten in black ink. The photograph depicts the head and upper body of a reclining adult female bandicoot. The subject is positioned on a table or similar surface with no visible natural background and appears to be alive. As was common practice at the time, there has been some overpainting of the photograph, probably by Wood Jones himself who was an illustrator and painter (Christophers 1992). Analysis of 516-501117 by Gavan Mitchell of the Department of Anatomy & Physiology Imaging



Fig. 1. 516-501117. Mounted photograph of a Nullarbor barred bandicoot (*Perameles papillon*) produced by Frederic Wood Jones (Photo by Gavan Mitchell).



Fig. 2. Magnified image of 516-501117 depicting the area around the eye, showing black and white brush and pencil strokes (Photo by Gavan Mitchell).

Team showed that the overpainting consists of thin strokes of white and black lines through the fur and a sharpening of the area around the eye (Fig. 2) (Gavan Mitchell, pers. comm. 2025).

The second image (516-501116) is an extensively retouched black and white photograph also mounted between a pane of glass and a stiff cardboard backing held together with black cloth tape (Fig. 3). ‘*Perameles myosura notina* young ♀ specimen/30 Young Banded Bandicoot’ is inscribed on the cardboard backing, handwritten in black ink and pencil. Depicting a young female bandicoot seated in a human hand, the photograph has been totally overpainted with black and white watercolour and pencil. Although appearing solely as a painting, analysis of 516-501117 by Grimwade Conservation Services showed that under magnification, the diffuse appearance of a photographic base can be discerned beneath the pigment particles of the overlying paint (Katy Glen, pers. comm. 2025).



Fig. 3. 516-501116. Mounted photograph of a Nullarbor barred bandicoot (*Perameles papillon*) produced by Frederic Wood Jones (Photo by Gavan Mitchell).

The trinomial used in Wood Jones' inscriptions, '*Perameles myosura notina*', is ambiguous. Oldfield Thomas proposed the subspecies in 1922 to distinguish South Australian 'barred bandicoots' from Western Australia's south-western barred bandicoot, *P. mysuros*. Now being extinct, the last known specimen of *P. mysuros* was collected in 1907 and so could not have been present as a live animal in Wood Jones' collection in the 1920s (Travouillon and Burbidge 2023). In any event, specimens of *P. mysuros* (as it is now defined) have never been recorded from South Australia (Travouillon and Phillips 2018). As the only 'barred bandicoot' extant in Ooldea at the time, the species in the photographs can be identified as *P. papillon*.

The animals depicted in these images were captive animals photographed by Wood Jones at the University of Adelaide between 1924 and 1926. Sometime prior to August 1924, Wood Jones received a consignment of 'barred bandicoots', his commonly used name for *P. papillon*, from Ooldea (Anonymous 1924). He stated that all his barred bandicoot specimens were from Ooldea and had been sent to him by Bolam (Wood Jones 1924). Wood Jones described this transfer and breeding the species in detail in *The Mammals of South Australia*:

'On one occasion eight live [Nullarbor barred bandicoot] specimens were sent from Ooldea. All eight were dead and almost devoid of hair when they arrived in Adelaide. They had fought each other to the death on the railway journey. But among the corpses were four pouch young, which were uninjured. Two of these were males and two were females, the males being one litter and the females another. These little animals were cold and apparently dead; but they were carefully warmed up and given artificial respiration, and in the end they all recovered. [...] It was hoped to breed from this stock; so, when they were nearly a year old, the remaining female was placed in a run with one of the males. [...]

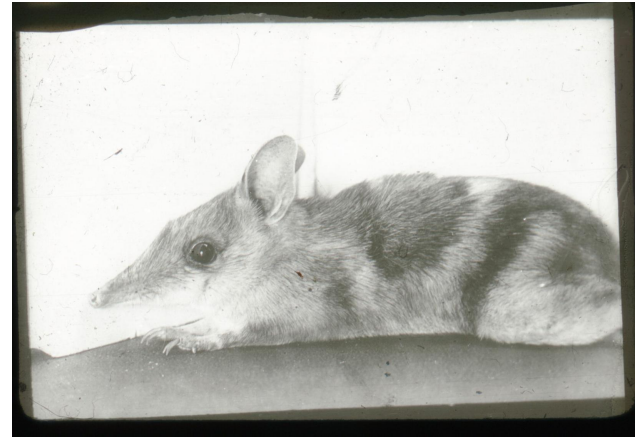


Fig. 4. AA 640/3/85. Glass photographic slide of a Nullarbor barred bandicoot (*Perameles papillon*) by Anthony Gladstone Bolam (Photo courtesy South Australian Museum Archives).

Subsequently, this female bred freely with the first male, but always evinced a strong tendency to kill and eat her progeny, even when they were grown to half their adult size.' (Wood Jones 1924, p. 150). The animals in the photographs were evidently the pouch young that survived the trip from Ooldea or their descendants.

The authors of the paper describing *P. papillon* are unaware of any other photographs of this species (K. Travouillon, pers. comm. 2024). The only other documented image of a living representative of this species is a black and white glass slide held in the South Australian Museum archives (AA 640/3/85, Fig. 4) produced by Bolam sometime before 1923 (Bolam 1918–1925). It is part of a collection of photographs that were produced for Bolam's book, *The Trans Australian Wonderland*, although the *P. papillon* image was not used in the publication (Bolam 1923). The photograph depicts a living *P. papillon* lying on table or board with its forelegs placed in front of it. There is no discernible overpainting or retouching of the slide. A version of this photograph used in a 1924 newspaper article shows more of the posterior of the animal and it appears that its hindlegs were bound (Barrett 1924). It is possible that this individual was part of the consignment of eight live *P. papillon* that Bolam sent to Wood Jones.

There are no preserved or skeletal specimens of *P. papillon* in the HBAM. At least four skulls were present in Wood Jones' collections while he was at University of Melbourne, but he took them with him when he left in 1937 and returned to England. Wood Jones presented the skulls to the Hunterian Museum London, where he worked as a curator in the 1940s (Royal College of Surgeons 2025).

Wood Jones was well aware of the extinction crisis facing Australia's fauna and made repeated public appeals to take action (Anonymous 1924; Wood Jones 1924). Because of his foresight, his collections represent an invaluable resource for research into the historical extinctions of Australian mammals.

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Data availability. The author confirms that the data supporting the findings of this study are available within the article and the collections of the Harry Brookes Allen Museum of Anatomy and Pathology on request.

Conflicts of interest. The author declares that there are no conflicts of interest.

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