SHARING A THYLACINE *THYLACINUS CYNOCEPHALUS*: ONE THYLACINE, FIVE SPECIMENS, FOUR MUSEUMS ON TWO CONTINENTS

by Kathryn Medlock

(with eight plates)

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As the largest marsupial carnivore of modern times and one of the most well-known recently extinct species, the thylacine, or Tasmanian tiger *Thylacinus cynocephalus*, continues to be a source of scientific interest and public fascination. Today, over 800 individual thylacine specimens are lodged in the world's museums, most acquired during the nineteenth and early twentieth centuries. This paper describes the process of tracking the fate of a single thylacine that was captured and killed in 1902 as an example of how, after entering the museum system, its remains were shared between researchers and institutions. Specimens obtained from this animal are now held in four natural history museum collections: three in Australia and one in Europe.
Key Words: thylacine, Tasmanian tiger, marsupial extinction, Australian Museum, Macleay Museum, Tasmanian Museum and Art Gallery.

INTRODUCTION

The thylacine, or Tasmanian tiger *Thylacinus cynocephalus*, is one of the most well-known recently extinct species. As the largest marsupial carnivore of modern times, specimens were (and still are) sought by museums around the world, and today, over 800 individual thylacine specimens are lodged in the world's museums. Most were acquired during the nineteenth and early twentieth centuries (S Sleightholme, pers. comm. 12 May 2024). As an example of a species the extinction of which was human-induced, these much-valued specimens provide a priceless window into the past and a lesson for the future about how easily a species may be exterminated and become extinct. Historical information associated with thylacine specimens provides humanities and scientific researchers with insights into the processes and events surrounding species rarity and eventual extinction. Distinct from the numerous alleged sightings since 1936 (death of the last live thylacine in the Hobart Zoo), there is no doubt that if reliably labelled, each specimen demonstrates existence prior to 1936. Those specimens, if associated with verified data from primary sources, provide a fundamental source of information from which species distributions and population changes can be assessed with a high degree of accuracy.

When natural history museums were being established and expanded during the nineteenth century, negotiating specimen acquisitions via purchase, collection, exchange and donation was a major task for most curators. With the aim of highlighting local fauna and newly discovered species in public displays, museum curators also aimed to provide scientists with specimens for study and the description and classification of newly discovered species. Prior to the recognition and establishment of environmental and ecological science, the collecting details for many specimens were not considered to be as important as they are today. Museums were more interested in recording acquisition dates and donors' names rather than the circumstances, date and place of collection. The person who captured and killed the animals, was rarely identified in early museum records, but the donor was. People who were encouraged to donate specimens were informed that their names would be permanently and prominently attached to their specimens. Although a specimen could pass through several hands on its way from the field to the museum, the donor's role was always given prominence in museum records (Alberti 2005).

Only a frustratingly small number of the thylacines lodged in museums have a reliable and complete provenance. Thylacine researcher Dr Stephen Sleightholme (compiler of the International Thylacine Specimen Database) estimates that only about 14% of all specimens currently have an assigned date and place of collection. From the 1920s the percentage of specimens with good provenances is higher due to a new research focus on the years of serious population decline in the lead up to extinction (S Sleightholme, pers. comm. 20 May 2025).

Discovery and retrospective assignment of accurate provenance data require a substantial amount of research but can render much new knowledge and significantly increase the value of any museum specimen by providing irrefutable proof of a species existence in time and place. Therefore, data sets using material with accurately provenanced associated data increases the significance, integrity, scientific and cultural value of those datasets (Fearing *et al.* 2025).

This paper describes the process of tracking the fate of a single thylacine that was captured and killed in 1902. After entering the museum system, its remains were shared between researchers and museums. Specimens obtained from this animal are now held in four natural history museum collections: three in Australia and one in Europe.

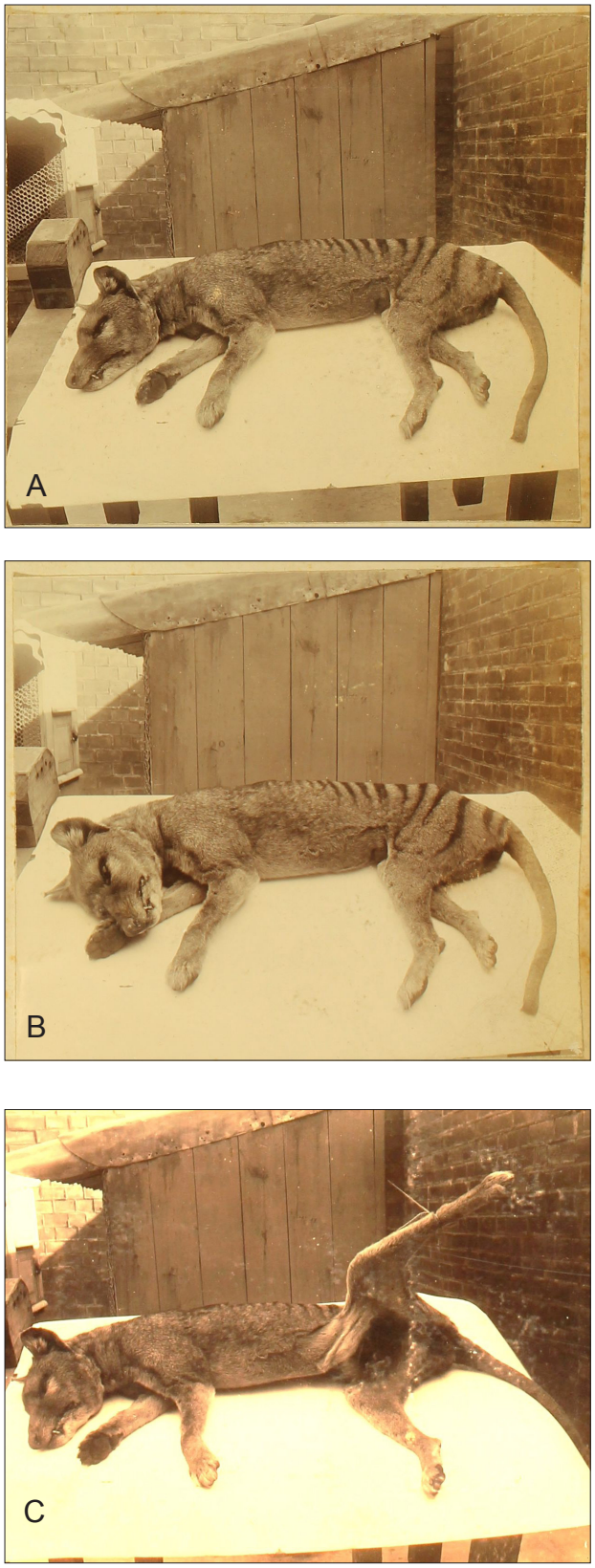

PLATE 1 — Adult female thylacine later prepared as a mounted specimen. **A** Thylacine's head has been positioned to reveal a severe injury across the front of the neck just below the jawbone; **B** General view of the animal laid on its right side; **C** Thylacine with its left hind leg elevated and held with a rope to give a clear view of her dissected pouch area. (Images © 2025 Australian Museum. AMS421-3-p5)

THE SEARCH

This search for information began with the 2011 discovery by Australian Museum archivists of three unpublished photographic prints of a dead female thylacine. The photographs were found during a reorganisation of the photographic collection involving the registration of a series of photograph albums that, before their transfer to the museum archives, had been held in curatorial offices. The albums, containing photographs of a range of specimens that had been acquired by the museum, were introduced at a time when photography was first seen as a useful tool to assist curators to keep track of collections and specimens.

The three photographs depict a mature adult female thylacine (pl. 1A, B, C). The animal was identified by Dr Sandy Ingleby as Australian Museum mounted specimen M1674 that had been acquired from the University of Sydney via Professor Haswell, a museum trustee (S Ingleby, pers. comm. 31 May 2021). The photographs prompted this research into the story of the animal, the source of the photographs and the circumstances of this thylacine's acquisition by the Australian Museum. During the search, a paper trail was discovered that led to the identification of additional specimens obtained from this animal that are now lodged in separate museums. An approximate collecting date and a clue to the collecting locality were also discovered.

THE PHOTOGRAPHS

The dead female thylacine is positioned on her right side on what appears to be a work bench. The background consists of the internal corner of a brick wall with some small basic animal cages, of the sort that was common in laboratories at that time. In each photograph, the thylacine's body has been slightly re-arranged to more clearly show some features of the animal.

- Plate 1A (AM AMS421_3_p.5_[a]) the thylacine's head has been positioned to reveal a severe injury across the front of the neck. This injury may have been caused by a 'necker' snare which generally consists of a running noose placed at head height across a game trail or gap in a fence (Jetson 1998), strangling the captured animal.
- Plate 1B (AM AMS421_3_p.5_[b]) is a general view of the animal laid on its right side.
- Plate 1C (AM AMS421_3_p.5_[c]) shows the thylacine with her left hind leg elevated and held with a rope to give a clear view of her dissected pouch area.

These images were originally held in an album that also contained photographs of galleries at the Tasmanian Museum (now Tasmanian Museum and Art Gallery TMAG). The photographs can be reliably dated to 1901/1902 when a new gallery known as the Trophy Room was formed by enclosing a central courtyard. The building work was completed in early 1902 but the new Trophy Room was not opened to the public until later in the year. A photograph of the new gallery depicts it during the installation of exhibits prior to opening to the public

towards the end of 1902. Other photographs in the same album depict a new art gallery that was built at the same time but opened to the public in April 1902.

The photographs depict what is now a taxidermied thylacine mount prior to preparation, and was identified by Dr Sandy Ingleby, collection manager for mammals at the Australian Museum (S Ingleby, pers. comm. 31 May 2021). A curatorial note dated 23 January 2012 that is kept with the specimen, states there had been damage to the ear tips and that some skin patches were repaired using kangaroo skin. The acquisition date was recorded as 5 August 1902 and the specimen is listed as being donated 'in flesh' (Australian Museum, curatorial note, 23 January 2012). The donor was Professor William Haswell, a University of Sydney biology professor, and a trustee of the Australian Museum. The collection date and collector were not recorded for the usual reasons as outlined previously.

All three images were subsequently published on the online news website YAHOO!news on 27 August 2024. The YAHOO!news article suggested that the thylacine had come from Melbourne and may be one of three thylacines that died at the Melbourne Zoo in that year. It was suggested that the photographs were taken soon after death because there is no sign of rigor mortis and the thylacine was able to be manipulated into the three different positions. This led to the conclusion, in consultation with thylacine researcher Branden Holmes, that the thylacine had died only moments before the photographs were taken (Dahlstrom 2024). However, rigor mortis resolves over time due to muscle decomposition and can be overcome by physical manipulation of joints. In dogs, for example, rigor mortis is present at less than one day after death and can persist for around seven days at a temperature of 11°C (Brooks 2016). Whilst working at the TMAG, the author dissected and prepared hundreds of Tasmanian birds and mammals as scientific specimens. Extensive rigor mortis was very rarely encountered, a fact that was corroborated by staff who carried out similar work for the Queen Victoria Museum and Art Gallery in Launceston (T Gordon, pers. comm. 1 July 2025). It is well known that rigor mortis is not present in de-frosted carcasses regardless of their state when initially frozen (N Mooney, pers. comm. 1 June 2025). It is highly likely that the thylacine was frozen as a preservation measure prior to being transported to Hobart and then shipped from Hobart to Sydney.

The claim that the specimen could be one of three thylacines that died in Melbourne Zoo on 9 April, 29 May and 9 June 1902 respectively is also highly questionable because the fate of the bodies of those three zoo animals is reliably known. The thylacines that died on 9 April and 29 May 1902 were sent to the National Museum of Victoria where their skins and some skeletal components were preserved as specimens C5741 and C5744 respectively and are still in the collection. The body of the third thylacine, which died on 9 June, was considered too damaged and therefore unsuitable for museum purposes and was destroyed at the zoo (Paddle 2012, 2017).

The first museum record of this entire thylacine specimen occurs in the handwritten register of specimens in the Tasmanian Museum and Art Gallery, the TM2 Register (1890–1913). Working retrospectively from this record, the provenance and fate of the thylacine's body was determined through examination of archival records held in the TMAG as well as the Australian Museum in Sydney.

THE TASMANIAN MUSEUM AND ART GALLERY

In mid-1902 the Tasmanian Museum (now TMAG) received an adult thylacine with two late-stage young in her pouch. Curator Alexander Morton retained and registered both pouch young into the TMAG collection and documented their acquisition in the museum's handwritten TM2 register. They were assigned the registration numbers TM10954 and TM10955. Dr Walter Henry Tofft, a municipal warden and medical doctor from Campbell Town was listed as the donor (pl. 2A). The entry was dated July 1902, but no specific day was given.

Although the two young thylacines were formally registered into the TMAG collection, their mother was not. Morton had already organised for her body to be sent to Professor William Haswell at the University of Sydney. The acquisition and subsequent donation of the thylacine to Haswell was not recorded in the TMAG Trustee Minutes but was noted in the TMAG register with an annotation alongside the registration entries for the pouch young: 'These two young tigers were taken from the pouch. The mother was sent to Prof. Haswell at The University of Sydney for dissecting purposes.' (TM2 register, July 1902, p. 273, pl. 2B).

Morton and Haswell had much in common, knew each other, and their interests overlapped. Prior to moving to Tasmania, Morton had worked at the Australian Museum when Haswell was the Acting Curator in 1883–1884. Haswell later became a Trustee of the Australian Museum from 1891 until 1923 (Strahan 1979, p. 166) and Morton was the Curator of the Tasmanian Museum from 1886 until 1907 (Huxley 2008). Both were active members of the Australian Association for the Advancement of Science (AAAS). Alexander Morton was a member of the Tasmanian Fisheries Commission (Morison 1983, Huxley 2008), and Haswell, as a well-respected marine biologist, frequently visited Tasmania on fisheries business.

After removing and preserving the pouch young, Morton sent the mother to Haswell in Sydney. Although Haswell had little interest in the thylacine, his work with the Australian Museum and as a comparative anatomy lecturer at the University of Sydney explains his interest in obtaining the thylacine for research and for student demonstration.

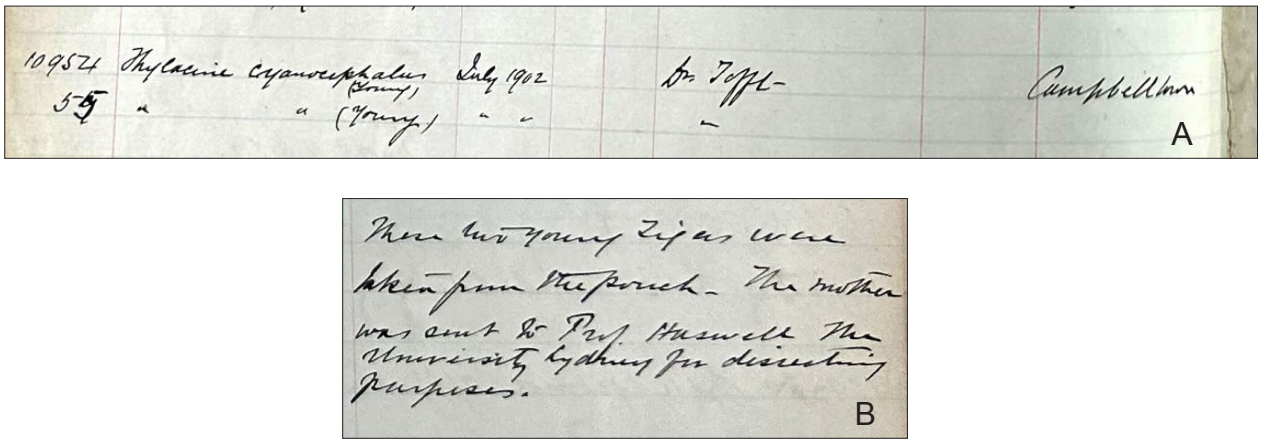

PLATE 2 — **A** Page 273 from Tasmanian Museum TM 2 register recording the arrival of the adult thylacine and her two pouch young from Dr Tofft in July 1902; **B** handwritten note on opposite page of register 'These two young tigers were taken from the pouch. The mother was sent to Prof Haswell University of Sydney for dissection purposes.' (Images courtesy Tasmanian Museum and Art Gallery.)

TRANSFER TO PROFESSOR HASWELL, PHOTOGRAPHY AND PREPARATION

After the adult thylacine arrived in Sydney, Haswell transferred it to the Australian Museum for preparation. The transfer was organised through the Australian Museum's formal exchange program. This ensured that the University of Sydney acquired the thylacine's skeleton, and that the Australian Museum kept the skin for preparation as a mounted specimen. After arrival at the Australian Museum, Dr James Peter Hill, a University of Sydney biology demonstrator and embryology lecturer (Young *et al.* 1984), visited the Australian Museum, examined the thylacine, recording the size and extent of the pouch in his notebook and dissecting out the reproductive tract.

It is thought that the photographs (pl. 1A, B, C) were taken at the Australian Museum during Hill's visit for several reasons. Firstly, the Australian Museum routinely photographed new acquisitions, and secondly there is no part of the Tasmanian Museum building complex of 1902 with such an inside corner and matching brickwork. Nor did the Tasmanian Museum keep animals alive in cages such as those that can be seen in the photographs. The photographs were taken after the reproductive tract dissection, but before preparation of the mount, and were possibly taken in the taxidermist's work area.

After Hill dissected the thylacine, he labelled and preserved the reproductive tract with the rest of his collection, giving it the registration number of MA840. Hill's research specimens, including the thylacine reproductive tract, were subsequently taken to London when he moved there in 1906 (Richardson & Narraway 1999, Hughes 2000). Over his career, Hill published extensively on the embryology of marsupials, but he never personally published any research based on this thylacine specimen.

THE AUSTRALIAN MUSEUM

Prior to arriving at the Australian Museum on 5 August 1902, Haswell had already brokered the exchange deal with the approval of the museum's Curator (Director) Dr Robert Etheridge. The document regarding the exchange records that the Australian Museum would retain the skin and skull for preparation as a taxidermic mount for public display and that the post-cranial skeleton would be returned to the University of Sydney. The details are recorded in the Australian Museum Exchange Schedule No.32 of 1902 that records its arrival as 'Tasmanian Wolf in flesh' (pl. 3A). Etheridge wrote on the document: 'I have the honour to recommend this Exchange'. (Australian Museum Exchange document No. 32. of 1902.)

The Mounted Specimen

The exchange document records the new Australian Museum registration number, M1674. The specimen, a taxidermic mount, is still in the Australian Museum mammal collection and is known to staff as 'Haswell's Thylacine' (S Ingleby, pers. comm. 31 May 2021). The skull is retained within the mount museum.

Curatorial notes prepared later and dated January and February 2012 confirm its arrival date of 5 August 1902, and the existence of the three black and white photographs. As a group, the photographs are given the reference number AMS421/3/p.5. The banding pattern of the thylacine in the images aligns with the bands on mount M1674 (Haswell's thylacine). It is well known that individual thylacines each have a unique banding pattern that can be used to identify individual animals (Guiler 1985, Sleightholme & Campbell 2019), hence, the matching banding pattern provides further confirmation of the identification of the photographed animal.

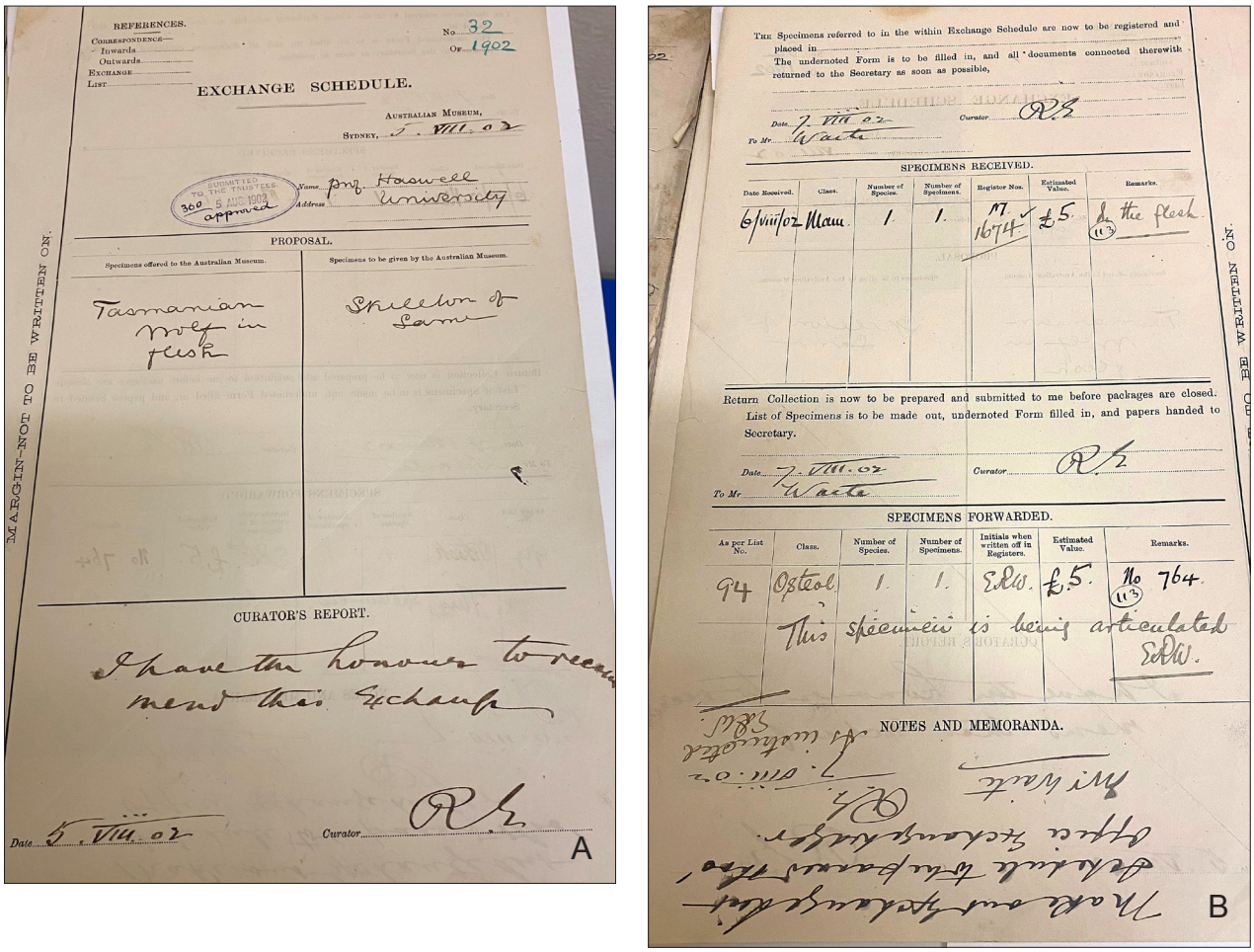

PLATE 3 — **A** Australian Museum exchange schedule No. 32 of 1902 recording the arrival of 'Tasmanian wolf In flesh' to be exchanged with 'skeleton of same'; **B** reverse of exchange document No. 32 of 1902 accepted by zoology staff member ER Waite and recording the new registration number of M1674. The body and the skeleton were both valued at £5, and the skeleton is to be articulated. (Author's photographs.)

The Skeleton, Macleay Museum

The exchange document (pl. 3A, B) also records the fate of the post-cranial skeleton and its subsequent delivery to the Macleay Museum, University of Sydney. The arrangement was signed off by the museum zoology assistant, Mr ER Waite, who added and initialled a note to explain why the skeleton wasn't immediately available: 'As the specimen is being mounted it will not be ready until next month. E.R.W.'

A later, but unsigned note on the same document records the delivery of the skeleton to the university on 28 October 1902: 'Specimen delivered to Prof Haswell's messenger 28/10/02'.

It is unusual for an incomplete mammal skeleton, especially one missing a skull, to be an acceptable scientific museum specimen. The University of Sydney already had a fully mounted thylacine and several skulls that had been sent to the university by Tasmanian scientist William Petterd in 1876. The only type of thylacine specimen lacking in the University of Sydney teaching collection in 1902 was a complete articulated skeleton. A complete skeleton was valuable because it could give comparative anatomy students the opportunity to study all details of thylacine osteology and examine the similarities and differences between marsupial and placental skulls and post-cranial morphology, characteristics of great interest to anatomists and evolutionary biologists.

This was not the first time that a different skull was used to 'complete' a thylacine skeleton. When sending a skeleton to Cambridge University in 1869, thylacine trader and Hobart solicitor Morton Allport wrote:

> *I regret that I could only obtain one small Thylacinus for this shipment but will make up for it shortly. The skull of the specimen sent was much maltreated by the Shepherd who killed the beast and fearing it may prove difficult to repair I have added a perfect skull from my own cabinet.* (Allport 1869)

The post cranial articulated skeleton from Haswell's thylacine is currently held in the Macleay Museum at the University of Sydney (M498). For display purposes, a different skull (M1427), probably one that was acquired from Tasmanian scientist William Petterd, is often placed on the skeleton for 'completeness'.

SPECIMEN DETAILS

After its death, the possession of this thylacine passed through many people each of whom had a role in determining its fate and ensuring that its parts were formally lodged in four museum collections: three in Australia and one in Europe. This thylacine went from being a living entity, integral to Tasmania's natural environment, to a valued scientific specimen for museum curators and scientists to examine, skin, measure, photograph and dissect. With each transaction, the specimens were valued according to the agendas and the needs of the museums and universities that preserved and held on to the material.

The following is a summary of the 'afterlife' of each anatomical specimen obtained from this thylacine.

Pouch young (male): A930 (pl. 4). Pouch young (female): No longer exists Tasmanian Museum and Art Gallery, Hobart

On arrival at TMAG, the male and female pouch young were removed from the pouch and retained by the museum and preserved as spirit specimens. Each was registered separately with the numbers TM10954 and TM10955. The register entries do not record which number was assigned to the male and which to the female. Both were received from Dr Walter Tofft dated to July 1902 and registered by Alexander Morton on arrival. The female pouch young no longer exists, but its fate can be determined by examination of the TMAG Trustee Minutes.

In October 1910, Dr TT Flynn, the newly appointed biology professor at the University of Tasmania, asked for the 'immature specimens of the Thylacine now in the store at the Museum' (Trustee Minutes 10 October 1910). The decision was deferred until the next meeting when Flynn's request was granted because 'The specimen was needed for research work' (Trustee Minutes 21 November 1910).

Four months later, in March 1911, Flynn again approached the trustees via fellow trustee, the geologist and engineer Dr Fritz Noetling, who wrote a letter asking, on Flynn's behalf, to use the remaining male pouch young. After some discussion, the Trustee Minutes record that:

> *A letter from Dr Noetling with regard to an embryo of Thylacine was read. As it earned the action of the Trustees and needed a reply from the Secretary and Curator, this reply was read.*
> *The Chairman as well and Mr Thomas Steele informed the meeting that the Thylacine was still a plentiful animal in certain parts of the country.* (Trustee Minutes 6 March 1911)

Soon after this, Flynn changed his mind regarding the second specimen, the trustees recording on 19 March 1911 that Flynn's request had been withdrawn (Trustees Minutes 19 March 1911).

PLATE 4 — A930, the surviving male pouch young. This was one of two young that were removed from their mother's pouch and retained by the Tasmanian Museum. Its female sibling no longer exists. (Image courtesy Tasmanian Museum and Art Gallery.)

In 2018 the male pouch young (A930) (pl. 4) was taken to Melbourne University for scanning as part of a research project to examine development in the thylacine. The specimen (along with pouch young representing a range of ages from other museums) was CT scanned, its age estimated, and skeletal and organ development was revealed. Specimen A930 was estimated to be 9.5 weeks old, with a light covering of fur and showed the distinct thylacine elongated skull with a high degree of ossification. The previous lack of non-invasive techniques to examine rare museum specimens had limited studies on the development of thylacines at this early age (Newton 2018).

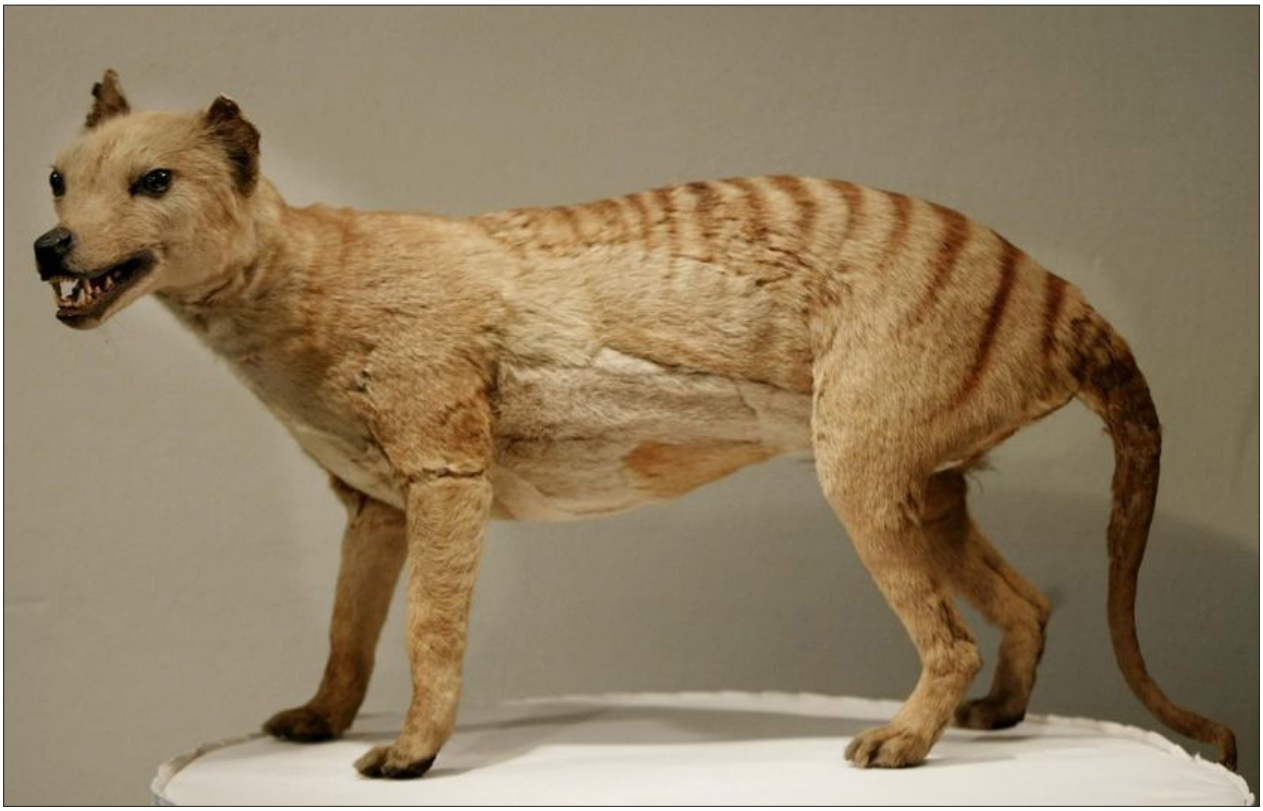

PLATE 5 — M1674 Haswell's thylacine mounted in 1902. (Image Sandy Ingleby, © 2025 Australian Museum.)

Mounted specimen of Haswell's thylacine with skull in skin M1674. Australian Museum, Sydney

After the body was received at the University of Sydney, it was sent to the Australian Museum as part of a formal exchange agreement authorised by museum director Robert Etheridge. After mounting by the museum taxidermist, the specimen has often been on display (pl. 5).

Post cranial articulated skeleton of Haswell's thylacine M498 Macleay Museum, University of Sydney.

This skeleton was retrieved from the Australian Museum specimen M1674 during its preparation as a mounted specimen. The skull was retained within the mount. This partial skeleton is usually displayed with an unrelated skull M1427 positioned to depict a complete thylacine skeleton (pl. 6).

Dissected reproductive tract: MA 840. Series of 200 microscope slides: MS 464 JP Hill Collection, Museum für Naturkunde, Berlin.

Initially, the dissected reproductive tract was kept in Hill's collection at the University of Sydney. Hill left the university in 1906 for a position at University College London taking his research specimens, photographs, field notebooks and microscope slides (pl. 7A) with him. He remained in London until 1966 when these items were transferred (on permanent loan) to the world-renowned Hubrecht Collection at the Netherlands Institute for Developmental Biology in Utrecht (Richardson & Narraway 1999). In 2004, the Hubrecht Collection was transferred to the Museum für Naturkunde in Berlin.

In August 1980, the dissected reproductive tract was discovered by University of Queensland marsupial reproduction researcher Dr R Leon Hughes at the Hubrecht Laboratory in the Netherlands (pl. 7B). A label (transcribed below) held in the specimen jar recorded the collecting date as '5.VIII.02', and after finding an entry in Hill's 1902 Dasyurus notebook (pl. 8), the provenance along with Hill's original observations on the specimen, were discovered:

THYLACINUS CYNOCEPHALUS female from A Morton Hobart Rec. 5.viii.02	
Pouch	greatest length (interior). 20.5 cms
	greatest breadth. 19 cms
Aperture of pouch	11 x 8 cms directed down and back
4 teats	2 large anterior right with length of 5.5 cms, left with length of 5 cms
	2 small posterior

PLATE 6 — MM M.498, articulated skeleton (M498) from Haswell's thylacine with unrelated skull. The skull was retained in the mounted specimen, so the skeleton is usually displayed with an unrelated skull (M1427) to make it look 'complete'. (Image Macleay Museum, University of Sydney.)

PLATE 7 — **A** Microscope slides prepared by R Leon Hughes in 1980 from JP Hill's specimen dissection MS 464; **B** Reproductive tract of specimen MA 840. (Images Fiona Mohrle, Universität Potsdam)

The notebook also records the existence of a much earlier specimen that had been held in the Hunterian Museum at the Royal College of Surgeons in London obtained from an animal that died in London Zoo in January 1870. It was a preserved preparation of female organs of *Thylacinus* recorded as: '2734 I (Hunterian Institute 9.2.77). Female organs of Thylacine (*T. cynocephalus*). Adult female received 27 January 1870. Zoological Gardens.' This specimen no longer exists. It was destroyed during a bombing raid in 1941 (Hughes 2000).

The focus on pouch morphology recorded in Hill's notebook validates the view that Hill was involved in the dissection and may have organised for the mother to be photographed after dissection, but in a way that reveals the pouch area. When the reproductive tract was examined by Hughes in 1980, he noted that it had been roughly dissected out, along with the entire urogenital system, including the cloaca and surrounding fatty mesenteries (Hughes 2000).

The photograph of the thylacine with its leg raised (pl. 1C) was enhanced but not altered to enable better examination of the pouch area and the dissection. This was done by zoologist Tammy Gordon who is familiar with marsupial gross anatomy and has over 30 years of experience dissecting and handling mammals at the Queen Victoria Museum and Art Gallery in Launceston. Her report states that:

> *… the area around the pouch has been opened up and some deeper internal structures have been removed. At the bottom of the image what appears to be the inner surface of the pouch can be seen with nipples (two large and two small). Towards the top of the image is a groove surrounded by outward facing hair that could be the actual aperture of the pouch.* (T Gordon, pers. comm. 5 July 2025)

The rough nature of this dissection clearly damaged the pouch structure and may explain why there is little evidence of a pouch in the mounted specimen.

In 1980, Hughes examined the dissected specimen in detail and published his findings in the *Australian Journal of Zoology* (Hughes 2000). He noted that the general plan of the reproductive tract followed that of other marsupials, only differing in several details from that described by Pearson and De Bavay (1953) who had based their descriptions on more immature and less well-preserved pouch young. Hughes' microscope slides prepared from his dissection are now held with the specimen in Berlin but registered separately with the number MS464. Hughes' research and dissection of the specimens found that the animal was in a state of anoestrus, had two young, and was probably in the terminal lactation phase of a cycle (Hughes 2000).

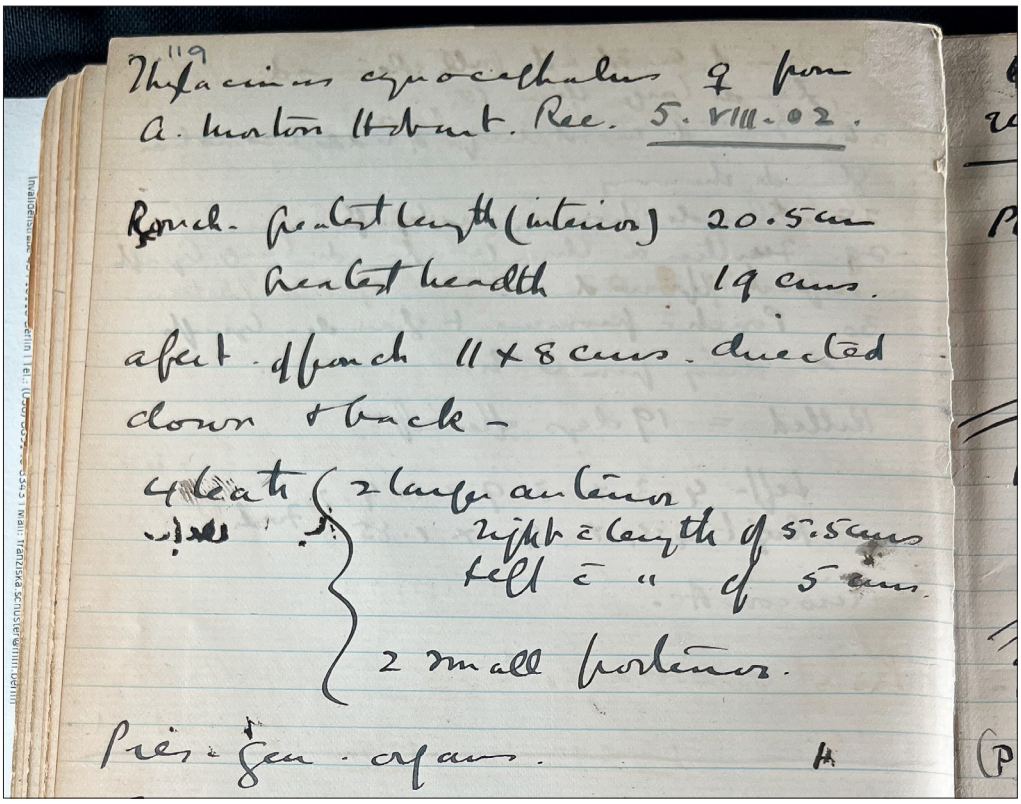

PLATE 8 — A page from JP Hill's notebook records that the adult female thylacine had been acquired from Alexander Morton on 5 August 1902. (image Fiona Möhrle, Universität Potsdam)

WAS THIS A BOUNTY ANIMAL?

The thylacine was sent to the Tasmanian Museum by Dr Walter Tofft, the municipal warden for Campbell Town in the Tasmanian Midlands. He was one of two local people permitted, between 1888 and 1902, to verify thylacine kills and to issue certificates against which reward payments were made by the Government. Without a verified and authorised claim form signed by a council warden or stipendiary magistrate, payments could not be made. It is very tempting to conclude that this thylacine was the victim of a bounty kill simply because Dr Tofft, an authorised warden, was the donor. When the bounty was first introduced, a condition of receiving a payment stipulated that the bodies had to be destroyed to prevent a second claim being made. This understandably annoyed museum director Alexander Morton who feared losing valuable specimens. After contacting the Minister for Lands and offering that the museum should be able to pay for the reward, the Minister for Lands approved the request and sent a memo outlining the new arrangement to all municipal councils (Braddon 1888).

In 1901 (the year before Tofft's donation) Alexander Morton had been sent a thylacine by Ross Council Clerk, Mr HA Percy, only a short distance south of Campbell Town. Upon its receipt, Morton discovered that young thylacines had been removed from the pouch and discarded, he wrote to inform Percy that young should be kept in the pouch 'no matter how small' (Morton 31 May 1901).

In a list of thylacine bounty claims compiled by University of Tasmania zoologist Dr Eric Guiler, there is no record of an adult thylacine with two young being presented at Campbell Town in July 1902 (Guiler 1958). Nor has such a claim been identified by historian Dr Nic Haygarth who has been updating bounty claim records and has identified a claim that can be attributed to this animal. A bounty payment was made for an adult and two juveniles to WJ Freeman of Benham, Avoca. Freeman lodged this application on 2 August 1902, and payment was made on 9 August 1902 (N Haygarth, pers. comm. 13 April 2025).

Benham was a large farming estate near Avoca. The estate workers were accommodated in a large house on the property called 'Harrymount'. When Freeman died, his funeral notice records that he had worked on the Benham estate as a young man, before becoming the estate carriage driver (*The Mercury*, 28 July 1938, p. 11).

Guiler (1958) also lists the same claim with the same dates by WJ Freeman but gives the location as 'Antill Ponds'. Both claims were for one adult and two young, and both were paid on 2 August 1902. It can be safely assumed that both records are of the same events and that the Benham record is correct.

Tofft appears to have acquired the thylacine around this time, and forwarded it and the pouch young to the museum. Morton registered the pouch young, but without knowing an exact capture date, or of Freeman's claim of 2 August, could only guess they were from a July capture and thus this vague date was recorded in the register.

A discrepancy between capture and claim dates is not uncommon in the known bounty records. To make a claim, the claimant needed a form signed by a magistrate or warden

and a signed statement verifying that the specimen had been destroyed (a task that was usually done by a council worker) (RN Paddle, pers. comm. May 2025). Paddle (2000) cites the example of a bounty claim by R Marshall who killed a thylacine on 4 February 1888, but his claim was not approved until 8 September 1888 (Paddle 2000, p. 166), probably due to administration problems as the bounty was only newly established at this time. Likewise, a kill dated as 28 November 1898 was not paid until 15 February the following year (Guiler 1958).

WJ Freeman's bounty claim was lodged on 2 August 1902 at Avoca, only 25 km from Campbell Town and within the district of Tofft's medical practice. The delay in recording the kill in Guiler's bounty data for July 1902 is most likely explained by Tofft awaiting notification from the museum that they had received the thylacine, and therefore the specimen could not be submitted for a second claim. After this, certification of the kill could be confirmed on official bounty documents thus ensuring that the body (although the body had not been destroyed, and had been sent to Haswell), was no longer available to anyone who might be tempted to claim a second bounty. To date, records of any correspondence between Morton and Tofft regarding specimens have not been found in the TMAG archives.

A further problem was the ruling that bounties were only to be paid for 'full grown', or 'half grown' thylacines (Braddon 1888). Paddle has discovered several instances where paying money for young in the pouch was refused and angered hopeful claimants (RN Paddle, pers. comm. 2025). Given the size and sparse fur covering on specimen A930, it is highly unlikely that it could survive outside of the mother's pouch; however, perhaps the large size of the two young influenced a decision to pay for them along with their mother.

One final error in the records is that on arrival at TMAG, the collecting location is listed as Campbell Town. This anomaly is most likely because Tofft was the municipal warden for Campbell Town (not Avoca). Tofft could only certify kills as the Campbell Town warden, therefore Morton assumed it was captured around Campbell Town.

There are still many questions regarding the proposition that this was a bounty animal that remain unanswered.

- Was Tofft already aware of Morton's desire for thylacines to be sent to the museum?
- Did Tofft know that pouch young should be left in place for museum specimens, even though bounty payments were not supposed to be paid for juvenile animals?
- Did Tofft delay signing the bounty claim until he knew the thylacine was accepted by the museum, and saw museum donation as part of the requirement to dispose of its body as per Government regulation?

SUMMARY AND AFTERLIVES

All five museum specimens (taxidermic mount, skeleton, pouch young, dissected organs and microscope slides) were derived from a single thylacine with young captured and killed in 1902 and subsequently shared between researchers and institutions at a time when thylacine specimens were hard to obtain. Apart from the female pouch young that was registered into the TMAG collection but later dissected for research, all have survived to the present day. They were acquired by their respective museums 34 years before the accepted extinction date of 1936, but the specimens still survive more than 123 years after being collected.

The author's detailed knowledge of the history and contents of the TMAG thylacine collection and the discovery, for the first time, of a link between Dr Tofft and Professor Haswell in the TMAG TM2 Register provided the first clue and led to the specimens being linked to a single collecting event. Each individual thylacine specimen described in this paper has been known for many years, and some have been the subject of research. However, due to a lack of a verified provenance, it was not known that these five specimens only represent a single capture and kill event.

All natural history museum specimens and their data are available for professional research. Currently research into recently extinct species is helping form a deeper understanding of the processes that led to extinction. And hopefully this will help in the prevention of others. This is increasingly important as humans grapple with the rapidly growing number of extinctions across the world, the ramifications of increasing human populations and global climate change. Without a full understanding of extinction processes, and their consequences, strategies to prevent further extinctions are difficult to accurately determine and implement.

There is no doubt that the thylacine is a hugely important icon of anthropogenic extinction. The study of specimens and their data held in museum collections, especially specimens with reliable provenances, can go a long way to assist conservation scientists to understand the ramification of a species' ecological role in the past and the effect of its absence on current species assemblages. For raw data to reconstruct population estimates and changes in historical species distribution, museum specimens are a huge source that is only just beginning to be tapped. Many historical specimens still lack any useful provenance data (apart from an identification) and their suitability as specimens to determine the effects that population decline may have had on a species may therefore be compromised.

This small project provides an example of the patient and persistent methodology required to accurately determine provenance for historical museum specimens. It involves a lot of work and time and sometimes is not possible due to a lack of written records exacerbated by changes in collection management and registration systems over many

years. However, for specimens where the data is being used to analyse extinction processes and timing, the value of datasets and their usefulness in contemporary research is increasing, thereby enhancing the veracity of the results.

In contrast to other known photographs of dead thylacines, these three images do not celebrate the animal's death or turn it into a hunter's trophy. They simply record the features of a dead animal about to be dealt with by a museum taxidermist whose task it was to re-create a life-like depiction for the public, and thus ensuring the story of this human-induced extinction remains relevant into the future.

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