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The death adder *Acanthophis antarcticus* (Shaw & Nodder, 1802) in Victoria: historical records and contemporary uncertainty

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Abstract

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The south-eastern distributional limit of many Australian species coincides with northern, and sometimes far-eastern, Victoria. In the mid-19th century, Blandowski's Lower Murray Expedition sought to study the natural history of this area, specifically north and north-western Victoria. The expedition collected many specimens that are now registered with Museums Victoria, including species that are now extinct, extinct in the state or greatly reduced in distribution. During the expedition, a specimen of the death adder *Acanthophis antarcticus* was collected at Lake Boga in north-western Victoria. During the 20th and 21st centuries, there has been debate about whether this species persists in Victoria. We review early records of this species, including voucher specimens held by Museums Victoria, one of which we confirm as the specimen collected during Blandowski's Lower Murray Expedition. We also explore recent claims of sightings of this species in Victoria. We collate names for the death adder used by Aboriginal people in northern and north-western Victoria. Death adders undoubtedly occurred in north-western Victoria in the 19th century and were known to the Aboriginal people, but it is probable that they no longer occur in that part of the state. It is possible that death adders persist in far East Gippsland, east of the Wallagarough River, although no substantiating material, such as photographs or specimens, has been collected in that area.

Keywords

Gerard Krefft, Blandowski Lower Murray Expedition, voucher specimen, venomous snake

Introduction

The death adder *Acanthophis antarcticus* is a distinctive and iconic venomous snake found over much of eastern and southern continental Australia, except for the cooler parts of the south-east (Cogger, 2014, fig. 1). The south-eastern limit of the species' distribution is generally accepted to be in or abutting northern Victoria and far East Gippsland. The pre-eminent national guide to the herpetofauna of Australia since the 1970s is *Reptiles & Amphibians of Australia* by Harold Cogger (1979). Early editions of this book described the species' distribution as "throughout continental Australia, except central desert regions and wetter parts of Vic and south-eastern NSW" (Cogger, 1979, p. 373), and the accompanying map included the species in far north-western Victoria. However, the latest edition (Cogger, 2014) describes this part of the species' range only as "through parts of

southern and south-eastern Australia", and the accompanying map no longer includes north-western (or any) parts of Victoria (p. 856). There are few reliable accounts of the species' occurrence in the state (the species is listed as Data Deficient by the Department of Sustainability and Environment, 2013), and there is uncertainty about the provenance of the three specimens held by Museums Victoria that are labelled as being from Victoria. We sought to document references to death adders in Victoria from the literature, review the provenance of putative Victorian death adder voucher specimens in the collection of Museums Victoria and, lastly, review selected verbal accounts of death adders from Victoria.

Acceptable records of the death adder in Victoria

Voucher specimen from Blandowski's Lower Murray Expedition (1856–57)

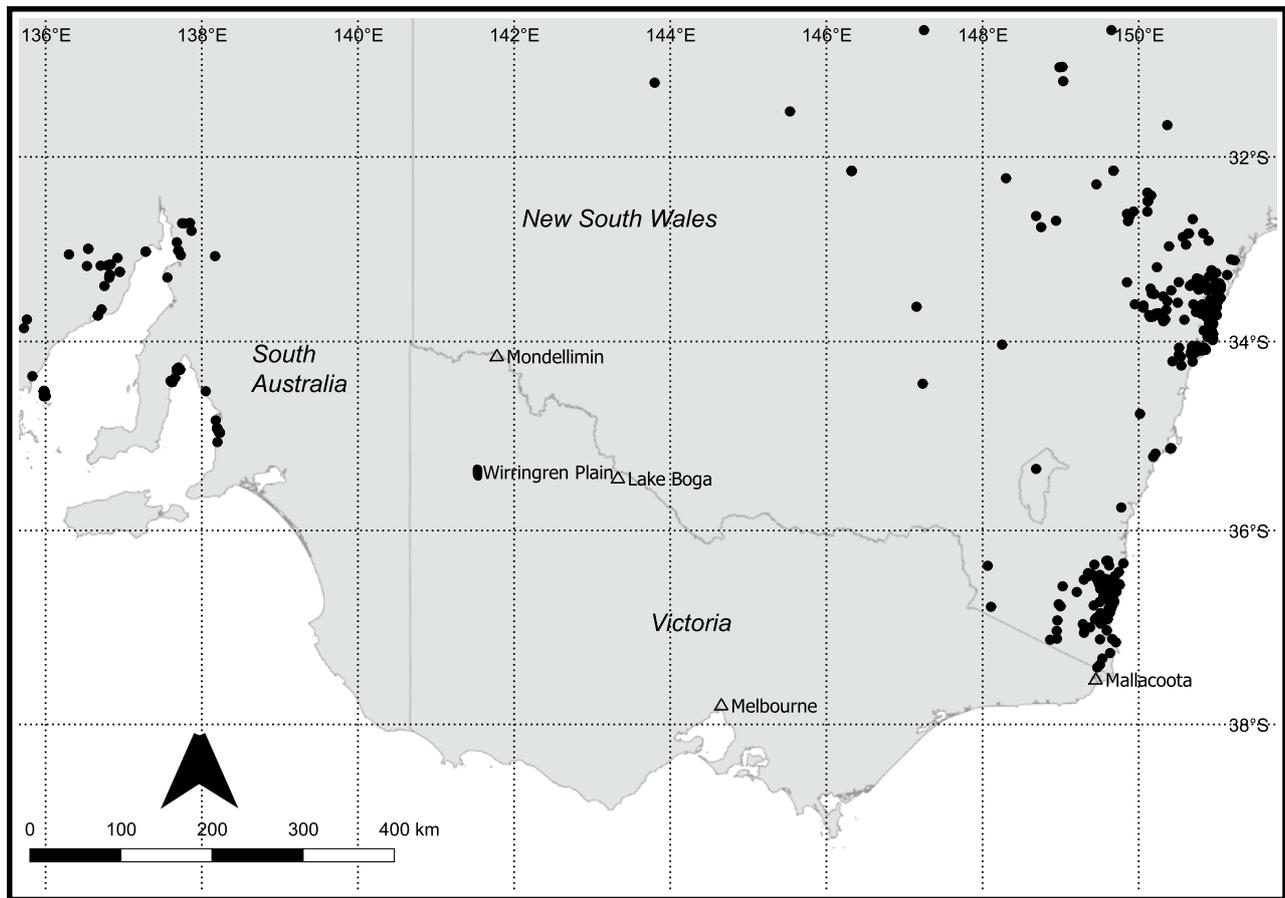


Figure 1. South-eastern Australia, showing records of the death adder *Acanthophis antarcticus* (black dots; Atlas of Living Australia, year) and key localities discussed in the text.

The occurrence of the death adder in Victoria was confirmed during Blandowski's Lower Murray Expedition in the mid-19th century. Confirmation came "from the diary of Gerard Krefft who, in 1856, drew the head and the tail of a specimen from Lake Boga" (Coventry and Robertson, 1991, p. 22; however, see below for a correction to the year of this record). Our recent re-examination of the relevant text in Krefft's narrative (which is not really a diary *per se*) hinted at the possibility of there being more information regarding this record and prompted a re-evaluation of this species in Victoria.

Krefft (c. 1858) provides a rather detailed description of the finding, capture and documentation of this snake in 1857, the day after the expedition arrived at the Lake Boga Mission Station:

Sunday Morning the 8th of March found us busy as ever for Mr Blandowski begged of us to remember the holy day we had the night before which as usual silenced all opposition. I had been up early and was busy transferring a toad to paper which I had caught when my attention was roused in repeated "queeing" (a loud noise used in the bush to call at one another). First I took no notice of it but the Captain told me to see what was wrong and so I left the hut.

I found our Cook in the deserted garden of the mission wrangling with a snake, the head of which he had secured to the ground like a sensible fellow with a forked stick. He informed me that he had been looking for some tomatoes and lifting one of the bushes he nearly touched the snake. A stick with a prongue to it was soon found and there he was.

I took charge of the reptile and told him to report to the Captain who immediately came up to the field of action and gave directions to take the snake alive. Now I have had a great deal of experience in snakes and secured many a one alive, but as the specimen in question was to all appearances a Death Adder, supplied with a poisonous sting on the end of the tail; I did not like to take it up. So after a few words with the Captain, I asked him to show me how to catch it, which he instantly did by taking hold of the snake behind the jaws. I had tied a bit of cord around the tail to prevent the snake from making use of it and so we carried the ugly customer to the hut. Mr Bl made several vain attempts to pass the snake off on myself but as I thought that he had a good grip of it, I begged to be excused. We pinned it down on a board as I set immediately to work to secure its colours while alive. I might

as well state here a fact often observed, that every snake or part of a snake, however mutilated will live until the sun goes down and though the neck had been cut through this snake lived until evening.

Our commander considered the reptile to be a new species which I doubt as it is by all appearance Brown's Death Adder. Having made a minute drawing of it I am able to describe all its peculiarities. It measured about 30' and was rather thick in proportion to its length. The head flat and the scales distributed in the same manner as in most all other Australian snakes. Of a Brown colour, all the scales on the back were divided or riveted vide sketch in the margin. The borders of the scales on the head turned upwards. The belly was of a pale pink colour with the side scales dotted with darker pink spots not unlike those which the edges of books are ornamented vide sketch. From the abdomen to the end of the tail about 5', the tail all at once becoming very thin. The specimen is now in the Melbourne Museum although much destroyed by the dirty fluid in which Mr Bl attempted to preserve his specimens.

Blandowski (1858) mentions an incident that probably relates to this encounter: "At Lake Boga I was exposed to some danger in presence of my men, by a very poisonous snake, on which I had inadvertently placed my feet" (p. 135). The statement in the final sentence of the excerpt from Krefft's narrative – that a specimen had been lodged with the Museum in Melbourne – aroused our interest. cursory inspection of the death adders in the Museum's collection immediately revealed the most promising candidate, specimen D4349 (fig. 2). The label on the jar that holds this specimen mentions a date and locality that approximates the era and localities of the Lower Murray Expedition: the "Banks of the Murray" in 1859. The Lake Boga Moravian Mission Station was established by German missionaries Brother Andrew Frederick Charles Taeger and Brother Frederick W. Spieseke on the south-eastern shore of Lake Boga in 1851 and abandoned on 27 May 1856 (Kenny, 2003, which contains a sketch of the mission location on page 104). This location is approximately seven to eight kilometres south of the Murray River, and a little over five kilometres south of the Little Murray River channel (fig. 1).

Two other features of specimen D4349 accord well with Krefft's narrative. First, the length of the snake was estimated by Krefft to be "about 30" inches (this measurement is repeated on Krefft's illustration of the Lake Boga adder, pencilled adjacent to the full-body image). Using a piece of string to run along the body of specimen D4349, we measured its total length at 728 mm (28.7 inches), consisting of 635 mm (25 inches) snout to vent and 93 mm (3.7 inches) tail length. However, the tip of the tail has been lost, either deliberately cut off or broken, since collection (fig. 3). Given Krefft's concerns about the "poisonous sting on the end of the tail", it is plausible that the tail tip was removed while the snake was being processed by Blandowski and Krefft. With a complete tail, this specimen would be very close to 30 inches in total length and the tail would be very close to the five inches mentioned by Krefft. Second, Krefft notes that "the neck had been cut through". Specimen D4349 has an obvious broad wound on the dorsal surface of the neck (fig. 4). Certainty that this is the

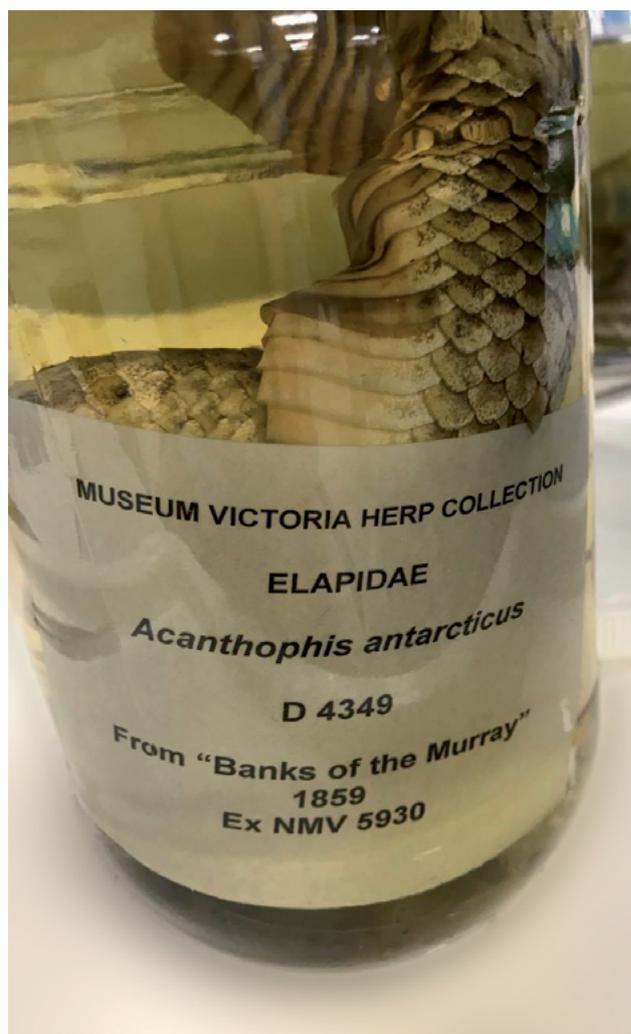


Figure 2. Specimen D4349, a death adder *Acanthophis antarcticus* in the collection of Museums Victoria.

death adder collected at Lake Boga in 1857 required careful comparison with the detailed and accurate illustration prepared by Krefft on the day the snake was captured.

Krefft's illustration of the death adder is held in the collection of the Historische Arbeitsstelle (Historical Collections department) at the Museum für Naturkunde, Berlin (reg. no. MfN, BVIII / 56). The illustration (fig. 5) is in pencil, ink and watercolour, and includes an image of the whole animal, with details of the head and tail along with some short explanatory notes. It is clearly by Krefft's hand and in his style (Stranks, in prep.).

Krefft's illustration was retained by Blandowski among the bound portfolios of illustrations assembled during his time in Australia, and it would have stayed with Blandowski during 1857 to 1859 while he was back in Melbourne after the Lower Murray Expedition. Although all of the natural history specimens collected during the 1856–57 Lower Murray



Figure 3. The truncated tail tip of death adder specimen D4349 (left) compared with the full tail tip of specimen D3579 (right).



Figure 4. Dorsal perspective of the head and neck (including neck wound) of specimen D4349.

Expedition were lodged at the National Museum in Melbourne, Blandowski retained possession of most of the illustrations and papers pertaining to the expedition (including the death adder illustration); he was eventually granted permission from the Victorian Government to retain this material for further study, and it went with him to Europe in March 1859 (T. Stranks, unpublished data).

Blandowski's portfolios returned with him to his hometown in Gleiwitz, Upper Silesia (now Gliwice, Poland) in 1860

(Darragh, 2009). They were part of the collection that stayed with Blandowski's family in Gleiwitz after he was committed to the Bunzlau mental asylum in September 1873. Not long after Blandowski's death in December 1878, his sister Clementine donated the collection to the Königliche Bibliothek zu Berlin (Royal Library, Berlin) in August 1881. The natural history-related material from the collection was eventually transferred to the Zoologisches Museum in Berlin in a series of moves in 1882, 1884 and 1885 (and has remained with that institution, which is now known as the Museum für Naturkunde; see Darragh, 2009; Landsberg and Landsberg, 2009).

We have a high-resolution version of the illustration (200 MB TIF / 17 MB JPEG; fig. 5), which allows the fine detail of the illustration and annotations to be seen. Consequently, we can read Blandowski's handwriting in pencil with "Lake Boga" (bottom left), "sehr giftig, nur 2 bis 2 1/2 ' lang" (very poisonous, only 2–2.5 feet long; bottom right), and Krefft's handwriting, with "Snake A" and "30 inches" (centre right) and "Death Adder" (bottom centre).

On 17 July 2017, we compared Krefft's illustration with the following six specimens of death adder from the collection at the Melbourne Museum: D3579, D51857, D15392, D15394, D76869 and D4349. These specimens were chosen because their labels suggested that they might have come from Victoria, or their collection locality is not mentioned on the label of the receptacle in which they are kept at the Museum (i.e. all the other death adder specimens in the Museums Victoria collection are labelled as being collected from other states). Using a stereomicroscope, we examined details of scalation and colour, primarily on the ventral surface of the heads of each snake, comparing them to the illustration. Scale and colour were highly variable between specimens. D4349 was the only exact match for the illustration of the death adder from Lake Boga, confirming beyond doubt that this was the specimen collected in 1857 by Blandowski, Krefft and the expedition's cook (fig. 6, which includes images of the two



Figure 5. Illustration by Gerard Krefft of the death adder collected at Lake Boga in north-western Victoria on the 8 March 1857. (Photograph by Rebecca Carland; Museum of Natural History Berlin. Historical collection of pictures and writings. [Sigel: MfN, HBSB.] Bestand: Zool. Mus. Signatur: B VIII/56.)



Figure 6. Ventral view of the head scales of Death Adder specimens from Melbourne Museum, and close up of Gerard Krefft's illustration of the ventral head scales of the Death Adder collected at Lake Boga in 1857 (bottom right). Top left is specimen D3579. Top right is D51857. Bottom left is D4349.

other death adder specimens with “Victoria” on their labels, allows comparison of the three specimens with Krefft’s illustration and shows that only D4349 is a precise match for the snake collected at Lake Boga in 1857).

There are minor discrepancies around the dates of this record. Coventry and Robertson (1991) state the year of the record as 1856; however, this was the year that Blandowski’s Lower Murray Expedition commenced (departing Melbourne on 6 December 1856; Allen, 2009a; Darragh, 2009), and Krefft’s narrative is clear that the death adder was found and captured on 8 March 1857. Specimen D4349 is labelled in the old National or Public Museum register as dating from 1859. Although two years later than the collection date of the Lake Boga adder, it is plausible that either the final digit of the date was transposed incorrectly (the handwriting of the digit 7 in the museum register resembles a 9 to some degree) or – more likely – that the more recent date represents the date the specimen was registered or catalogued at the museum. Many of the collections from Blandowski’s Lower Murray Expedition in the Museums Victoria collection were simplistically labelled and registered as coming from the “Junction of the Murray and Darling Rivers” (the expedition’s official destination), even for specimens collected considerable distances from the location (Wakefield, 1966); the date given in the register is often the date of registration rather than the date of collection (discussed by Wakefield, 1966). The collection from Lake Boga and Mondellimin, the expedition’s camp (now known as Chaffey Landing, near Mildura; fig. 1), would have arrived in Melbourne by mid-1857. By this stage, the Public Museum was under Frederick McCoy’s control, and was located in the north wing of the Quadrangle Building at the University of Melbourne. The material may have been stored there, largely unworked, until further sorting took place in readiness for the Museum’s first collection registration system in c.1858–1859.

Alternatively, perhaps due in part to his feud with McCoy (Allen, 2009a), Blandowski was loath to hand over specimens to the Museum, instead transferring them to his private lodgings (Pescott, 1954, cited in Wakefield, 1966). Allen (2006) states:

In 1858, Blandowski received a letter from the Surveyor-General requesting him to surrender all drawings and memoranda relating to the Natural History of the country, made during the period he held an appointment in the Government Service. Blandowski’s reply states his position, “I deny ... the justice of this demand, and as I regard these papers and drawings my private property, I must decline to allow them to pass out of my hands” (Paszkowski 1967:160, quoting Blandowski letter of 23 November, 1858) (p. 33).

Thus, it is plausible that Blandowski begrudgingly released specimens over the period spanning his return from Mondellimin and his departure for Germany in 1859, perhaps resulting in the specimen now labelled as D4349 not entering the collection until 1859.

Interestingly, Krefft perpetuates two myths about snakes in his narrative. Krefft was a knowledgeable zoologist, so his belief that it is “a fact often observed, that every snake or part

of a snake, however mutilated will live until the sun goes down” is odd for an experienced collector who had presumably killed and prepared many reptiles. Less surprising (for the era) is Krefft’s belief that death adders have “a poisonous sting on the end of the tail”. By the mid-19th century, the European colonisers still had much to learn about the biology of many Australian species, and the specialised tail of the death adders was clearly believed to be a venomous adjunct to the snake’s fangs (the tail tip of death adders usually has a terminal spike that resembles a venomous sting; fig. 3). Death adders use their specialised tails to lure small vertebrate prey, and early observers who witnessed the outcome for animals lured to the snake’s tail may have believed that the tail indeed contained a venomous sting. However, Krefft later corrected this fallacy in his book on Australian snakes, where he states that the tip of the death adder’s tail, “which is so much dreaded by many persons, is neither a weapon of attack or defence” (Krefft, 1869, p. 80).

Intriguingly, the text on the receptacle holding specimen D4349 is a precise match for the words used by another natural history illustrator from that period in relation to some snake specimens. Ludwig Becker was the artist and naturalist who accompanied the Burke and Wills exploring expedition in 1860–61, and he wrote the following letter (held in the collection of the State Library of Victoria) to Dr John Macadam (Honorary Secretary of the Royal Society of Victoria’s Exploration Committee) while the expedition was staying at Camp 15 at Swan Hill on 8 September 1860, regarding a bottle of three snakes to be donated to the Museum by Dr Benjamin Gummow (doctor at Swan Hill from 1857–72):

Camp at Swan Hill
Sept. 8. 1860
To Dr J Macadam MLA
Hon. Secretary
Royal Society in Victoria.
PS. By this mail I have the honor to forward to you a bottle containing 3 snakes presented to the Museum by Dr Gommow [sic] of Swan Hill. The 2 larger snakes were found near Swan Hill on the Banks of the Murray, the small one in the Mallee Scrub, 40 miles from Swan Hill, but still in Victoria.
I have etc.
L Becker.

The words “Banks of the Murray” is a match with the details in the specimen register for D4349, although it is plausible that “Banks of the Murray” may have been like “the Junction of the Murray and Darling Rivers”, a term used in that era to describe various locales in northern Victoria close to the Murray River (see Wakefield, 1966).

Becker does not appear to have illustrated these preserved specimens from Swan Hill (or illustrated any death adder from the Burke and Wills expedition), but he does provide another illustration and short accompanying note of a live specimen of death adder (unknown locality and date, but presumably from around the same region and period):

Deaf [sic] adder, 1/5 nat. size, full grown, whole length exactly 3 feet, greatest diameter 2 ½ inches, colour of upper part of head and body: brown, with transverse bands (about 30) of a lighter tint; under part pale yellow. Scales spined. Spine on the end of tail sometimes half an inch long. The one I killed crossed the road in front of my horse and moved slowly towards the grass, and when attacked by me with a stick, rose in self defence, resting upon the broadest part of his body. L. Becker.

Becker's pencil, ink and watercolour illustration and hand-written note can be seen online at the website Caught and Coloured: Zoological Illustrations from Colonial Victoria (Kean et al., 2006). Becker later transformed his illustration into a beautiful lithograph for McCoy's *Memoirs of the Museum*; this was never published, but the illustration eventually appeared as Plate 12 in the *Prodromus of the Zoology of Victoria* (McCoy, 1878). Becker's information provided much of the source information for McCoy's account of the species, which McCoy said was restricted to "hot tracts near the Murray River" (p. 12).

William Lockhart Morton's death adder record (1861)

William Lockhart Morton provided an account of finding and killing a death adder on the eastern edge of the Big Desert, west of Pine Plains and Patchewollock, in July 1861 (the locality description by Morton notes entering Wirringren Plain, then turning west, crossing the plain over four miles before he began to "mount the acclivity of the sandy desert country" where he found the death adder "on the sloping bank on a spot exposed to the warm morning sun"; Morton, 1966, p. 43). After killing the snake, Morton cut off the "tail-like prolongation", which he later examined under a microscope, noting that "the reputed sting appears blunt, and though a dark line runs along it, giving it seemingly the character of a tube, no opening at that point can be detected. It is by its bite that the death-adder proves so instantaneously destructive to animal life" (Morton, 1966, p. 44). Morton notes that his "companion, who had resided for eight years in South Africa, remarked that this specimen bore a strong resemblance to the puff-adder of that country" (p. 43).

Other claimed Victorian records of the death adder

Voucher specimens

As well as the Lake Boga adder, there are two death adder voucher specimens in the collection of Museums Victoria that are labelled as being from Victoria (fig. 6). One of these specimens (D51857) was given to the Museum by Steve Wilson but was not collected in Victoria (email from Steve Wilson to JM, 16 May 2017).

According to the hand-written specimen register, death adder specimen D3579, with the locality listed only as "Victoria", was lodged with the Museum by "Prof. Halford 23/7/1878". George Britton Halford was a British anatomist and physiologist who founded the first medical school in Australia at the University of Melbourne. From 1866, Halford conducted research in Melbourne on the effects of snake venom, inducing snakes to bite dogs, cats and pigeons

(Hobbins, 2013). After experimenting with animals, by 1868 Halford (who believed that venom comprised living germinal matter) began trials using injected ammonia as an antivenom (Hobbins, 2013). This treatment remained in use for some time (*The Victorian Naturalist*, Vol. IX, No. 1, 1892, p. 2, under 'Exhibition of Specimens' reports a death adder collected at Mondual, NSW, "after having bitten Mr. J. M. Simson, of Toorak, who was successfully treated with strychnine and ammonia"). Given his research using Australian elapid snakes, it is probable that specimen D3579 was in Halford's possession for this purpose. In his account of the death adder in the *Prodromus of the Zoology of Victoria*, McCoy (1878) states that: "a large dog bitten by a captive Death Adder in one of Dr. Halford's experiments was dead in 18 minutes", confirming that at least one death adder was used by Halford. It is likely that Halford was supplied with snakes by others. Even in the 19th century, death adders had a restricted distribution in Victoria, and it is unclear whether or not specimen D3579 was collected in Victoria.

Further references to Victorian death adders in the literature

References to death adders in Victoria in the literature show that death adders were an accepted component of the Victorian fauna by the late 19th century; however, these references do not add any more specific, substantiated records than those discussed above. Kreffft (1866) again mentions the death adder collected during Blandowski's Lower Murray Expedition by stating: "of this highly venomous snake, I obtained but a single specimen at Lake Boga; it brings forth about 10 or 12 young" (p. 31). McCoy (1878) states that death adders were "not found in the southern parts of Victoria, but common in the hot tracts near the Murray" (p. 12). A poster presenting the *Dangerous Snakes of Victoria*, produced in 1877 by the Museum and the Education Department for distribution to all Victorian schools and railway stations, features the death adder along with another four species of well-known venomous snakes that remain abundant in Victoria (fig. 7). A second edition of this poster, containing the same five species with updated illustrations that were more life-like, was produced in the 1890s (<https://museumvictoria.com.au/caughtandcoloured/deadoralive.aspx>). McCoy (1867) notes that, in Victoria the death adder was "confined to the northern boundary" (p. 182). Le Souef (1884) lists the "Death or Deaf Adder" (p. 87) in his *Catalogue of Victorian Fauna*. Soon after this, Le Souef (1887; based on a trip undertaken in December 1886) writes that near Lake Hindmarsh, "a farmer lately ploughed up six death adders when ploughing up new land, but they were not numerous, and we saw none, although a good look-out was kept ..." (pp. 44–45). It is possible that other snake species that occur in this area – in particular the Bardick *Echiopsis curta* – could be mistaken for death adders because they look superficially similar when posing defensively. However, given the relative proximity of this area to where Morton (1966) recorded a death adder in 1861, it is not out of the question that farmers ploughing this new land did indeed encounter death adders.

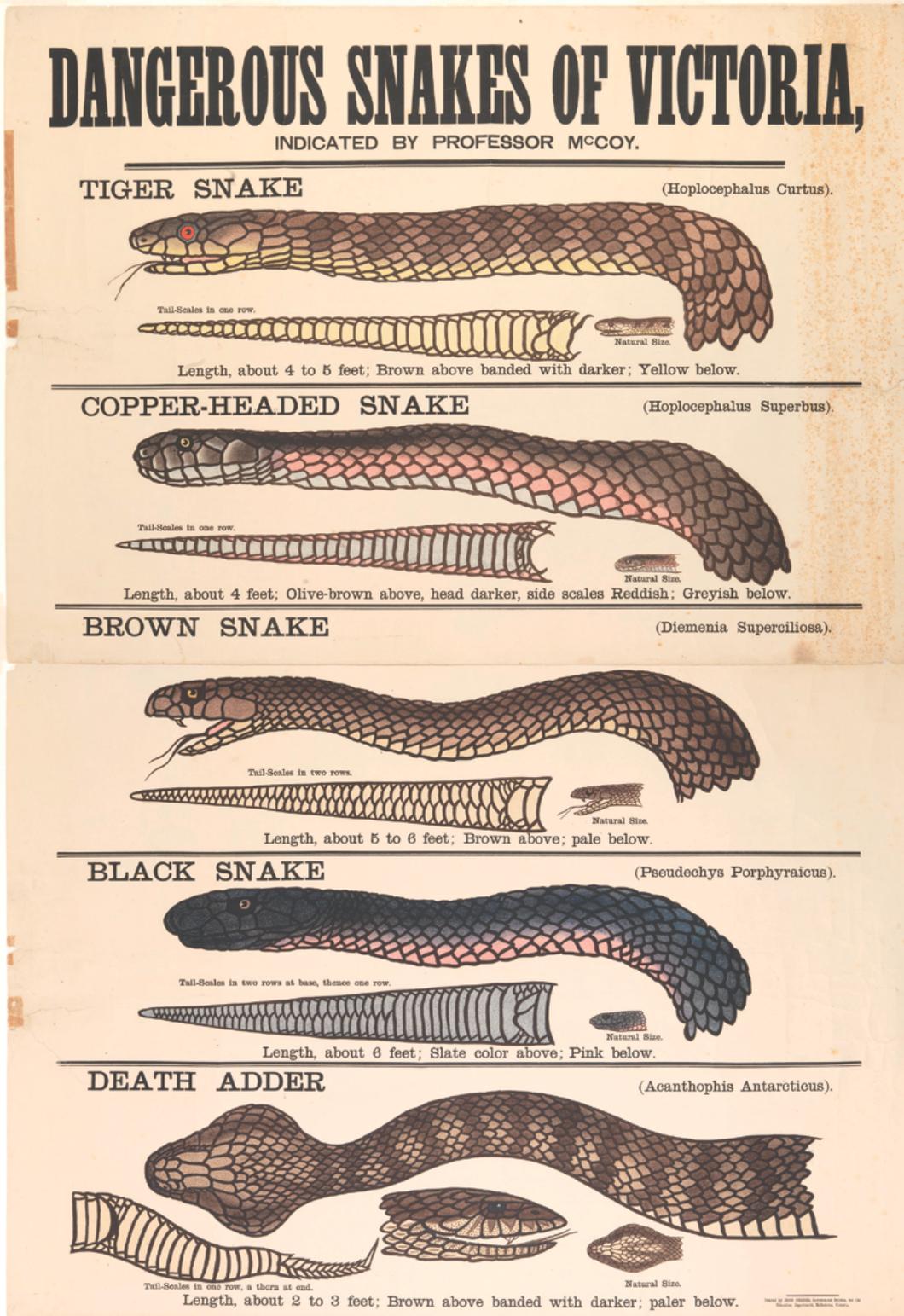


Figure 7. First edition of the *Dangerous Snakes of Victoria* poster, produced in 1877.

Early in the 20th century, French (1901), commenting on the fauna of the Victorian Mallee, notes that the death adder is one of the snakes of the region (although he did not encounter this species during the trip that forms the basis of his article) but “appears to be rather rare in Victoria” (p. 14). At around the same time, Best (1901) notes that “with respect to snakes, at our last meeting Mr. Le Souëf mentioned that in the Mallee the Death Adder was more numerous than is generally supposed, as owing to its sluggishness it is often passed over” (p. 93). Kershaw (1927) states that the death adder “in Victoria, is restricted to the dry areas of the north-west” (p. 337). Worrell (1963) states that death adders are “rare in Victoria” (p. 108); identical words are used by Gow (1976). Wilson and Knowles (1992) suggest that the species “penetrates Vic. only in far east and north-west” (p. 379), and their accompanying map reflects that statement. Wilson and Swan (2013) provide a distribution map but no description of the species’ range; however, they do report the death adder’s current status in Victoria (Data Deficient), with the Department of Sustainability and Environment (2013) being the source for this listing.

Aboriginal knowledge of the death adder in Victoria

Blandowski and Krefft worked with Aboriginal people during the 1856–57 Lower Murray Expedition (engaging them as guides, collectors and sharers of knowledge; Allen, 2009b), and at least one of the groups they encountered along the Murray River knew of the death adder. On his illustration of the death adder from Lake Boga, Krefft has added a note at the bottom about its Koorie name: *Pelletoak – Yarree Yarree*. *Pelletoak* was the animal name provided by the Yarree Yarree [Nyeri Nyeri] people who worked with the Blandowski Lower Murray Expedition at Mondellimin from April to December 1857. Blandowski and Krefft were in the practice of showing various animal illustrations to local Aboriginal people along the way, trying to gather native names for particular species (Stranks, in prep.). *Pelletoak* appears to be a specific name for death adder (as opposed to a more generic word for snake such as *Cournvil* or *Cumvill*) recorded from the Yarree Yarree. This indicates that the species was known in the Mondellimin area at the time the expedition visited, although no specimens were collected there.

Krefft gave a talk on the “vertebrated animals” (he discussed mammals only) from the “Lower Murray Expedition” to the monthly meeting of the Philosophical Society of NSW on 10 September 1862 (reported in the Sydney Morning Herald, 24 October 1862, page 2). This was followed by a continuation of the former paper – a talk on the reptiles, amphibians and fishes from the Lower Murray Expedition to the monthly meeting of the Philosophical Society of NSW on 16 September 1863 (meeting report in the Sydney Morning Herald, 21 September 1863, page 13). In this second talk, the newspaper reports Krefft stating: “The Death Adder (*Acanthophis antarctica*) [sic], not very common, as I have never seen but one single individual at Lake Boga; there is no difference in the coloration of this snake from those inhabiting the east coast; the natives [at Mondellimin] never brought one though high

rewards had been offered” (p. 13). It is notable that the Aboriginal people did not collect a specimen of the death adder during the eight months that the expedition spent at Mondellimin. Perhaps the Aboriginal people could not find the species, or would not collect it because it was venomous and dangerous, or there was a cultural consideration such as a taboo that prevented them from harming or killing it.

It does not appear that Blandowski and Krefft worked with any Aboriginal people during their relatively brief stay Lake Boga in March 1857, so there is no record of a Koorie name for the species there. Curiously, however, there is another reference to the death adder at Lake Boga. Mr A. Chas. Stone worked as the baker at Lake Boga for more than 18 years, and was in close contact with the “Lake Boga tribe”, known as Gourrmjanyuk (meaning “along the edge of trees”; Stone, 1911, p. 433), from about 1890 to 1910. He published a paper on The Aborigines of Lake Boga (Stone, 1911) that has a list of Koorie names for animals, including ten varieties of snake, with the name “Llerk” for “Deaf Adder” (p. 446, noting the frequently used – and technically erroneous – variation on the common name). This paper was a primary source for the Wemba Wemba Dictionary compiled by linguist Luise Hercus in the 1960s (Hercus, 1992); she has listed an alternative spelling of “Lirrk” for death adder (p. 106).

Claimed sightings of death adders in Victoria in recent decades

Most claims of sightings of death adders in Victoria in the late 20th and early 21st centuries have been from either the far north-west or from the eastern tip of the state. After two credible reports from beside the Murray River in the far north-west, in 2005 two of us (PR and NC) led a brief survey in the area. Instead of death adders, that survey resulted in the capture of a snake previously unknown from Victoria: De Vis’ Banded Snake *Denisonia devisi* (Clemann et al., 2007). It appears that those most recent claims of death adders in the riverine area surveyed by Clemann et al. (2007) were actually mis-identified De Vis’ Banded Snakes.

In far south-eastern New South Wales there are death adder records east of the Princes Highway in Nadgee State Forest, less than one kilometre from the border with Victoria (Atlas of NSW Wildlife, accessed online, 28 May 2017; Swan et al., 2004; fig. 1). Most (but not all) claims of death adders in far East Gippsland are from east of Mallacoota Inlet. One of us (BodB) spent much of her life in Mallacoota, observing snakes in that area. BodB’s father – an experienced naturalist – has seen what he believes to be death adders in that area on two occasions; both observations, and the majority of others she has heard of, including some recent (2016) reports, were east of the Wallagaraugh River. The few potential sightings she is aware of that occurred west of the Wallagaraugh all occurred in the 1980s. No substantiating material such as photographs or a voucher specimen have been produced from eastern Victoria.

Death adders possess traits that predispose them to population losses (Reed and Shine, 2002). Because Victoria is the southern extreme of this species’ range, it is here that declines are particularly likely. Land use changes and the

introduction of stock animals and exotic predators associated with the push into northern Victoria by European people had a profound impact on native fauna, resulting in the extinction of some mammals (Menkhorst, 2009). These impacts were already evident to Krefft in the 1850s, and it is sobering to acknowledge that the ecocidal impacts of European incursion proclaimed by Krefft 160 years ago (Kean, 2009; Menkhorst, 2009) continue to this day. As well as the losses of mammals, it is probable that around this time there were deleterious impacts on various reptile species. Frequent burning of native vegetation on public land in the Victorian Mallee has resulted in changes to the fauna (Robertson et al., 2012); both the Mallee and far East Gippsland are currently subject to frequent fuel reduction burning, and death adders may be particularly susceptible to fire (McDonald et al., 2012; Smith et al., 2012).

The Mallee region is popular with natural historians, particularly ornithologists and herpetologists, and the fact that, despite the frequent activities of these people, no reliable death adder records have been produced in north-western Victoria since the mid-19th century suggests that this species no longer occurs in that part of the state. However, due to their lower energetic needs, some reptile species may persist in small isolated areas. The part of Victoria east of the Wallagarough River is comparatively under-surveyed, and consequently, it is not entirely out of the question that death adders persist in the far east of the state.

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