Collecting disease

A rare specimen in the Harry Brookes Allen Museum of Anatomy and Pathology

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On 19 July 1907, a human skeleton was shipped covertly from the University of Adelaide to the University of Melbourne. For the next hundred years and more, it has sat patiently in the Harry Brookes Allen Museum of Anatomy and Pathology, as biomedical and science students and researchers have been studying nearby. But despite its long residency in a custom-built display cabinet, there has been little research into the provenance, use and significance of this particular skeleton. This article pieces together that story.

The case of this specimen illustrates the important role that the collecting of human remains as pathological specimens played in early 20th-century medicine. Firstly, it demonstrates how pathologists, such as professor of anatomy and then pathology at the University of Melbourne, Harry Brookes Allen (1854–1926), used specimens to further their understanding of diseases. It also sheds light on the ways in which biomedical specimens were transported between institutions—which was not always without controversy. Furthermore, the acquisition and later use of this skeleton reveals the pivotal role that pathological and anatomical specimens played in medical education in early 20th-century Australia.

The skeleton in question is that of a man who had hydrocephalus, a disease that presents as an abnormal enlargement of brain cavities called ventricles, caused by a build-up of cerebrospinal fluid. The enlarged skull of this particular skeleton typifies that of a hydrocephalus sufferer, a condition once described by Renaissance physician Vesalius as so uncommon it must 'come from another world'.[1] The skeleton's limbs, contracted in death as they were during life, evoke the discomfort the man would have felt during his final years.

The man of whose remains we speak was 28 at the time of his death. He had spent the last eight years of his life confined to a 'soft bed with his head on a soft pillow', such was the advanced nature of his disease.[2] There is no record of his name, birthplace or former history, and it is unclear whether he was ever able to walk, due to the increased weight of his head.[3] The few facts that we do know are contained in two letters sent to Harry Brookes Allen by Archibald Watson (1849–1940), professor of anatomy at the University of Adelaide from 1885 to 1919. This surviving correspondence between

Opposite: Harry Brookes Allen.

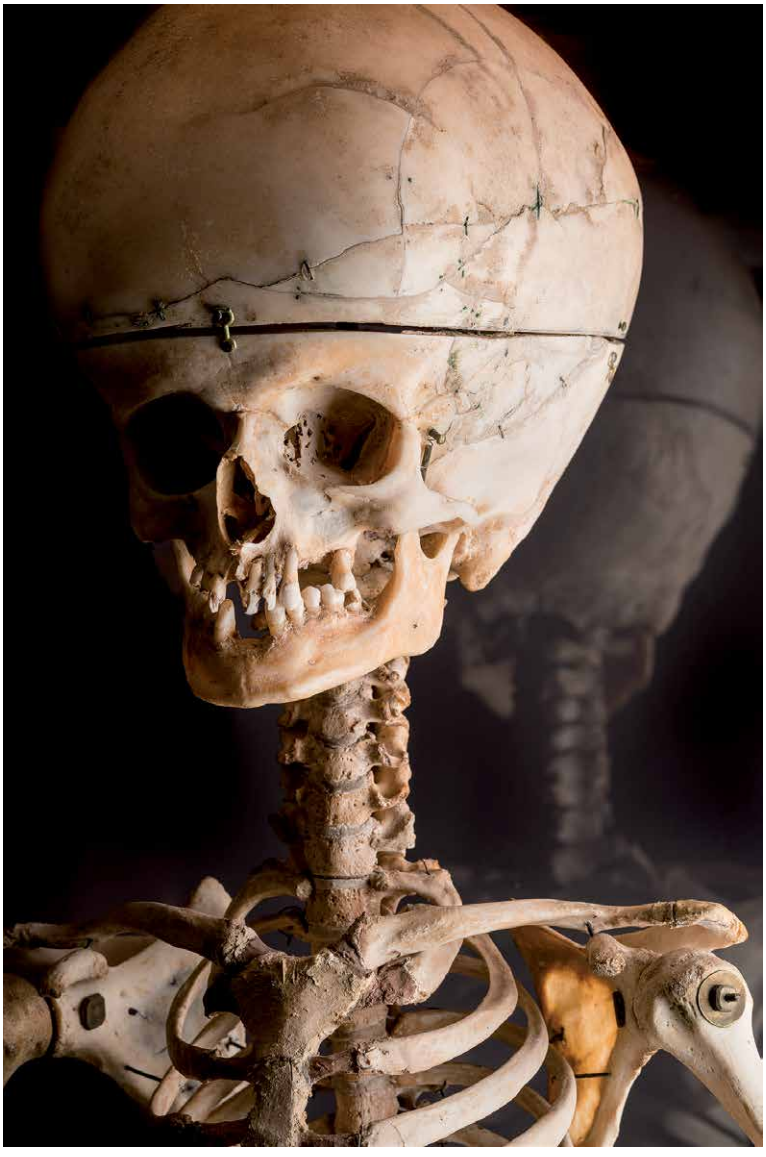
Below: Hydrocephalus specimen. 531-008101, Harry Brookes Allen Museum of Anatomy and Pathology, University of Melbourne. Photograph by Gavan Mitchell.

Allen and Watson not only informs us of the provenance of the skeleton and the history of the patient, but also shows how anatomists and pathologists used specimens to further medical understanding.

In the late 19th and early 20th centuries, hydrocephalus was a little-understood disease. Although descriptions of it had appeared in ancient Egyptian medical literature and throughout the Middle Ages, it was not until the 18th and 19th centuries that advances were made in the understanding of how cerebrospinal fluid circulates through the body, and the roles it plays in protecting the brain and spinal cord from trauma and in supplying nutrients to tissues of the nervous system.[4] A cure or effective treatment for hydrocephalus was yet to be found. Harry Allen's own typed and bound catalogue of 'Special Pathology' similarly suggests the lack of knowledge surrounding brain conditions. These three bound volumes, now in the University of Melbourne Archives, each contain hundreds of pages of physical descriptions of diseases known at the time. They are organised by body system, and certain pathologies have much more detail than others. In the 1905 catalogue, only six pages out of 300 are set aside for 'Diseases of the Nervous System', and a mere five lines for hydrocephalus. As Allen's catalogues increased in size, to more than 500 pages in 1916, the entries for hydrocephalus did not change, despite significant advances in his documentation of other pathologies.[5]

This tells us that, in the Pathology Department at the University of Melbourne at least, knowledge of diseases of the nervous system was not as developed as that of pathologies of other body systems. It also suggests that this complete hydrocephalus skeleton, with such a visible pathology of the nervous system, was a rarity.[6] It is possible that, due to its rarity, the specimen was sent to Allen more as a curiosity than as a specimen that would lead to genuine enquiry into hydrocephalus.[7] This is suggested by Watson's provocative statement: 'if you don't like the look of it—I'll relieve you of the incubus'.[8] Watson was emphasising how the specimen looked, rather than its potential use as an object for study. Just as Vesalius considered the sight of a child with hydrocephalus as something from another world, Watson likened this patient to an incubus—a type of demon. The statement reveals an attitude that specimens in medical museums could serve as curiosities, as well as being objects of medical enquiry.

Enlarged skull of hydrocephalus specimen, with clearly visible cracks. 531-008101, Harry Brookes Allen Museum of Anatomy and Pathology, University of Melbourne. Photograph by Gavan Mitchell.



According to medical historian Ross Jones, 'the study of anatomy, and its practitioners, the anatomists, were regularly at the centre of scandal and dispute'.[9] Much of this well-documented controversy concerned the supply of cadavers and specimens for teaching purposes, which, even after the passing of various Anatomy Acts, often saw bodies taken without the person's prior consent, or that of their family after death.[10] It is not clear whether consent was obtained in the case of this hydrocephalus sufferer, but historian Helen MacDonald has noted the general lack of records or way of knowing if a body was obtained legally and ethically.[11] There is, however, other evidence to suggest that the treatment and transportation of this specimen was somewhat contentious and secretive.

When the hydrocephalus skeleton was shipped, it was deliberately mislabelled as 'Personal Effects' of J.S Kidd.[12] Kidd's role in this operation was to 'forward the case intact' to Allen's museum.[13] It is possible that the transportation of the skeleton was covert so as not to raise suspicion or risk of public outrage, should the true contents of the shipment be revealed. Not only did the public harbour a profound unease about unburied and dissected

Wiley & Co. (Brisbane), Professor Archibald Watson, 1899, photograph, 13.4 × 9.0 cm. B6346, Pictorial Collection, State Library of South Australia.

remains, but one can only imagine the reaction if an unsuspecting person had realised what was inside, or opened the case.

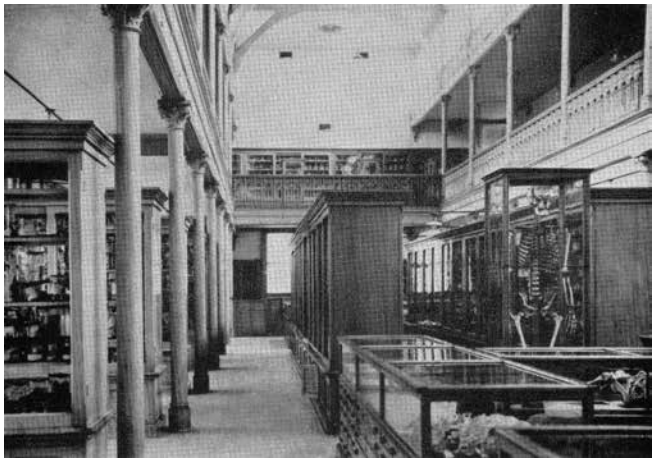
Upon close inspection of the specimen today, many cracks are visible in the skull. These have seemingly been glued and stapled back together by the specimen's preparator, Mr Moore of the National Museum of Victoria (now Museum Victoria).[14] The cracks are explained in the postscript of Watson's second letter to Allen, where he states that 'it was not Kidd who dropped the bag [and] fractured [the] skull'.[15] It is not clear how the mishap occurred, and perhaps it was a simple accident. This incident suggests, however, that bodies and specimens were not always treated with a high level of respect or care. Students at the university are said to have taken part in 'meat fights'[16] while bored during classes, throwing 'chunks of semi-putrid muscle across the room', and also nonchalantly took bones from skeletons.[17] One astonishing incident involved Archibald Watson removing an entire torso, arms, and thighs, except for the skin, from a cadaver, before filling the cavity with 'suitable padding, including … a[n] umbrella' in an effort to avoid detection of this unauthorised dissection and possession of the body.[18]

Watson instructed Allen to tear up the letter after it was read,[19] perhaps because he was worried that some of the actions described were not completely acceptable. It is possible that, just as he tried to cover his tracks in the dissection mentioned above, he did not want the transportation of this specimen traced back to him. Yet Allen did not destroy the letter. Regardless of the legality of these two professors' actions, it is clear that a number of precautions were taken to ensure transportation of the hydrocephalus skeleton remained covert and avoided any scandal.

Despite some contentious aspects of the transportation of the skeleton to the university, it was in good hands once it came into Allen's possession. The spirit of progress at the Melbourne Medical School was strong in the first years of the 20th century; the 'lively desire' of students and teachers to make the school a 'real disseminator of medical knowledge' was noted in *Speculum*, the journal of the Medical Students' Society.[20] The collecting of specimens, such as the hydrocephalus skeleton, was an important part of this tradition of education and knowledge that the school fostered.

Harry Brookes Allen's pathology museum claimed to provide students with a 'most magnificent' collection of specimens that they could study up close, and a place of learning in which to do so.[21] As well as benefiting students, the specimens were shared by Allen with the wider medical profession. Upon Watson's advice, Allen presented a paper on the hydrocephalus specimen, including images and detailed measurements, at the Australasian Medical Congress.[22] The 'process of quantification that transformed material specimens into data' such as measurements, photographs and other published material was just as important as acquiring the specimens themselves.[23] As Jones and O'Sullivan state, data could be used to make comparisons with other similar specimens, and allowed a 'more nuanced interpretation [of the specimen] by the recipient'.[24] This creation and sharing of data demonstrate how Allen used the specimens he collected not only in a teaching capacity at the Melbourne Medical School, but also to share insight into the human body and disease with the medical profession generally.

Although it is only one among more than 10,000 specimens now in the Harry Brookes Allen Museum of Anatomy and Pathology, the hydrocephalus skeleton shows us



Pathology Museum, c. 1914, from *The Melbourne School of Pathology: Phases and contrasts*, Department of Pathology, University of Melbourne, 1962, plate facing p. 33.

how early 20th-century anatomists and pathologists used specimens to try to understand the human body and disease, how specimens were used for educational purposes at the Melbourne Medical School and in the wider medical profession, and some of the controversy that surrounded these practices.

It has been lamented that 'once incorporated into collections, specimens often become static' and sometimes forgotten.[25] Despite being in full view in the museum, for more than a century the hydrocephalus skeleton had no story. The lack of accompanying contextual and medical information about the patient and his condition meant that, to those walking past, it had become merely a familiar presence, or, at best, a curiosity. But with the recent addition of a text panel and infographic, it is now a specimen that can be read about and learnt from, as Professor Allen intended.

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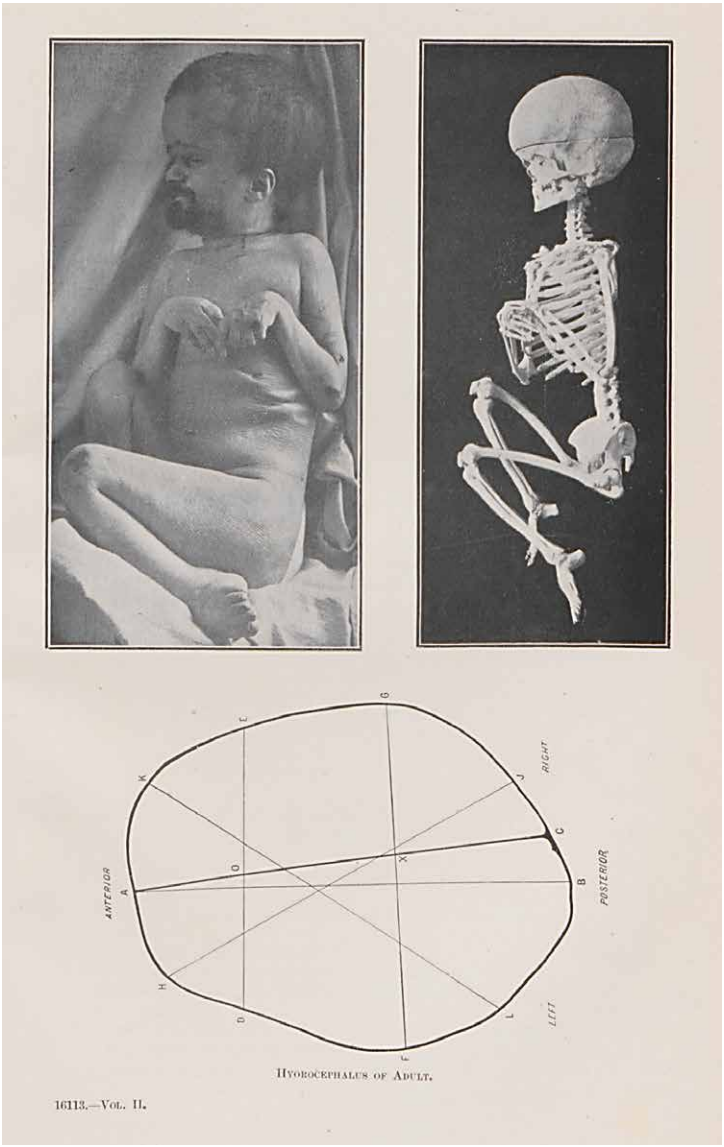
The Harry Brookes Allen Museum of Anatomy and Pathology (harrybrookesallenmuseum.mdhs.unimelb.edu.au) is used principally for teaching in the medical and related anatomical disciplines. Although the museum is not normally open to the general public, tours are available for external health professionals and VCE student groups. The museum is usually open to the public on the University of Melbourne Open Day, held in August.

1 Andreas Vesalius, *De humani corporis fabrica librorum epitome*, Basel, 1543, cited in Anthony J. Raimondi, *Paediatric neurosurgery: Theoretical principles—Art of surgical techniques*, Berlin: Springer Science and Business Media, 2013, p. 453.
2 Archibald Watson to Harry Brookes Allen, 18 July 1907. Unit 76/6, box 1, file 17, 1976.0006, Sir Harry Brookes Allen Collection, University of Melbourne Archives (hereafter UMA).
3 Watson to Allen, 18 July 1907.
4 For details of the main advances in the understanding of cerebrospinal fluid pathways and circulation, and key events including the invention of the shunt system for hydrocephalus treatment, see Rivka A. Rachel, 'Surgical treatment of hydrocephalus: A historical perspective', *Pediatric Neurosurgery*, vol. 30, no. 6, 1999, pp. 296–304; R. Hayward, '"Casey and Theo": The children who changed the face of "Water-on-the-brain"', *British Journal of Neurosurgery*, vol. 23, no. 4, 2009, pp. 347–50; David A. Chesler et al., 'Harvey Cushing's early management of hydrocephalus: An historical picture of the conundrum of hydrocephalus until modern shunts after WWII', *Clinical Neurology and Neurosurgery*, vol. 115, no. 6, June 2013, pp. 699–701.
5 Harry Brookes Allen, 'Special pathology 1905', 'Special pathology 1913' and 'Special pathology 1916'. Units 74–6, 1990.0009, University of Melbourne, Department of Pathology 1876–1976, UMA.
6 I have contacted the curators and directors of the main medical museums in Australia to find comparable specimens, and it appears that this is the only complete specimen of hydrocephalus from an adult patient in the country.
7 For literature on the anxiety surrounding medical museums as freak shows, curiosities and a corrupting influence on society, see A.W. Bates, '"Indecent and demoralising representations": Public anatomy museums in mid-Victorian England', *Medical History*, vol. 52, no. 1, January 2008, pp. 1–22; Jonathan Reinarz, 'The age of museum medicine: The rise and fall of the medical museum at Birmingham's school of medicine', *Social History of Medicine*, vol. 18, no. 3, December 2005, pp. 419–37.
8 Watson to Allen, 18 July 1907.
9 Ross L. Jones, *Humanity's mirror: 150 years of anatomy in Melbourne*, Melbourne: Haddington Press, 2007, p. 2.
10 For detailed discussion of the acquisition of bodies for dissection, see Helen MacDonald, *Possessing the dead: The artful science of anatomy*, Melbourne University Press, 2010; Helen MacDonald, *Human remains: Dissection and its histories*, New Haven: Yale University Press, 2005; Ruth Richardson, *Death, dissection and the destitute* (2nd edn), University of Chicago Press, 1987; Ross L. Jones, 'Cadavers and the social dimension of dissection', in Sarah Ferber and Sally Wilde (eds), *The body divided: Human beings and human 'material' in modern medical history*, Burlington, VT: Ashgate, 2011, pp. 29–52.
11 MacDonald, *Possessing the dead*, p. 20. Archibald Watson also mentioned in a letter to Allen that he was happy to leave 'getting [the] histor[y]' of the patient until after the specimen had been transported (Archibald Watson to Harry Brookes Allen, 5 August 1907. MHM00911, Medical History

Illustration from Harry Brookes Allen, 'Hydrocephalus of adult', in Australasian Medical Congress, *Transactions of the eighth session, held in Melbourne, Victoria, October, 1908* (three vols), vol. 2, Melbourne: J. Kemp, Government Printer, 1909.



Museum, University of Melbourne). This is another Australian example where the details of a case and historical record of the patient are lacking.

12 Watson to Allen, 18 July 1907.
13 Watson to Allen, 18 July 1907.
14 Australasian Medical Congress, *Transactions of the eighth session, held in Melbourne, Victoria, October, 1908* (three vols), vol. 2, Melbourne: J. Kemp, Government Printer, 1909, p. 347.
15 Watson to Allen, 5 August 1907.
16 Jones, *Humanity's mirror*, p. 84.
17 'The dissector's vade-mecum', *Speculum: The Journal of the Melbourne Medical Students' Society*, no. 21, June 1890, pp. 67–8.
18 P.W. Allen, 'Adelaide's blackbirding pathologist', *Annals of Diagnostic Pathology*, vol. 2, no. 3, June 1998, p. 211. Archibald Watson was a controversial character. He was charged with murder for his role in a 'blackbirding' (kidnapping) mission in the Pacific Islands in the early 1870s, where dozens of Islanders were enslaved and around 35 killed when they tried to escape. Watson absconded to Europe, before returning to be professor of anatomy at the University of Adelaide between 1885 and 1919.
19 Watson to Allen, 18 July 1907.
20 'Editorial', *Speculum*, no. 64, December 1905, p. 89.
21 'Notes and comments', *Speculum*, no. 86, May 1913, p. 9.
22 The eighth session of the Australasian Medical Congress took place in Melbourne in 1908. Harry Brookes Allen was the president.
23 Ross L. Jones and Lisa O'Sullivan, 'Two Australian fetuses: Frederic Wood Jones and the work of an anatomical specimen', *Bulletin of the History of Medicine*, vol. 89, no. 2, Summer 2015, p. 250.
24 Jones and O'Sullivan, 'Two Australian fetuses', p. 253.
25 Jones and O'Sullivan, 'Two Australian fetuses', p. 258.