Introduction to the Analysis of Archaeological Footwear

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Footwear remains a neglected artefact despite its common occurrence on Australian historical sites. This paper aims to redress the current void in the archaeological literature by demonstrating the importance of footwear in historical archaeology. Australian archaeologists require a methodology which will allow them to catalogue, analyse and thoroughly research footwear. This paper provides an outline of the major features of footwear, in terms of both the anatomy of the shoe and styles of footwear, and also outlines a method in which to catalogue such artefacts. The methodology has been applied to the Lysterfield Boys' Farm assemblage in which it is demonstrated that research into footwear can provide a wealth of information relating to the site in providing details on contemporaneous social and economic circumstances. What is ultimately established is a thorough understanding of the way in which footwear may be utilised within historical archaeology.

INTRODUCTION

When considering artefacts in historical archaeology we think immediately of teacups, medicine bottles and clay pipes. It is important however to consider artefacts other than those that appear in abundance – such as ceramic and glass – which typically monopolise the attention of researchers. One category which has received scant consideration by Australian archaeologists is leather footwear. Aside from Bower's (1999) report on leather artefacts from the Cumberland/Gloucester St excavation in Sydney, which provided an analysis and discussion on manufacturing technique, stylistic trends and quality of the footwear, footwear is only occasionally referred to in site reports and typically only in a brief and non-analytical manner.

There is very little literature relating directly to footwear within Australia with the exception of several works on fashion history. Mitchell and Ward (1997) provided a basic overview of the Australian footwear industry and the development of fashion from early colonial times until the present day in *Stepping Out: Three Centuries of Shoes*. Maynard's (1994) *Fashioned From Penury* provided a brief discussion on the footwear industry in Australia during colonial times, cursorily covering the cost of footwear and the nature of imported footwear and its impact on the Australian industry. Elliot (1997:20) attributes the lack of literature exploring footwear within a historical and social context to misconceptions concerning its 'trivial importance as a field of historical enquiry'. This is also the case in archaeology despite the fact that footwear should theoretically prove as valuable as ceramic or glass artefacts – items which in comparison have been the subject of voluminous analysis and published works.

This comparative paucity of research may be due to several factors. Leather footwear does not generally survive as well as ceramics or glass; it is often not as abundant within individual assemblages; the degraded and decaying footwear scraps are often neither appealing to work with nor easily identifiable; the leather itself may often be fragile and difficult to handle and the archaeological significance may not be immediately apparent. The study and analysis of historical Australian footwear should prove effective in providing information on dating and insight on the social and economic aspects of a site, for as Anderson (1968:56) has noted, 'with careful study, shoes, even in a fragmentary condition, can be a source of chronological, technological and economic information'.

By focusing on the neglected area of footwear, this article will provide a general introduction to the types of footwear likely to be encountered and aims to illustrate a practical methodology for both cataloguing and analysing footwear. Further, through the use of a case study the benefits that analysis of footwear can provide to the discipline will be demonstrated in technological and socioeconomic terms.

THE ANATOMY OF THE SHOE

Before we can consider analysing footwear, the overall layout and the pieces which together form the whole shoe must be understood. The anatomy of the shoe comprises several basic components (Figure 1) and these form the basis of cataloguing and analysis. The ability to identify each of these individual components is particularly necessary as complete examples of footwear are rarely found in archaeological sites, and the researcher must often deal with parts of shoes or only individual pieces.

Referring to Figure 1, the *upper* is the top part of the shoe and includes the *vamp*, which forms the top piece of leather forming the upper, is commonly three-quarters in length and meets the *quarters*, the rear component of the upper (Figure 2). The *tip* is the toe piece which is attached to the vamp. The *eyelets* are the small metal rings used for threading laces

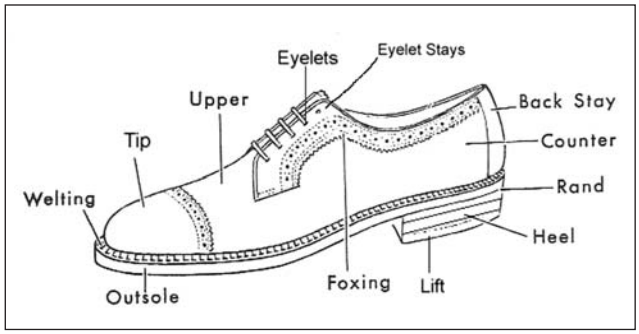


Fig. 1: Anatomy of the shoe.

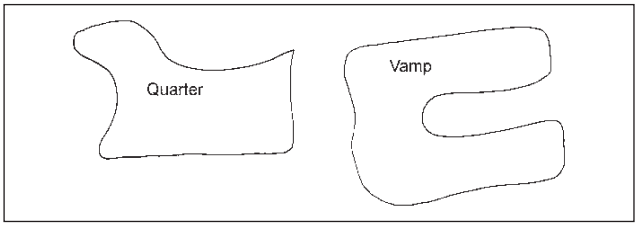


Fig. 2: Illustration of quarter and vamp.

although *hooks* or *buttons* were also commonly used. The *eyelet stays* are small strips of leather located around the eyelet area which provide reinforcement; the *backstay* is a strip of leather located on the back seam which is used for strengthening; the *counter* supports the heel of the foot by stiffening the area; the *rand* is a piece of leather in the shape of a horse-shoe which is attached to the heel section and is used to fill any gaps between the heel and the upper. The *heel* is composed of individual layers of leather which are referred to as *lifts*. The *outsole* may be single, half-double (full outer sole with a second layer extending from the front of the foot to the centre) or full-double (two thicknesses of leather spanning across the entire foot). The insole is located inside the shoe and is commonly made of leather. The *welt* is common but not used on all types of footwear, it is a narrow strip of leather sewn to the upper. It has an outward edge which allows for the outsole to be attached by stitching through both the welt and the outsole.

METHODS OF CONSTRUCTION

While there are more than 800 known ways to construct a shoe, they can be broadly grouped into hand-sewn and machine-made techniques. The former was prevalent until the introduction of machinery in the late 1880s. For each of the main construction methods several key features are summarised below.

Hand-sewn methods of manufacture

Turn shoe construction

This method refers to constructing a shoe by sewing the sole to the upper inside-out and then turning the shoe the right way around so that the stitching is on the inside (Grew and Neergard 2001). This places the grain side of the leather on the outside and protects the sole seam on the inside. Shoes manufactured by this method began to be phased out by the mid-nineteenth century (Bower 1999:138).

Vertical attachment

This process of constructing footwear, popular during the nineteenth century, involved the use of a 'vertical fastener' which was pierced through the soles (Saguto 1984:5). This method rendered the soles quite inflexible and rigid. The fasteners were made from either metal or wood. The latter method involved driving a wooden peg into an under-sized hole. Shoes were constructed entirely by hand until a machine for punching the holes in the leather was introduced during the 1840s (Bower 1999:137). Distinguishing between hand-made and machine-made pegged footwear is a matter of assessing the holes – the hand-punched holes are likely to appear in an uneven line and may display uneven spacing between the holes; machine-punched holes will be in an even line with equal distance between each hole.

The use of metal vertical fasteners involved driving nails from the outside of the footwear until they appeared on the inside where they were riveted against an iron last so that the heads of the nails would be turned down. These metallic fasteners appear as rivets on the insole.

Machine-made methods of manufacture

The welt process

This process is so named for its use of a welt in the construction of the shoe, a concept which dates back several centuries (Grew and Neergard 2001). The welt is a narrow strip of leather sewn to the upper which has an outward edge allowing for the outsole to be attached by stitching through both the welt and the outsole. The welt process became popular in mass-produced footwear with the invention of the Goodyear Welt Machine in 1847 which was capable of sewing the welt to the upper (*Australasian Footwear* (*AF*) December 1918:464–465). The Goodyear Welt Process was used for higher grade men's and boy's shoes, was the costliest of the machine-made methods, and provided a heavier and less flexible shoe (Rossi and Tennant 1984:50). Several key characteristics identify welted footwear. Firstly, the insole is smooth and carries no stitches on the inside. Secondly, inspection of the heel corners reveal the ends of the welt; and the heads and clenched points of nails can be found where the heel is attached. In addition, no metal points will show on the waist (the middle) or forepart of the shoe. Finally, welted footwear has a tendency to wear a hole through the centre of the sole (Bordoli 1935:53, 57; Commonwealth Technical Publication ('CTP') 1948:8–9).

The stitchdown process

The stitchdown process is one of the oldest and simplest methods of shoemaking and is less expensive than welted footwear. There are many variations of this method, some of which are quite complex (Rossi and Tennant 1984:50). The stitchdown method involves stitching the sole to the underflaps of the upper and was commonly used for rugged boots and footwear containing two or three soles (Rossi and Tennant 1984:50). Thus it is common for stitchdown shoes to have a middle sole (Bordoli 1935:57). The surface of the insole of stitchdown footwear will normally show stitch seams and the clenched heads of lasting tacks. The stitchdown method will normally show more even wear over the sole than welted footwear (Bordoli 1935:53; CTP 1948:11).

The screwed and stitched process

The screwed and stitched process was often used for heavy footwear and is essentially a variation of the stitchdown process. In this method, each component of the shoe is fastened together with strong screw wire, often brass, which is inserted all the way around the sole in approximately one-inch intervals (CTP 1948:12). The screwed and stitched method can be identified where the points of the screws, but no stitching, can be seen on the insole and small circular impressions may be evident on the insole leather. The screwed and stitched method wears evenly over the sole (Bordoli 1935:53, 58).

The cement process

The cement process was introduced into Australia during the mid-1930s and was primarily used in the manufacture of women's shoes. This new process involved using adhesives rather than nails or stitching to join soles to the upper (*Australian Leather Journal* (*ALJ*) June 1938:25), and is a process which is still commonly used today. The cement process was used to make 'light' and cheap footwear. Footwear manufactured by the cement process is distinguishable by the lack of both nails and stitching, and the appearance of the insole as being 'stuck' to the outsole.

A note on stitching

Stitching provides information on the quality of the shoe. Rossi and Tennant (1984), defined 'excellent' and 'poor'

quality footwear and for the purposes of analysis, a 'medium' quality category was identified (Table 1).

Table 1: Stitching as an indicator of quality of footwear.

Quality of Footwear	Number of Stitches per centimetre
Excellent	4.5-6cm
Medium	3-4.5cm
Poor	1.5-3cm

SIGNS OF REPAIR

Recognising signs of repair on footwear can be useful indicators of economic circumstances (professional repairs, home repairs) and the re-use of artefacts.

Sole

A common method of repairing soles involved 'clumping' which was the addition of another sole onto the existing sole (Bordoli 1935:69; Laurence-Lord 1948:149). The additional sole was often riveted on with broad-headed brass rivets, although a cheaper alternative often involved the use of iron plugs (Bordoli 1935:69). Various forms of nailing were also added to the sole to increase the length of wear. These were often placed around the sole with an additional row at the toe and joint (Laurence-Lord 1948:152). Wooden vertical pegs were also often used in repair. In terms of professional repair, aesthetics were important and any visible nails or seams were regarded as inappropriate and distasteful (Dooley 1912:174; CTP 1948:57). Repairs performed by non-professionals are generally easy to identify as they often appear rough and unfinished.

The heel

Repairing heels usually involved mending damage to a worn portion of a lift and replacing it with new material (CTP 1948: 57). Often solid scrap leather or inferior hide was used (Dooley 1912:170) and fastened on piece by piece, with nails being placed in larger quantities on the side worn down the most (CTP 1948:58). New lifts were attached by driving a rivet in the centre at an angle to the lift while additional rivets were driven in around the outer edge of the new piece of lift (CTP 1948:58). When repair to more than one lift on a heel was being undertaken it was common to stagger the cuts in a step-like manner (CTP 1948:58).

Scraps

For the same reason that we look at repair, it is also necessary to examine scraps of leather and cut-offs. Scrap leather and cut-offs can provide various types of information. For instance, the presence of large quantities of scraps and cut-offs would suggest that shoes were being made or repaired on the site either professionally or by amateurs. Here one would need a finer scale of analysis and a close contextual study to determine if this was more likely to be amateur or professional repair or a manufacturing site.

STYLES AND FASHIONS

In order to be able to identify various types of footwear it is essential that any analysis of footwear involve the integration of fashion and stylistic changes. Style is defined as relating to the type or the cut of the shoe while fashion defines the details and features which appear on the footwear. Notes on styles of footwear can be found in contemporary texts, letters, paintings, clothing catalogues and newspaper advertisements. Based on the Australian tendency to mimic British and American footwear fashions, these tend to be based on trends followed abroad. One of the major indicators of footwear fashions is in the shape of the toe while the style or cut of shoe is indicated by the shape and placement of the vamp and tongue. It is also important to note that until the mid-nineteenth century shoes were predominantly made as 'straights', that is that there was no distinction made between the right and left shoe. The introduction of the 'crooked' last enabled manufacturers to produce right and left shoes (Smith 2000:21). There is little available information on the common work boot, with most of the information taken from pictorial evidence. It is however necessary to form a general concept of working class footwear as they are prevalent amongst most assemblages.

Men's shoes – major styles

Five major styles of men's footwear were prevalent within Australia from the 1850s onwards, all slight variations of each other with no major distinguishing characteristics. The *Balmoral* is a form of boot in which the vamp is stitched over the quarters; the shoe version of this style is known as the *Oxford*. The *Blucher* is a form of boot in which the quarters are stitched over the vamp; the shoe version of this style of boot is referred to as the *Derby*. Finally the *Brogue* refers to footwear which is highly decorated by small holes punched and perforated into the surface.

The evolution of men's shoe fashions

At the beginning of the nineteenth century men's boots were made with a deep fold of leather at the top and had loops for pulling them on. The toes were rounded or tapered to a square end (Fletcher 1984:40). An 'elegant' outfit saw spurs attached to low heels even if the boots were not for riding (Fletcher 1984:40). By the 1830s men's footwear had square toes, and by the 1840s, the fashion of the period was for shoes with gently pointed toes and patent leather toecaps (Ledger 1985: 127). In the 1850s long boots were worn over trousers (Fletcher 1984:93). In the 1890s, button boots were fashionable for men – these boots came over the ankle, were fastened with six side buttons, had a stacked leather heel and displayed brogueing on the toe cap (Ledger 1985:141). By 1910, men's fashions saw a revival of the pointed toe and elongated vamp in the walking shoe. It was also around this time that buttoned boots began to fall out of favour with the upper classes (Ledger 1985:143). Soon after the toes rounded slightly before reverting once again to the tapered look in 1914 (Pratt and Woolley 1999:80). Though not in favour with the elite, button boots were still common during this time. The war popularised the Blucher or Derby style of boot and shoe which was commonly used within military services.

Contemporary footwear journals referring to the evolution of men's footwear since the 1920s focus predominantly on the sports shoe (*AF* April 1925:139), including the football boot. Men's footwear became fixed in a pattern of modest and reserved styles with men no longer favouring fancy or elaborate footwear. While stylistically men's shoes did not change, some subtle changes in fashion did occur in terms of colours (such as the introduction of tan and white), although this related mostly to the 'higher end' of the footwear market with little effect on the common work boot (Pratt and Woolley 1999:88). Ultimately there were only 'three or four styles which looked identical from a distance' (McDowell 1994:15).

Women's shoes – major styles

Women's shoes were subject to many changes in fashion but these were ultimately all changes to a few basic styles which included the boot (high or low), the mule (a slip-on shoe characterised by the lack of a backstrap), the pump (an enclosed shoe with a medium to high heel) and finally the summer sandal. All these forms of footwear appear with different fabrics, various sized heels and have altered toe shapes, decorations and fastenings.

The evolution of women's shoe fashions

At the very beginning of the 1800s, despite the harsh conditions within the new colony, women still insisted on modelling fashions dictated by Europe (Fletcher 1984:36). Up until the 1830s women's shoes remained dainty with satin boots and flat slippers with crossed ribbons. In the 1830s hemlines were slightly raised and women wore slippers or half-boots with square toes. In the 1840s women favoured the court or 'pump' shoe and by the 1870s shoes and boots were once again concealed. The shoes and boots were dainty with a Louis heel (a fluted heel that flares at the bottom) and boots were either laced down the front or had side-buttoning and were decorated with rosettes or bows (Fletcher 1984:141). By the end of the nineteenth century women's boots had a pointed or round toe with side buttons. Research is yet to be conducted on women's working footwear.

The First World War introduced an element of practicality to women's footwear. With the country at war the government would often request tenders to supply tens of thousands of boots for military services (*ALJ* June 1938:34), and this brought with it manpower and leather shortages. Women were often required to adopt male roles and therefore a practical, flat-heeled, sturdy and durable shoe was introduced to help accommodate the demand for change in women's duties (Brooke 1972:115; Pratt and Woolley 1999:84). Following the war hemlines were raised and footwear was produced in bright and exotic fabrics – designs remained colourful and diverse as they are today.

A note on branding

Prior to 1916, in an effort to inspire product loyalty, the more elite shops would brand their name by stamping it onto the sole or insole (Mitchell and Ward 1997:66). In the early nineteenth century the 'Footwear Regulations Act 1916' required that the 'seller's or manufacturer's name or registered trade mark must be stamped or embossed on the sole' (*ALJ* September 1937:10–12). During this period the brand embossed on a shoe more often that not belonged to the retailer rather than to the manufacturer. The practical result of this was that footwear from any number of different factories could all be branded with the same retailer's name without the slightest indication as to its actual place of manufacture.

ARCHAEOLOGICAL RECORDING

Goubitz and colleagues (Goubitz et al. 2001) note that there are potentially many different ways by which to classify footwear, with no single method prescribable in every circumstance. The recording system summarised here was developed for the analysis on an assemblage of footwear from the Lysterfield Boys' Farm (Table 2). The method for recording is based loosely on general recording methods adopted for ceramic and glass and integrates the specific manufacturing and stylistic properties of footwear and includes basic data on provenance and related details. More specific data was recorded on specific components, manufacturing techniques and features and type and quality (Table 2). Condition relates to the level of preservation or degradation while quality relates to the overall appearance.

CASE STUDY

The early twentieth-century site of the Lysterfield Boys' Farm provides an example of the value of this approach to the study of footwear. The assemblage dates to the occupation of the site from the time it was purchased by the Church of England in 1935. The site was transformed into a training farm that emphasised the benefits of hands-on training and the virtues of hard work in rural areas (*Brother Bill's Monthly* (*BBM*) January 1935:18–21). At its inception, the aim was to provide practical training for unemployed boys aged around 14–17 years of age (*BBM* June 1936:8–10) after which the boys were to be placed in employment as farm hands. In 1946 the Boys' Farm vacated the site and the State Rivers and Water Supply Commission assumed control of the land (Kyi 2000).

The site is located in the outer eastern suburbs of Melbourne, Victoria to the north of Lysterfield Lake in

Table 2: Cataloguing – categories and item specifics.

	Category	Specifics
Components	Level of Completeness	Whole Shoe; Near Complete; Several Pieces(QTY); Single Piece; Cut-off/Scrap
	Type	Shoe; Boot; Sandal
	Gender and Size	Male/Female; Child/Adult; Left/Right
	Upper Components	Box Toe; Backstay; Backstrap; Collars/Cuffs; Counter or Pasted Counter; Eyelets; Eyelet Stays; Foxing; Lace Hooks; Perforation; Quarter; Stay; Tip; Toe Box; Tongue; Top Facing; Vamp
	Heel Components	Lift (#); lining, pad, seat, rand
	Sole and Lining Components	Insole; Lining; Midsole; Shankpiece; Sole (full-double; half-double; single)
Manufacturing	Method of Construction	Cement Process; Goodyear Welt; Stitchdown Process; Screwed and Stitched; Turn Shoe Construction; Vertical Attachment
	Construction or Repair Features	Bottom Filler; Clumping; Evidence of Sewing Holes; Stitches p/cm ___ ; *Metal*: Nails; Rivets; Screws; Tacks; Screw-Fastenings
		Backseams: Reinforced Closed; Conventional; Reinforced; Dog Ear
Type and Quality	Quality	Poor; Medium; Excellent
	Condition	Poor; Medium; Excellent
	Footwear Type	Blucher, Balmoral, Oxford, Derby, Brogue, Mule, Pump, Slipper

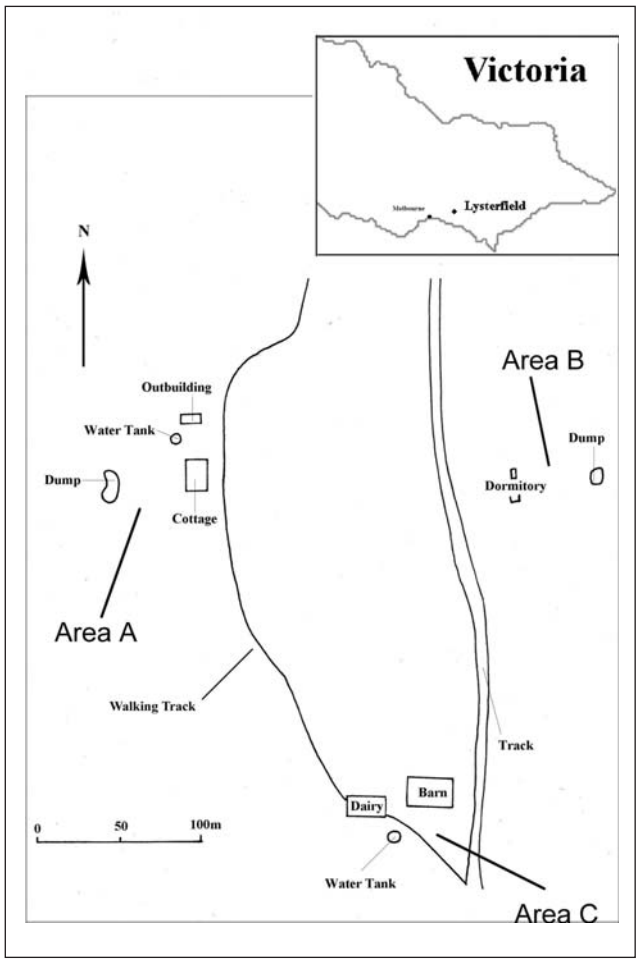


Fig. 3: Plan of the Lysterfield Boys' Farm Site, including relevant features.

Lysterfield Park and covers an area of approximately 200 m x 200 m. It was excavated over three seasons between 2000 – 2002, with each individual excavation period lasting for two weeks. The project was conducted under the supervision of Dr Vincent Clark and comprised part of a course conducted by Monash University. The three main areas that were excavated were designated as Areas *A* (the homestead), *B* (the dormitory), and *C* (the dairy and barn) (Figure 3). Both the homestead and dormitory sites include large associated artefact dumps. The dormitory dump appears to date to the Boys' Farm period while the homestead dump includes other material as well as that of the Boys' Farm period.

Area A

Area A comprises the homestead area, located on the western hillside. Structural remains consisted of a coursed wall of mortared granite rubble, an intact dome-topped cistern, and to the south, substantial concrete and brick building foundations, including a verandah and steps (Stevens and Clark 2001:12). Excavations revealed that these were the remains of the original homestead which then became the Farm manager's house and later the living quarters of the senior boys. Nearby was an associated rubbish dump which yielded mainly bottle glass and ceramics.

Area B

Area B comprises the site of the Boys' Farm dormitory and associated structures. Removal of surface debris and topsoil within the trenches laid out in this area revealed little accumulation of cultural material. Further, a layer of sterile, compacted soil was encountered just below the surface with no trace of *in situ* structural remains (Stevens and Clark 2001:14). Excavations within Area B produced no evidence of structures that predate the Boys' Farm period of occupation of the site. East of the dormitory was located a dump area which included a high concentration of artefacts which were largely of a domestic nature (Stevens and Clark 2001:15).

Area C

Area C is located 100 m south of Areas A and B, and comprises the area occupied by the 'Big Red Barn' and the dairy. The burnt out remains of the barn and dairy were excavated, along with remains of the original dairy, dating to the period of occupation prior to the Boys' Farm.

THE ASSEMBLAGE

The Lysterfield assemblage consists of an assortment of 1533 individual footwear related items: leather boots and shoes differing in degrees of completeness, various loose pieces of leather footwear and a large amount of leather scraps and cut-offs. These artefacts were excavated predominantly from the homestead (Area A) and dormitory (Area B), with minor contributions from the barn and dairy (Area C) (Table 3). The majority of boots and shoes and loose pieces of footwear were recovered from the dump in Area B which was a general rubbish dump. The scrap leather pieces and cut-offs were recovered from Trench eight in Area A which is associated with the homesteads' outside verandah.

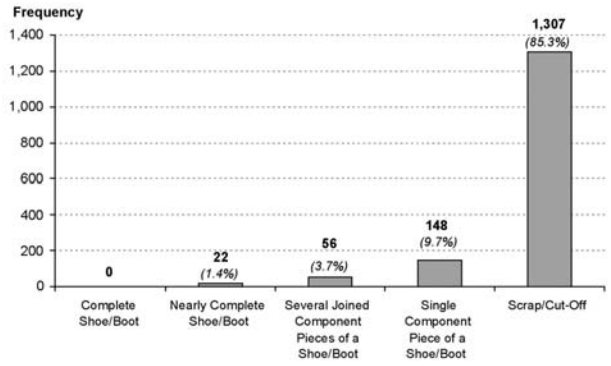
This case study is based on an honours thesis (Veres 2004) which addressed several analytical questions. Were the items of footwear comprising the assemblage manufactured or repaired at the Farm? Does a distinct typology exist within the assemblage? Can the footwear be dated to the period of the Boys' Farm? Does it reflect the social and economic circumstances of the Farm's occupation of the site?

Scrap or cut-off pieces were found to constitute more than 85 per cent of the collection (Table 4). The 1307 cut-off pieces were predominantly from 'fresh' pieces of leather, as opposed to leather taken from other used articles of footwear. There were no complete items of footwear excavated from the site,

Table 3: Location of Assemblage items.

Item	Area A (Homestead)	Area B (Dump)	Area C (Dairy)	Total
Complete Shoe/Boot	0	0	0	0
Near Complete Shoe/Boot	0	21	1	22
Several Joined Components of a Shoe/Boot	1	55	0	56
Single Component Piece of a Shoe/Boot	37	110	1	148
Scrap/Cut-off	1,018	280	9	1,307
Total	1,056	466	11	1,533
% of Assemblage Items	*68.9%*	*30.4%*	*0.7%*	*100%*

Table 4: The Lysterfield Boys' Farm Assemblage.



however 22 artefacts were identified as being 'nearly complete' (these items were an estimated minimum of 80 per cent complete). Of these items, 18 (81.8 per cent) were classifiable as boots with the remainder being classified as shoes (Table 5). All 18 boots were identified as being of the Blucher style. Eighteen of the nearly complete items were identified as being men's footwear with the remainder being women's 'flat' working shoes manufactured by the cement process. Seven of the 22 nearly complete items were significantly smaller in size and were assumed to belong to younger boys from the Farm.

Seven of the boots appear to have been used for sporting purposes – five boots bore large circular indents on the bottom of the sole similar in appearance to modern football boots that have had the studs removed. Additionally, two items displayed raised and grooved treads, suggesting that these may have been sports boots.

The assemblage was then divided into groups according to which part of the shoe or boot they belonged. Of the 1 533 items in the assemblage, 356 were identified as either belonging to the Upper or as containing components from the Upper section. Similarly, 129 of the items in the collection were identified as belonging to the Sole or Lining of the footwear. Using the mutually exclusive classifications of Full Double, Half Double or Single soles as a reference point, it was determined that the Lysterfield Boys' Farm assemblage contained a Minimum Number of 85 boots or shoes. Finally, 70 items in the Lysterfield assemblage were identified as belonging to the Heel section of footwear.

Within the assemblage, 70 items displayed indications of attempted repair. These items were heel and sole/lining components. Typically the repairs involved either replacing the sole or 'clumping' (45.7 per cent), or repairing the heel by adding lifts (25.7 per cent). Repairs appear unprofessional as evidenced by random distributions of additional nails (28.6 per cent).

An analysis of the condition of the 226 non-scrap items in the assemblage revealed that more than 60 per cent of these artefacts appear to have been in poor condition when discarded, displaying evidence of cracking, large holes and other signs of excessive wear and tear.

Analysis of the 129 assemblage items containing a piece of sole indicated that almost 80 per cent of these items had been manufactured using the Stitchdown Process, and the remainder had been constructed by the Screwed and Stitched Process.

Analysis of the quality of the 226 non-scrap items in the assemblage, based on the number of stitches per centimetre, showed that 64 per cent of the non-scrap items in the assemblage could be described as being of 'poor' quality, 30 per cent were found to be of 'average' quality, while approximately six per cent could be described as being of 'excellent' quality.

DISCUSSION

Typology

All of the small number of classifiable upper components useful for identifying types belonged to the Blucher style. This was prevalent in Australia by the 1920s, indicating that the assemblage dated around the time of the Boys' Farm's occupation of the Lysterfield site. This dating was confirmed by other artefacts in the vicinity of the dump in Area B.

Manufacture

From a combined analysis of the manufacturing techniques and the artefacts, it was possible to determine firstly that the footwear in the Lysterfield assemblage were manufactured by machine and not by hand, and secondly that the items were most probably repaired on-site by the boys themselves. An analysis of the assemblage items also suggests that the shoes were not manufactured at the Farm. The stitching on most of the items is even and consistent and is in no way erratic as might be expected from footwear made by the hands of young apprentice boys. In addition, it is also very unlikely that the Boys' Farm had the machinery for manufacturing footwear as the high cost of renting or purchasing the machinery outright would have been prohibitive. There is no evidence of these large and bulky machines or the appropriately large facilities that would be required – the only two large buildings on the site are known to have housed the barn and the dairy.

These conclusions are complemented by the history of manufacturing and repair industries, and the evolution of footwear fashion, which indicates that footwear manufacture had become highly mechanised by the late nineteenth century, so that by the time the Lysterfield Boys' Farm was established in 1935, bespoke shops only produced higher quality and more expensive footwear, and were outnumbered by shoe factories by a ratio of more than three to one.

As hand-sewn shoes had, by the 1940s, become a product favoured by the affluent that was considerably more costly than the average machine-sewn shoe it is also unlikely that the shoes were being manufactured on-site by hand. Nor is it likely that fine handmade shoes would have been considered appropriate for manual labour in the country, or that they were made at the Farm to transport into Melbourne for sale. It is questionable whether what would in effect have been a 'start-up' operation comprising adolescent boys with little if any industry experience could, or even would attempt to enter this highly specialised market niche. Ultimately, producing

Table 5: Type and demographic style of the Nearly Complete Items.

Type	Frequency	Proportion	Style	Frequency	Proportion	Wearer	Frequency	Proportion
Shoe	4	18.2%	Female	4	18.2%	Child	7	22.7%
Boot	18	81.8%	Male	18	81.8%	Adult	15	77.3%
Total	22	100.0%	Total	22	100.0%	Total	22	100.0%

bespoke footwear would not have been commercially or economically viable for the Lysterfield Boys' Farm, which derived considerable income from the sale of milk and cream products. The possibility that the boys were being taught how to make shoes is unlikely as the main aim of the Farm was to prepare them for work as farm hands, and not for individual trades. Historical evidence indicates that Reverend Nichols made numerous requests for boots and shoes in his *Brother Bill's Monthly* magazine, supporting the view that footwear was not manufactured at the farm.

Repair

The archaeological evidence suggests that shoe repair was taking place at the Farm. Within the assemblage there are a large number of cut-offs and scraps which are likely to be the result of actions undertaken to repair shoes – 85 per cent of assemblage items are in fact scrap pieces. The scraps and cut-offs were found to have been concentrated mainly in Area A, which comprised part of the homestead and possibly also the verandah. As there were no structural features within this trench it is likely that the scraps were left outside the homestead or that the repairs were undertaken on the verandah with the scraps being left behind. There were two main types of leather found in this trench. Firstly, there were cut-offs, that is, new pieces of leather with the sole or other replacement parts having been cut out. Secondly, there were footwear scraps that were likely to have been either removed from the shoe being repaired and then discarded, or to have come from a piece of an irreparable shoe and then patched on to the piece of footwear being repaired This is especially likely to have been the case in terms of heel repair, sole repair and clumping. The high concentration of leather within this area suggests it was an amateur workshop – if repairs were not being conducted in a deliberate activity area it is expected that the scatter of leather scraps would instead have been random.

Inspection of the artefacts reveals several visible signs of repair, predominantly on the sole and heel areas. The most common repair to heels was the addition of a new lift or pieces of a lift, with 18 heels displaying repairs of this nature. The sole repairs consisted of clumping or replacing worn-through sole leather with new or stronger leather – 32 soles were identified as having been repaired using this method.

The repairs themselves appear to have often been quite unprofessional. Several repairers did not bother to hide the visible stitches or nails – something a professional shoe repairer would not have missed. Some repairs to heels and soles appear to have been rather erratic with nails placed in random positions – this style of repair was recognised on 20 of the assemblage items. Furthermore, examples of sole joins found within the assemblage displayed the nails in a row across the middle of the sole which, according to professional repairers, is aesthetically incorrect. This evidence suggests that repairs were undertaken by the boys themselves, who were quite probably repairing their own shoes. It appears that the aim was not to teach the boys to become professional shoe repairers but rather to become more self-sufficient and to provide additional means of saving money.

Shoe repair, unlike shoe manufacture, can be said to have been a more useful skill considering the socioeconomic circumstances of the time period. After the Great Depression, leading through to the end of the Second World War, money and supplies were tight and it would therefore seem logical to have taught the boys the skills to be able to repair their own shoes. The conclusions drawn from the repairs found on the footwear have been supported by anecdotal evidence suggesting that the Farm's boys possessed at least rudimentary skills in shoe repair. A late canon of the Anglican Church, Neale Molloy, commented that a cobbler would often visit the site and teach the boys shoe repair skills (pers. comm. December 18:2001). In addition, the base of skill-sets that were taught at the Farm was broadened in the 1940s to include hands-on training using tools.

Socio-economic aspects

The well-worn condition of the artefacts and the extensive evidence of repairs suggest something of the lower socio-economic situation of the farm, as does the quality of the footwear itself. The quality of the footwear is of average grade as it was either machine-stitched or screwed and stitched – none of the boots were found to have welts which were typical of higher quality footwear. Using Rossi and Tennant's (1984) methodology, the majority of non-scrap items were found to be of poor quality, with an average of only 2.72 stitches per centimetre. Further, no examples of manufacturer or shop 'brand' stamps or marks were found on any of the items. The few pieces of women's footwear identified amongst the assemblage were of a very simple style and were manufactured by the cement process. These likely belonged to the wife of the head farmer who assisted in caring for the boys.

Finally, the discovery within the assemblage of pieces of boots bearing what appear to be evidence of studs and raised and grooved treads suggests that some of the items that were repaired and used on the Farm were sporting boots. The presence of the sports footwear within the assemblage suggests that despite difficult contemporary socioeconomic circumstances, the effort was made to provide the Farm's boys with recreational sporting activities, and it is possible that the boys owned a pair of sports boots in addition to their working boots. Football boots were common in the early twentieth century, and unlike normal footwear, the design of sports shoes was not separated along class lines or socioeconomic strata. In *Brother Bill's Monthly* references are made to both soccer and football games (*BBM* April 1939:11). This supports the archaeological evidence, indicating that the boys were able to enjoy the regular pursuit of sports and recreational activities and had dedicated footwear to accompany their interests.

CONCLUSION

This paper clearly illustrates the value of a close study of footwear in historical archaeology. An analysis of the footwear from the Lysterfield Boys' Farm revealed that it was machine-made rather than bespoke and that the boys were learning how to repair footwear. Analysis also indicated that the Farm's footwear is reflective of the contemporaneous social and economic conditions of the time. The conclusions drawn from the archaeological evidence fit well with the evidence of historical documents and information on the contemporary footwear manufacturing and fashion industries. This paper has formulated and prescribed a methodology for analysing archaeological footwear – a method which has the potential to be applied equally as successfully to assemblages from other historic sites. The findings from the Lysterfield Boys' Farm study clearly validate footwear as an important source of archaeological information and an explanatory tool in its own right.

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