

Englischer Originaltext zu dem Artikel
"Erforschung des reichen Tauch-Erbes in
Australien"

AUSTRALIA'S RICH DIVING HERITAGE EXPLORED

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Australia's diving heritage gets richer and more interesting, as members of the HDS Aus-Pac research further into the subject of early diving practices and manufacturing within the young colonies, during the early 19th century. Very early reference to importation of the Deane helmet diving system from England has been discovered, along with physical proof of very early helmet manufacturing in Australia. Both of these facts push back the Australian timeline of historical diving development by decades.

Recent research by the author has revealed that Australia's use of the Deane diving apparatus was undertaken in the colony of New South Wales, as early as 1837! Until this fact came to light, it was thought that Australia was the 13th world country, in chronological order (1853), to adopt the Deane helmet diving apparatus. Australia has now moved to a position of equal fourth on the Deane chronological scale, along with the United States of America also in 1837.

Captain Fotheringham, a Sydney Town business identity, imported a Patent slipway and installed it in Cockle Bay in Sydney Harbour, in 1833. A report from the *Sydney Herald* on 27th of May 1833 read:
"Captain Fotheringhame's (sic) patent slip in Cockle Bay is now completed and it is said that at eleven o'clock this morning, the barque Tamar will be hauled upon it, to show its efficacy. On which occasion, His Excellency has intimated his intention of being present to witness the experiment".

As Fotheringham's ship-building, repair and maintenance enterprise grew, he expanded his workforce and installed new equipment at every opportunity. Inspired by a great deal of local press coverage of the success of Mr. Deane's diving exploits in England during 1836, Fotheringham imported a

complete set of Deane's diving apparatus to compliment the marine services he was offering ship-owners within Sydney Harbour. He may very well have attended the Charles Deane's "Submarine Exhibition" held in London in 1836, in which Deane showcased his apparatus to the world.

Arrival of the new diving apparatus in Sydney Harbour was duly announced in the *Sydney Morning Herald* on the 31st July 1837:

"Captain Fotheringhame (sic) has imported by the Achilles, a diving apparatus of the same description as that in which the Patentee, Mr Dean (sic) remained under water for five hours and forty minutes and recovered from the wrecks of the Royal George the Mary Rose (the latter sunk in 1544) and other vessels, property to a considerable amount".

Just one month later, in August 1837, the diving apparatus was used to recover a box of silver from the bottom of Sydney harbour and an excellent account of that dive has survived as recorded in *The Sydney Gazette and New South Wales Advertiser (NSW : 1803 - 1842) on Saturday 19 August 1837:*
"On Thursday afternoon we went on board the Giraffe to see Capt. Fotheringham's diving apparatus, and Capt. Barneys diver, named Gilchrist, descend in eight fathom water to search for the box containing five hundred pounds in silver, which had accidentally been dropped overboard a few days since, The apparatus consists of a large tin helmet which completely covers the head, and is secured to the diver by a canvas jacket tied round the waist. There are three bull's eyes for the admission of light; to the back of the helmet is affixed a long tube of about twenty fathoms length, which is connected with the air pump. The air pump is worked by two men in the ship's long boat moored directly over the spot where the treasure was presumed to be. The diver having clothed himself in flannel stockings, drawers and jacket, jumped into an india rubber dress made for the occasion, which is water-tight and having tied two 5lbs. weights to his body for the purpose of sinking him, descended to the bottom by means of a ladder, the men all the time keeping the pump going which supplied him with the "breath of life" sufficient for his

purpose. He remained underwater just twenty-five minutes, without being able to find the treasure. When he came up from below he said he did not feel exhausted, but was shivering with cold. He expressed a wish to be lowered down on the other side of the vessel, which was accordingly done, he being secured and after a laborious search of upwards of half an hour he succeeded in finding the box, a rope was fastened to it and it was hauled up to the great satisfaction of all parties concerned. The diver, we hope, will not be forgotten.”

Until further deep research reveals otherwise, details of the next thirty years or so of diving in Australia appears to have fallen back mainly on a thriving pearl and pearl shell nacre industry, out of Broome and Thursday Island. Such luxuries were to become increasingly popular due to the world-wide influence of the Victorian era. Initially, pearl diving was undertaken by employing the long established breath-hold method and, although it is difficult to know exactly when diving helmets from manufacturers such as Heinke and Siebe were first imported for use in that industry, we do know that they were very expensive items.

From that humble helmet dive beginning in 1837, Australian use of the helmet diving system grew rapidly after the 1850s gold-rushes, as the new colonies engaged in massive programs of infrastructure expansion and development, completing railways, reservoirs, bridges and ship-building and maintenance facilities. Research has certainly confirmed that C. E Heinke & Co of London appointed Australian agents for their diving apparatus right across the country during the 1850s dominating the supply of diving apparatus to the Australian pearling industry.

From the introduction of that first imported Deane diving system in 1837, we now move to the development of helmet manufacturing within Australia, some thirty years later.

Serious helmet collectors around the world are aware of two Australian made diving helmets from the 20th century. The famous

Melbourne firm of Robison Bros. engineers and copper-smiths, produced a limited number of diving helmets based on the Heinke pattern during the latter part of World War Two, and there was also the experimental *Clifford Double Helmet & Dress* produced in Australia during the 1930s. The Clifford technology was based on a flawed physics principle of diving, which cost the life of at least one professional diver, who dared to test the promises of safe very deep diving, the inventor. Today, there is only one example extant of the Clifford double helmet and sadly, for our Australian diving heritage, it was sold off to an American collector and left our shores some years ago.

So, it was quite a surprise for the author to recently come across an old warrior of the deep, which now takes helmet manufacturing history in Australia back into the Victorian era of the 19th century. A diving helmet manufactured in Melbourne, stamped with the manufacturer's name "*Henry Dykes Coppersmith 113 Flinders St W1*". (fig01&02) Who would have thought it possible? Diving helmet manufacturing in tiny Melbourne, in a little British colony on the other side of the world in relation to the diving equipment manufacturing goliaths, located in both Britain and Europe at the time.

So how old is the Dykes Helmet, was it 'one off' and what do we know about its history? If only it could talk oh, what a tale that would be? It has been the author's great privilege to spend many long days researching the origins of this rare helmet and its history and there are still many unanswered questions which will take a great deal more deep research to answer. Most surprising of all, is the link discovered by the writer, between Robison Bros and Henry Dykes, both Australian diving helmet manufacturers in different centuries.

The tiny township of Melbourne was established in 1834, but it was the fabulous wealth and opportunities brought on by the 1851 Victorian gold rushes which really developed the Colony. The city of Melbourne grew very rapidly during the gold-rush years. But, wealth on

the goldfields was overshadowed by the fantastic business and wealth opportunities available in Melbourne for those who were willing to invest in manufacturing of goods of all types, to supply the needs of the growing Colony. Importers simply could not keep up with the demand.

Let's follow the Robison Bros timeline, appropriately overlaid with the amount of information so far gleaned on Henry Dykes Esq. Both were involved in copper-smithing, whilst the more affluent and astute Robison Bros, grew their business at a faster rate and diversified into foundry and engineering work. They produced everything from lightning conductors to steam locomotives under Government contract for the growing Victorian railway network.

In 1854, James McFarland Robison and his brothers Thomas and William set up Robison Bros. engineers & manufacturing at "99 & 103 Wharf, Melbourne"⁽¹⁾ which was at the time, the west end of Flinders Street Melbourne, ...

Diese Teile sind in der deutschen Übersetzung nicht enthalten.

...an area which fronted directly onto the wharves on the northern bank of the Yarra River.

The present day street numbers in that area appear to match the original wharf berth numbers and it was also an area where other copper-smith and plumbing works congregated. Robison's were not the only copper-smiths in that location in early Melbourne.

By 1856, Robison Bros had expanded their premises to include the property at No:113 Wharf (Flinders St. West). Then in 1858, the brothers split their business in what was almost certainly some sort of family dispute, or disagreement.

William went his own way, advertising his stand-alone coppersmith business thus: "William Robison, 113 Flinders St. West - Principal of the late firm of Robison Brothers!"⁽²⁾ The emphasizing exclamation mark was included in the advertisement text. In subsequent advertisements, William also inserted another emphasizing line "caution -

only one place"⁽³⁾ when advertising his business address at 113 Flinders St, W in 1859, to make it quite clear his was a separate copper-works to that operated by his brothers.

He used the trading company name of "Melbourne Copper Works" at 113 Flinders St W, which was situated on the corner of King and Flinders Streets, diagonally opposite today's modern Melbourne Aquarium premises.

Correspondingly, James and Thomas Robison took a new partner, H. Dodds and were advertising under a new name at a new address, viz, "Robison Bros & Co, Bond Street, Flinders Lane West"⁽⁴⁾ which was just one block north of 113 Flinders Street. The three Robison brothers appear to have divided their real estate between them, when they split. In September of 1863, Robison Bros & Co were advertising "diving apparatus"⁽⁵⁾ as part of their range of products, acting as import agents for C.E Heinke & Co of London.

Two months later (November 1863) Wm. Robison, not to be outdone, was also advertising *Melbourne Copperworks* as suppliers of "diving dresses, pumps and helmets at sale prices, preparatory to selling off stock and business in January 1864"⁽⁶⁾. So, the two companies were competing for diving apparatus sales business.

Melbourne Copper Works was without a diving apparatus import agency and had tooled up to produce diving equipment, styled on the famous C. E Heinke & Co equipment pattern of the 1860s. (fig03&04)

Wm. Robison's November 1863 advertisement (above) indicated his intention to sell off the business, but in his January 1864 advertisements he was still offering: "For Sale - Melbourne Copper Works, goodwill and stock"⁽⁷⁾. No buyers came forward, so over the next few years William sub-let the business to Henry Dykes, a talented employee and groomed him for the sale of the business. Henry Dykes was described as a "native" of the Colony, born in Melbourne and must have been a reasonably young man in the mid-1860s.

We do know he married Elizabeth Mary McKewen on 30th June 1862 (8) and on the 31st July 1865 their first child, a son John

William, was born (9), but tragically the child died just 16 months later(10).

On the 6th February 1867 the Government moved to protect local manufacturing, by introducing robust new Tariffs on imported goods which could otherwise be manufactured within the Colony(11). This included imported diving apparatus. The following year, 1868, William Robison moved to Sydney, setting up a copper-works there whilst leasing the property at 113 Flinders St. Melbourne, to Henry Dykes who was by then operating the business for himself.

Dykes quickly established an excellent reputation as a copper-smith and plumber and his new business grew rapidly due to the phenomenal amount of work available servicing the mining, manufacturing and shipping industries, not to mention the massive domestic market.

Under the umbrella protection of new Tariffs, business looked very promising and Dykes entered into a short partnership arrangement between January and August of 1867 with Thomas Edwards and David Scott changing the business trading name to *Scott & Co*(12). When Scott dropped out suddenly in August 1867(13), the business was re-named *Dykes & Edwards* and they were advertising as the “*Oldest established copperworks in Victoria*”(14) manufacturing and repairing all manner of copper, brass and lead work. In 1869 they produced a 1,900 gallon (8,640litres) copper still for a Collingwood brewery. At that time, it was the largest copper still ever made in the Colony and its commissioning received quite a write-up in contemporary newspapers of the time.(15) It can therefore, be assumed that *Dykes & Edwards* was a very capable and skillful company.

Two interesting facts now emerge in the year 1877: Firstly, Melbourne-based Robison Bros & Co. Engineers & Boiler-makers, were by then a very large concern having moved back into Flinders Street on property between No's:31 to 81. They were advertising a huge range of products including steam gauges, pumps, water meters, castings, bench vices, hop mills, wrenches, windmills, leather belting, etc, etc AND “*diving apparatus*”(16) as they were still acting as agents for C. E. Heinke & Co.

of London, but not manufacturing diving equipment themselves. By 1879 Robison Bros & Co. had opened a second factory on the south bank of the Yarra River and retained their impressive Flinders Street Head Office premises for their administration staff. The company installed the first commercial telephone in Australia in 1879, which linked their two premises, they were issued with telephone ‘No: 1’. That was just two years after Alexander Graham Bell had patented his telephone apparatus, so Robison’s were certainly at the cutting edge of modern technology.

In 1877, a newspaper report under the heading of *Protectionism* records an interview on the subject of protective taxes with William Robison in Sydney, thus: “*Mr. William Robison, who built the shop known as 113 Flinders Street, Melbourne, has been nine years in this city and is not a protectionist. He is in the manufacture of brass and copper work of all descriptions and employment to 14 hands. He is now enlarging his premises and about erecting a building which will cost £10,000*”(17) (equivalent to Aust\$1.1Million in 2013) It seems William Robison was doing very well in Sydney and the direct reference made to his current ownership of premises, at 113 Flinders Street Melbourne, is of special interest to our research.

Just four years later in 1881, Henry Dykes “*coppersmith*”(18) was before the Melbourne Courts on 2nd February for insolvency. Another report on the 29th July 1881 reveals that “*Henry Dykes - coppersmith & plumber of Carlton*”(19) was discharged of his insolvency debts, by His Honour Judge Noel. Today, we can only speculate on what happened to the financial integrity of the thriving *Dykes & Edwards* partnership. Maybe it was due to a collapsed debtor taking them down, or there could have been a partnership disagreement, or it may have been the result of fierce competition from the likes of Robison’s. Whatever the cause, the early 1880’s ushered in a fifteen year Recession in Victorian manufacturing and land values. The gold-mining wealth bubble had burst! Dykes continued to trade on alone for a little longer, in a Carlton premises, after his brush with the Insolvency Court. Robison Bros themselves,

collapsed during the peak of the Recession between 1888 and 1894 although the company was eventually restructured on a smaller scale, trading into the 20th century. The late 19th century in Victoria ushered in tough times, “Marvelous Melbourne” had become a shadow of its former wealthy self and poverty was everywhere, most businesses struggled, whilst many more went broke. The trail for Henry Dykes goes cold at this point in time and it is not until 1907, that another clue emerges.

On the 13th of April 1907, Ada Dykes “second daughter of the Late Henry Dykes of Albert Park”(20) married Percival Love in Fiji. So, we now know that by 1907, Henry Dykes was dead. There is still much more to uncover, regarding this talented copper-smith. Clearly he was talented, because the Dykes diving helmet is a fine piece of workmanship. It’s design and features were certainly inspired by the existing Heinke helmet pattern of the day, which was being distributed by Robison Bros & Co. Tooling up to produce only one helmet for an order would have been expensive for Dykes, so it is most likely that a number of Dykes helmets were made from the existing dies and patterns, prepared previously when Wm. Robison owned the company and traded as *Melbourne Copperworks*. Imported helmets were amongst the many manufactured goods which were instantly made more expensive with the introduction of the January 1867 Tariff Duty. So, Dykes was simply offering a cheaper Australian-made alternative to the Robison Bros/Heinke imported product. For Robison Bros, there would also have been the added cost of international shipping and as the Heinke helmets were already quite expensive in England, Dykes would have had an advantage on retail pricing. Even so, Robison’s were to enjoy a very long association with Heinke & Co. which is evident when the classic Heinke ‘Pearler’ helmet pattern is compared to the design shape and style of the World War Two production of Robison helmets, they are mirror image of each other. (fig05)

So, how can we use the above knowledge to make an estimate of the possible production date for the Dykes helmet? The helmet is

stamped *Henry Dykes 113 Flinders St not Dykes & Edwards or Melbourne Copperworks*, so that may indicate manufacture between 1864 and 1867, when Dykes was operating the business alone. Dykes moved to another premises in Carlton after his 1881 brush with insolvency, so it is doubtful the helmet was made at those premises and stamped with his old address. The introduction of the Customs Tariff on imported diving gear in 1867 coincides perfectly with Dykes years in business, so we can reasonably deduce that the helmet was manufactured in 1867 or 1868, as Dykes was NOT an importer. The helmet does show the skills and resourcefulness of ‘colonial’ manufacturers of the period, who found themselves so far from the ‘Mother Country’ and who by necessity had to be innovative in their businesses.

(fig06) The Dykes 12-bolt helmet is in surprisingly good condition for its age, but it is not without some shortcomings due to the ravages of time. The helmet originally had a breastplate-mounted air exhaust valve, so typical of mid 19th century helmets, but it was removed at some stage later. Protective wire grills have been added to the ports, by a quite amateurish hand. Most disappointingly of all, the lower half of the corselet neck ring is missing, which would have been positioned on the top of the corselet to mate with the bonnet neck ring joint. (fig07) The corselet is of very heavy copper and is a little crudely hand formed, the very cap of the bonnet was fitted with the traditional castellated joint, a beautiful piece of workmanship. Twelve slotted-head bolts fitted from inside the corselet and soldered over to lock them in place form the diving dress attachment studs. (fig08) A “pepper-pot” type air exhaust valve is positioned up on the right side of the bonnet. (fig09) Henry Dykes' brand is stamped in two positions on the front brail either side on the centre wingnut. The brails consist of four components, front and back and two shoulders straps, which was typical of the 1860s Heinke helmets. Four of the original twelve wingnuts are missing.

Three other similarities with contemporary 1860s Heinke helmets include: (a) A crude bonnet locking device situated just below the left port, which accommodated a threaded thumbscrew to tighten up onto the edge of the corselet neck ring. (fig10) (b) A “pepper-pot” style exhaust valve on the bonnet shows no manufacturers marks and is a very basic device. It was designed to screw down to increase tension on an internal spring (now missing) which in turn pressurised a small exhaust valve seat. (c) A rear view of the helmet reveals a large, curved air inlet pipe fitting, which does not contain a non-return valve, but is recessed and turned with a fine thread to accommodate one. The Dykes helmet displays a rich, undisturbed chocolate-brown patina. (fig11)

Inside the helmet the air distribution ducts feed over each of the three ports and a fourth duct shields the exhaust valve exit. The high quality, wide width brass neck ring has an interrupted thread locking system. (fig12) At this point, it is important to acknowledge the expert advice given to the author by Dr. John Bevan, of the HDS UK. John made some interesting observations on photographs emailed to him.

John confirmed that the Dykes' helmet appeared to be based on the Heinke pattern and when Heinke helmet developments were considered, it was possible to date the Dykes' helmet around the 1860s. C. E. Heinke died in 1869, after which the lower neck ring on the corselet became ‘recessed’ to accommodate a leather gasket. The Dykes' helmet has what is known as a ‘non-recessed’ gasket, which was flush with the neck ring and much wider than the recessed version. The spit-cock did not appear on the Heinke helmets until sometime after 1865 and the Dykes' helmet

exhibits many similarities with the Heinke pattern including: 'square' corselet, inlet elbow, ‘pepper-pot’ exhausts and side windows.

Therefore, the era of manufacture seems to be fairly accurately confirmed by both historical research into Henry Dykes' business and what is known about the developments of the Heinke diving helmet. When we compare the Dykes' helmet with a contemporary Heinke helmet (refer fig03&04) the similarities are astonishing. Henry Dykes surely used a Heinke helmet as the model for his work, even including the unusual thumbscrew helmet locking device, depicted on both the 1860s Heinke and Dykes' helmets.

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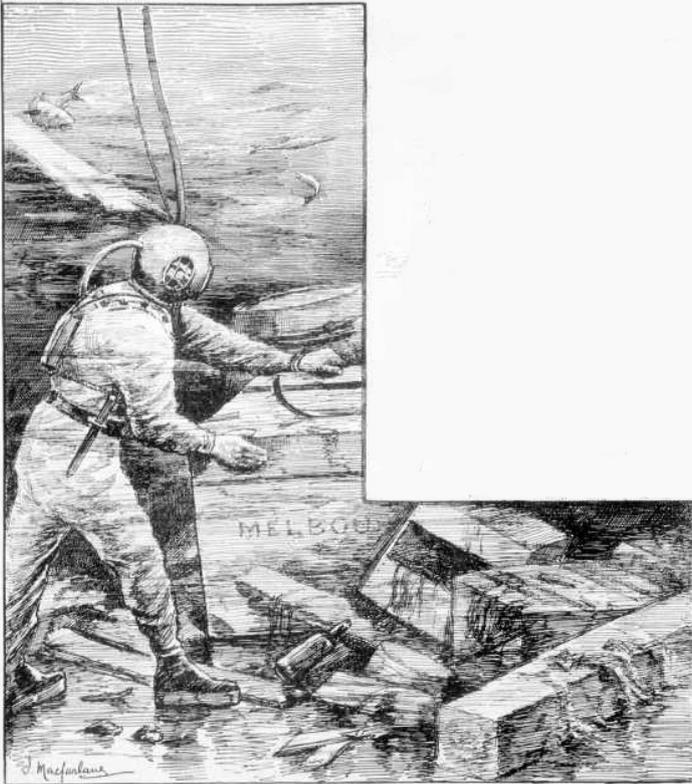
“Another Whitstable Trade’ by John Bevan printed in 2009

Captions for images:

figs01&02: Henry Dykes' brand stamp in brails. (Choice of 2 images)

figs03&04: An 1860s style Heinke helmet contemporary with the Dykes helmet

- fig05:** A Robison Bros helmet produced in Melbourne during World War Two.
- fig06:** Front view of Dykes' helmet
- fig07:** Missing lower half of neck ring on corselet.
- fig08:** Threaded bolts through corselet, to seal collar of diving dress.
- fig09:** The 'pepper-pot' style exhaust on the right side of the helmet.
- fig10:** Threaded thumbscrew fitting, for the bonnet locking device.
- fig11:** Rear view shows the curved air inlet fitting, threaded to take non-return valve.
- fig12:** Wide, old style neck ring on bonnet – dates the helmet pre 1870.



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A Melbourne salvage diver at work in the 1860s



Das unterbrochene Gewinde zum Aufstecken/Aufschauben des Helmes