

ALL CREDITS: MARQUITA VOLKEN



Primary patterns

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Creating upper patterns has traditionally been considered the most skilled aspect of shoemaking. It must combine practicality in terms of fit, access for the foot, a reliable means of fastening and acceptable styling combined with economy in the amount of material used. Leather has always been expensive and shoemakers always caught between the 'rock' of cost and the 'hard place' of what customers would pay. As a result, despite being skilled, they were usually also relatively poor.

Prior to mechanisation in the late 19th century, with the exception of boots for the military, footwear was made individually for each customer. Shoemakers also had to work fast in order to earn a decent living so simplicity in cutting and stitching that reduced work content and time spent were also important. Nevertheless, a rich variety of footwear has been produced over the centuries. Discovering how it evolved into the shoes we know today has not been without its problems.

METHODOLOGY

In any form of research, a methodology and typology is needed in order to organise all the information. Those used in relation to archaeologically recovered footwear have not until now taken a common approach. One reason is the sheer complexity where the variety of styles, fashions and techniques involved makes it difficult to clearly detect the underlying principles necessary for a typological hierarchy. The few examples recovered from Prehistory are not enough to warrant such organisation, while Roman footwear is simply identified by 'trade names' based on the site where the fragments were found and Medieval classed by the method of fastening involved.

Regardless of period, footwear is a highly technical artefact made from many pieces in a multitude of constructions and using a variety of fastenings. In addition, visual appearance or styling is influenced by a broad range of socio-economic and cultural factors so that for a correct study, both technical and

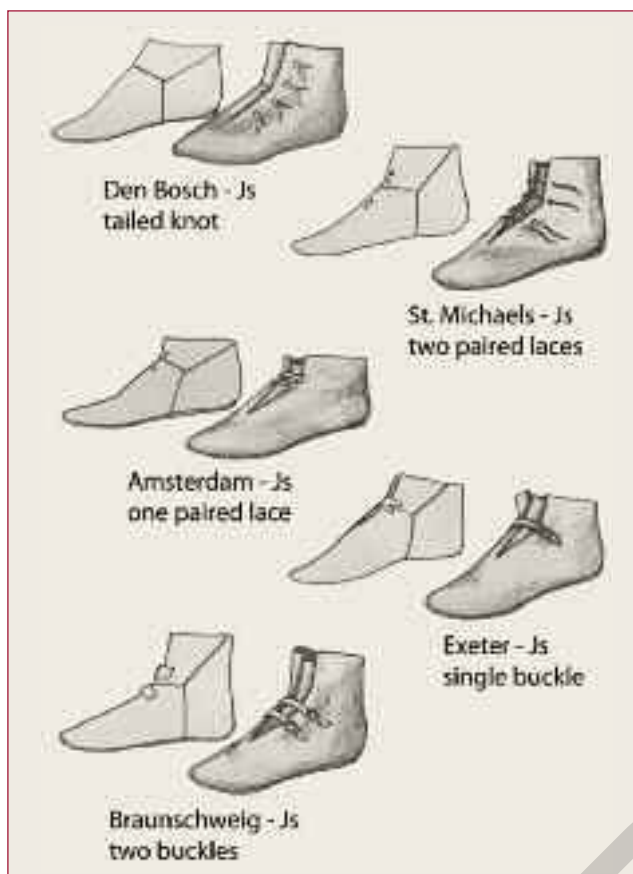


Figure 1 - Js pattern used for five styles based on fastenings shown in descending order; tailed knot, two paired laces, single paired lace, single buckle, two buckles.

stylistic features must be fully understood. Visual appearance simply involves the use of comparative examples and techniques familiar to art historians. Technical aspects although documented, have on the other hand, proved to be far more difficult.

The historical continuity of footwear has been a feature of European archaeological records from early Neolithic times up to the present day and has led to a false assumption that modern shoemaking could furnish information about ancient methods. The technology, tools and skills for handmade leather shoes, already in decline during the nineteenth century, were abandoned during the twentieth in favour of mass-production. This is why the technical aspects of ancient footwear production have remained so elusive.

PRIMARY PATTERNS

One element universal to both however is the cutting pattern for the upper. In medieval footwear only a few basic patterns were used. Style was defined by the fastening; buckle, lace, rolled leather button, tailed leather knot, etc. These could all be applied to a single basic pattern to make several different styles (Figure 1). The fact that all European footwear of the time appeared to share a small, uniform base of upper patterns regardless of cultural, linguistic and geographical differences, provided the starting point for a new approach to the study of ancient footwear.

These have been called 'primary cutting patterns' as they all show the same basic principles and organisation of components. Comparative research has revealed four for the Late Middle Ages, each identified by a letter from the alphabet

that most resembles its overall shape. The 'J' pattern has the front lateral and medial components joined at the centre, with the back ones extending from the lateral side to form a back section that 'wraps around' the heel of the foot and is joined to the front with a 'closing seam'. Lower case letters are used to indicate specific cuts at the instep that allow taller patterns to be cut from a single upper piece. These four primary cutting patterns were all made for shoes with a separate sole (Figure 2).

Further research expanded the scope to cover earlier and later periods. Post medieval saw a gradual disappearance of two of these patterns leaving only the Vq for shoes and the DD for boots in the more modern period (see Shoemaking's big bang, *World Footwear* September/October 2012). The early Middle Ages, on the other hand, showed three additional primary cutting patterns (Z, Q, I) plus five patterns for shoes with an integral sole (B, Y, W, M, U).

Going even further back to the Roman period revealed that almost all the primary cutting patterns known during the Middle Ages were already in existence. While styling was different, the basic principles and shapes were clearly recognisable as being the same. This is remarkable since there is little proof of continuity between the late Roman period and the Middle Ages. European prehistoric leather shoes mostly used only integral-soled patterns as did the Romans but with two additional patterns (O, T).

EXTRAORDINARY CONSISTENCY

The database covering all published European archaeological shoes was able to identify a total of 13 primary cutting patterns, six with integral and seven with separate soles, plus four hybrid-soled patterns that appear during only the 5th to 10th centuries. It could not, however, explain why the same pattern strategies were used continuously from prehistory through to modern times.

The same primary cutting patterns can be found further afield in other cultures and periods. The special boots for playing the Japanese ball game Kemari, popular during the 7th to 13th centuries, featured a -W integral-soled pattern. Those used for Native American footwear can all be placed within one of the European primary patterns, including the -Q, which in Europe is only found in Viking footwear. The traditional

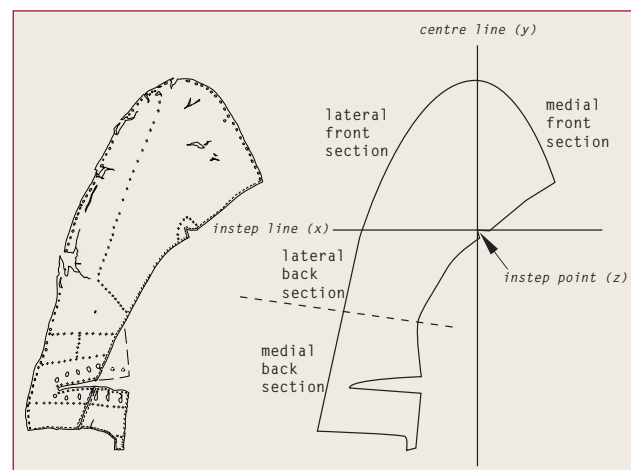


Figure 2 – Drawing of a recovered archaeological shoe and the general shape of a Jn ('n' for insert) primary pattern used for this type of shoe with its various sections indicated.

white boots of the Hopi tribe used a -Q pattern while neighbouring Navajos favoured -J and -V. The -DD and -V type patterns appear as far back as ancient Egyptian and Iranian footwear during the first millennium BC. This astonishing continuity of a few basic primary patterns across the world cannot be explained by cultural or geographic traditions, so technical constraints inherent in the leather used must be responsible.

PROPERTIES OF LEATHER

An animal skin has two directions of stretch, tight or strong along the direction of the backbone and loose or weak across the belly. Basic upper patterns must therefore seek to accommodate both these physical constraints and the proportions of the human foot in order to produce a pair of shoes that fit correctly. Because the constraints are the result of the fibre growth direction of the animal's skin, the solutions provided by these primary cutting patterns must hold true for all types of leather. Furthermore, as the number of practical solutions is limited, so is the number of primary patterns.

These primary patterns also interlock well to maximise yield (Figure 3). The largest quantities of archaeological leather scrap recovered from shoemakers' shops are composed of extremely small pieces. Up until the late 19th century, shoemakers had to be able create such patterns without any complicated formulas, instruction books or measuring devices. This knowledge, like all ancient high-level

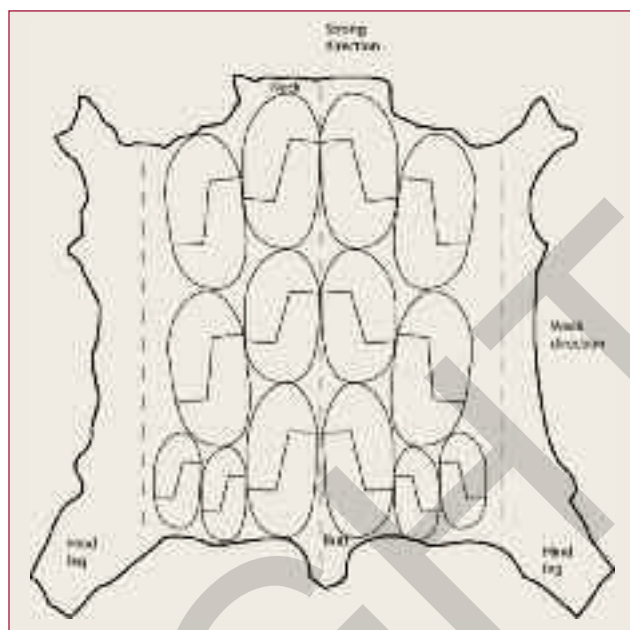


Figure 3 – J pattern laid out on a hide with regard to directions of extensibility.

manual skills, also had to be kept secret as it was a shoemaker's greatest asset. Paper patterns or written rules for calculating sizes and patterns did not exist as they could be stolen and used by anyone wishing to set up as a rival. Today, we only need to buy a software package and all these problems are answered by a machine.🔗

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