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Tekst jest udostępniony do wykorzystania w ramach dozwolonego użytku.

Hanna Zimmerman

Sixteenth-century Hose and their Manufacture¹

In 1568, which was during the Spanish occupation of the Netherlands, the Spanish Duke of Alva commanded a fort to be built on the edge of the city of Groningen. This was a so-called *dwangburcht*, from which not only attackers from outside would be within range, but also, and especially, the town itself. The works were designed and controlled by the Spaniards, but the town had to supply the labour. Moreover, the town was obliged to fund it. The project met with a great deal of resistance, from both the municipality and the local population, and the fort was never completed. However, a moat was dug, and two bastions were built on the townward side. After Alva was recalled to Spain in 1577, these were demolished. Within a few months, the part built outside the town had been levelled and its moat filled in, after which the town rampart was rebuilt [Baks 1994].

Part of the moat now lay within the defences. In the years that followed, this was used for dumping the city's rubbish. In 1594 the last of the Spaniards were forced out of Groningen, and the following years saw a return to normal town life, which boosted the demand for building sites. Very soon every trace of the moat remnant had vanished. In all, this part of the moat had been open for almost twenty years.

In the excavations of this moat in 1996 along the Prinsenstraat [Zimmerman, forthcoming], only part of the organic material had been recovered. It subsequently became clear that those textiles that *had* been preserved included some quite unusual finds. When, in June and July 2000 and again in October, another part of the same moat was to be excavated, it was therefore decided to collect as much as possible in the way of textiles. The textile finds from this site far exceeded expectations. Over 2000 textile items came to light, including many very special ones.

When the first find bags were opened, it became clear that there were many seams whose linen sewing threads had decayed. Simply shaking the bag empty would immediately destroy the cohesion of those pieces that were still sticking together. I hoped to find interesting evidence about the way in which these – as yet unidentified – garments had been put together, 400 years ago; therefore the bags were emptied very gently onto a well-lit table and before cleaning the finds I carefully removed the lumps of mud and dung. Wherever a seam appeared, I joined it up in a few places with a pale green, polyester thread. It was a very meticulous job; often there would be little seams where I had initially failed to spot them, and it would not be easy to reconstruct their exact position. I only joined together seams of which I was completely certain. In this way, many recognisable garments and headdresses – or parts of them – came to light, often finished with interesting details. Among them were a large number of hose and parts of hose.

Hose

Six more or less complete hose were found (nos 1T1, 15T7, 15T10, 17T70, 17T71, 54T128). This means that the sole, the two gussets and the leg part had survived sufficiently to allow a full reconstruction of the hose.

Further, there were eight cut-off feet (nos 15T6, 15T8, 15T12, 29T3, 30T1, 45T5, 54T41, 54T114).

Through comparison with these hose, several loose pieces of textile were recognisable as also fragments of hosiery. In all, there are 54 finds that could be identified with certainty as hose or parts of hose. All of these items are of wool, and none of the leg parts extends high enough to cover the knee.

Enough survived of four of the hose to make it worthwhile to have them reassembled by a professional textile restorer². She moistened the parts by

¹ I wish to thank Henk Staal for his meticulous drawings and Jaap Buist for taking the photograph and the digital processing of the pictures. Also I should like to thank Xandra Bardet for her translation of this contribution.

² I am indebted to Saskia Rijdsdijk, who performed this job with great skill and patience.

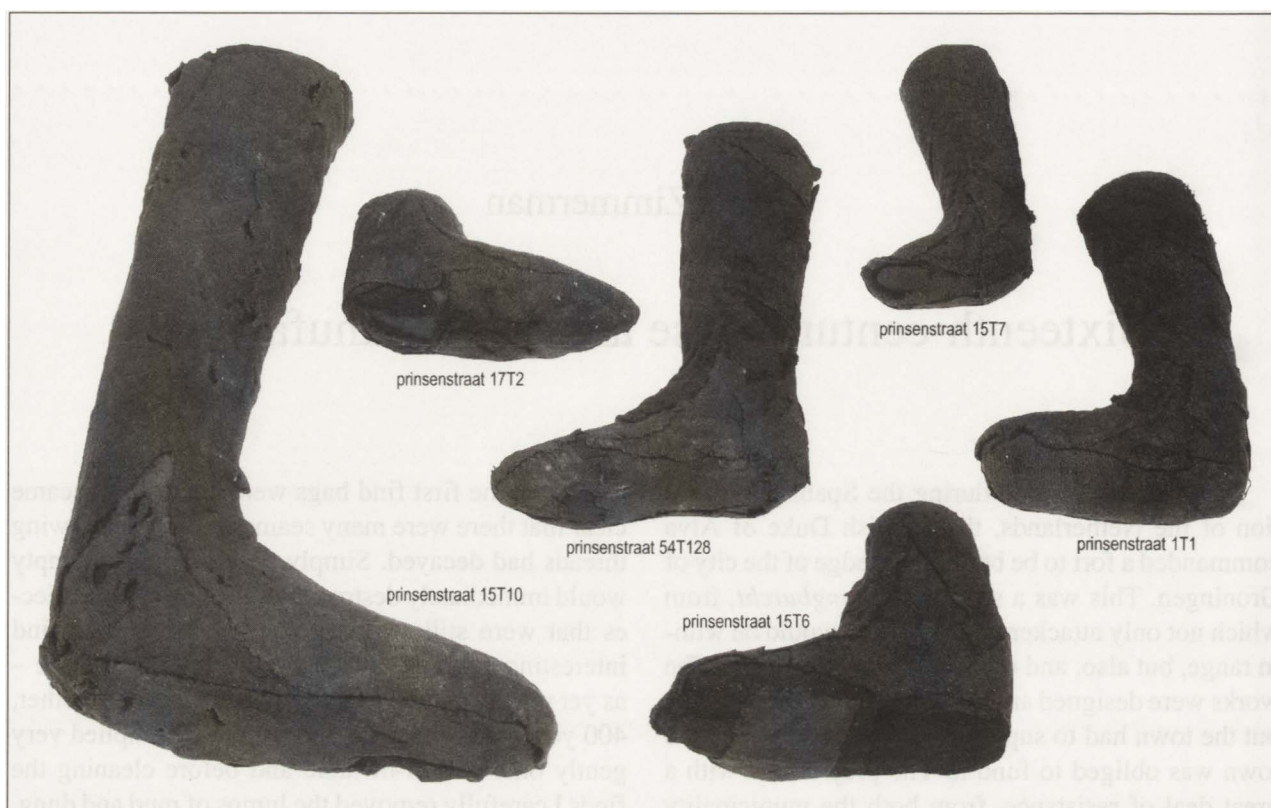


Fig. 1. Restored hose.

wrapping them in wet flannel, and then put them on a mould of cotton tricot stuffed with fiberfill, on which they dried into their proper shapes (Fig. 1).

The moat was filled with the town's rubbish, and most of the hosiery it contained shows ample signs of wear: the hose were discarded because they were too worn out for further use. We do, however, find evidence of reuse. The feet, after being mended with patch upon patch upon patch, were eventually cut off, so that the leg parts which were still intact could be put to a new use.

Basic pattern

The basic pattern is roughly similar in all of the recovered hose (Fig. 2). Its general features are as follows:

The leg part is cut on the bias, which allows the fabric to stretch somewhat. Often a triangular inset is used to complete an upper corner.

The back seam is a peculiar seam; in contrast to all other seams in the excavated material, it has turned-back edges about one centimetre wide (Fig. 2, inset). Just above the heel, this edge usually is narrower.

Around the cuts for the medial and lateral gussets, there usually is a single (but sometimes a double) row of thread impressions a few millimetres from the edge. Often there are also impressions of overcast stitching.

The gussets are triangular, with the rear edge sloping less than the front edge, the latter also tending to be somewhat concave. The grain of the gussets runs in random directions.

The most striking thing about these hose is that there are so many variations on the basic pattern. This is evident especially in the shapes of the soles and the gussets. These are remarkably varied in shape. The soles often are of a different, thicker fabric than the rest of the hose.

Soles and gussets

Five types of sole can be distinguished (Fig. 3, 4):

a. the plain sole, which follows the outline of the foot.

b. the sole that ends under the arch, with the sides of the leg part extending and joining beneath the heel.

c. the sole lengthened towards the rear with two tails that are joined to form a point which extends upwards into the back seam.

d. the drop-shaped sole; its point is under the heel, with the sides of the leg part meeting it below the heel.

e. which is in fact a variant of c. The sole is extended at the heel with a separate triangle that points upward into the back seam.

The complete hose have the following sole shapes: three a's, one b, one c and one d.

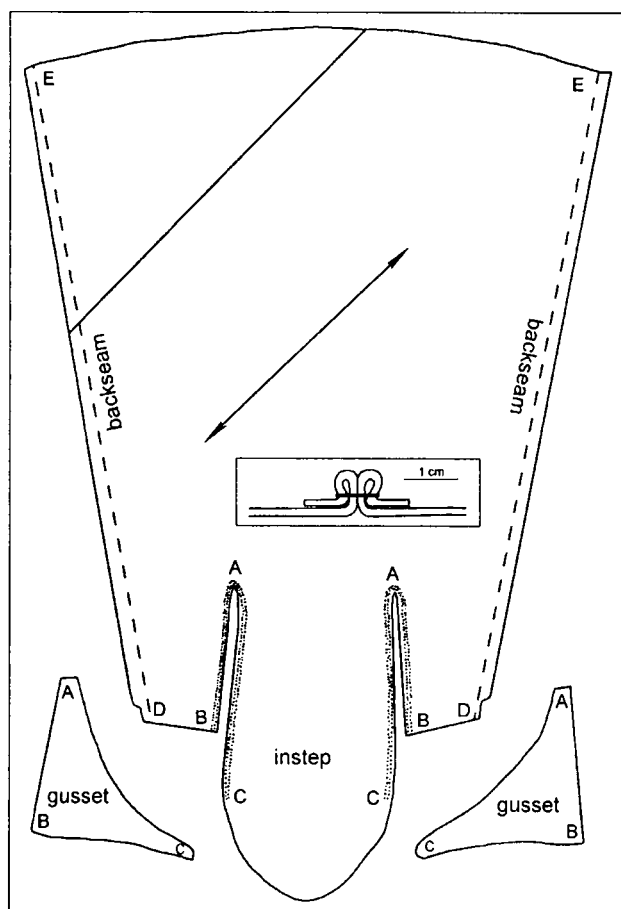


Fig. 2. Basic pattern. Inset: back seam.

The cut-off feet also have varied sole shapes: four a's, one b, two c's and one e. In one case of shape c (no 17T71), the tails are not integral parts of the sole, but were sewn on separately. The shape of yet another sole could not be established, because the rear part was too badly worn and frayed.

Fourteen loose soles were found, of which five were a's, five b's, one c and two d's. Here too, the rear part of one sole was too badly worn to allow classification.

This brings the total of identified sole shapes to twelve a's, seven b's, four c's, three d's and one e.

The grain of the soles runs in random directions.

In two cases, the back seam of the leg part goes on beyond the point where it normally stops, and, curving round, continues under the heel (nos 13T2 and 25T1). The soles are absent, but this heel form suggests soles of types b or d.

As was to be expected, the length of the soles – and hence the size of the hose – varies considerably. The lengths of 25 soles could be measured; any tails or triangular extensions were not included, just the part underfoot. The largest full-length sole is 27 centimetres long, to be worn in English shoe size 7½, Continental shoe size 42; and the smallest is a baby size, just 8 cm. Most range between 16 and 25 cm

(English shoe sizes: child's 7½ to adult 5, Continental shoe sizes 25 to 38) [Grew & De Neergaard 1988]. In the size calculations, some allowance has been made for possible shrinkage in the soil.

The triangular gussets, like the soles, also display a great amount of variation; inserted between the sides of the leg part and the instep, they may slope towards the front or the rear; there are 'stubby' and 'slender' gussets, they may be comparatively long or short. The bottom edge, sewn onto the sole, is sometimes straight and sometimes curved. They are difficult to classify, because the gussets of no two hose are identical (Fig. 5).

Manufacture

The common people probably wore thick, somewhat stiff hose, because most are made from coarse material in plain weave. The warp and weft have between 6 and 12 threads per centimetre. Often it can still be seen that the fabric was napped on one or both sides.

To give the hose some stretching capacity, the material was cut on the bias. One of the children's hose (no 1T1) is of a coarse 1/2 twill, warp 10 Z, weft 7 S. The float is on the inside. There also are more refined hose, of thin, supple, 2/2 twill. The warp of these twills (Z-spun) varies from 18 to 24 threads per centimetre; the weft (S-spun), from 14 to 26). These twills often still are slightly reddish in colour. On twill hose, the gussets are mostly sewn in with silk thread with two rows of fine, regular Holbein stitching. Yet there are exceptions; in one instance (no 15T13), the gusset was sewn in with overcast stitching, very carefully, both along the inside and along

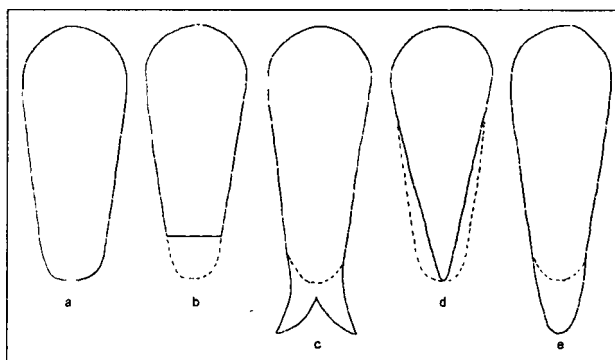


Fig. 3. Sole types.

the outside of the seam. In two cases a twill hose had been stitched with linen thread, although in one of these seams (no 13T2) also remains of silk thread were found. In yet another case (no 54T4), the gusset was sewn in with overcast stitching, but a row of stitch-holes shows that the seam was finished with a line of small stitches.

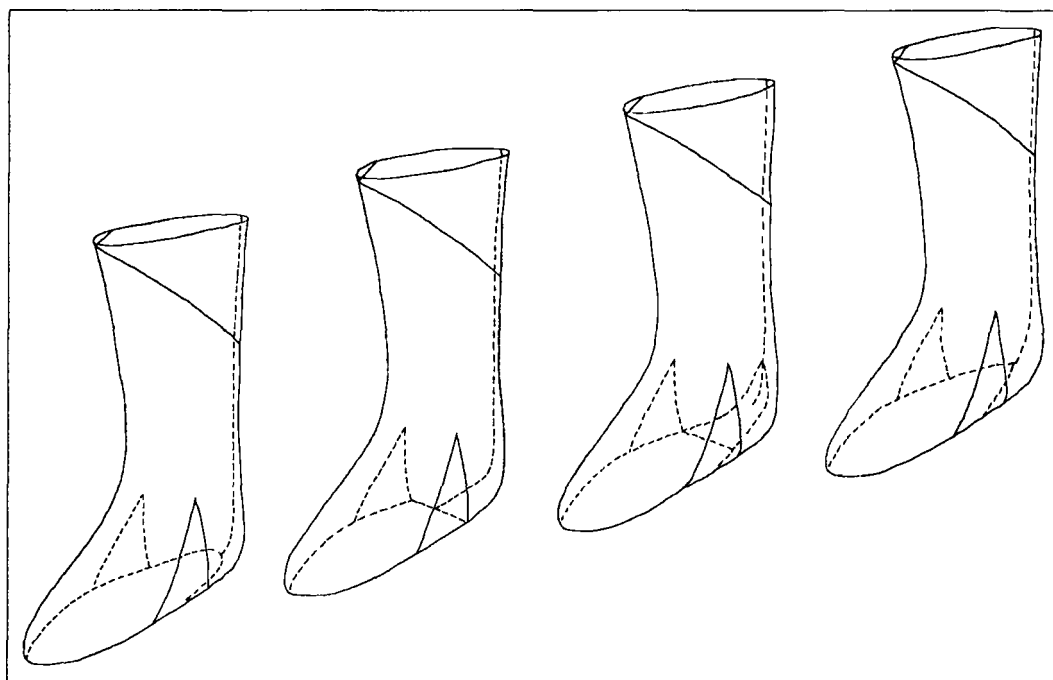


Fig. 4. Sole types.

Naturally, only the feet or even smaller fragments of such fine twill hose were recovered; the larger pieces would have been re-used.

In a few instances, fragments of twill hose are found to have small extra seams, which ensured an even better fit. In no 15T13, the forefoot part, in front of the gussets, is incised on both sides, with small stitch-holes showing along the cuts. In this area, a dart is the most likely explanation.

In one hose (no 25T2), even a gusset has such a seam.

There is just a single hose in plain weave (warp 12 Z, weft 12 S) that has silk-stitched gussets (no 15T4). On one side, a small seam runs from the top of the gusset to the back seam. The grain of the part below it slopes at a lesser angle than the rest of the leg part. A small piece was added also beside the opposite gusset, but a little lower down. Its grain does run parallel to that of the leg part. Possibly these seams too served to improve the fit. This is definitely the case with another hose (no 17T71) in plain weave (warp 11 Z, weft 13 S). Although every bit of reusable material was cut away, the hose can still be reconstructed from the remaining snippets and seams. Halfway along the gusset, two fragments (of another weave) were inserted to give the calf a fine shape, as reconstruction revealed. This hose moreover is the one with two separate tails added to the sole; these tails give the heel covering a well-rounded shape.

In general it is striking how cleverly the hose were put together and with what care in most cases they had been mended.

Economy

Often it is evident that materials for hose were used with exceeding thriftiness. One method of economising on material when cutting the leg part on the bias was to attach to one side the triangular part that came off the opposite side. This phenomenon was frequently encountered. In one case (no 25T1), the selvages were stitched together.

In other instances too, the fabric was cut as economically as possible. This is well illustrated by a cut-off foot (no 30T1). The top of the leg part has not survived, but apparently the length of cloth did not suffice for the toe part. A fragment from the same weave was added on, but its grain deviates. The cutting of the gussets also posed a problem: in both cases the top corner was added on separately. One is of the same weave as the gusset, though cut on the bias; for the corner of the other gusset a small piece of a different fabric was used. It seems that both gussets are the original ones.

In most hose, the sole is made from a thicker fabric. The thick sole of one hose has a seam running roughly across the middle. The front part had been cut from the material straight; but the rear part, more or less on the bias. Although the foot shows several repairs, it seems that this two-part sole is an original feature.

One of the detached soles (no 13T2) is of a thick fabric with woven stripes. A similar material was used for the waistband on what was left of a pair of wide breeches. This sole was made up of two narrow strips stitched together along the selvages. A cut-off foot

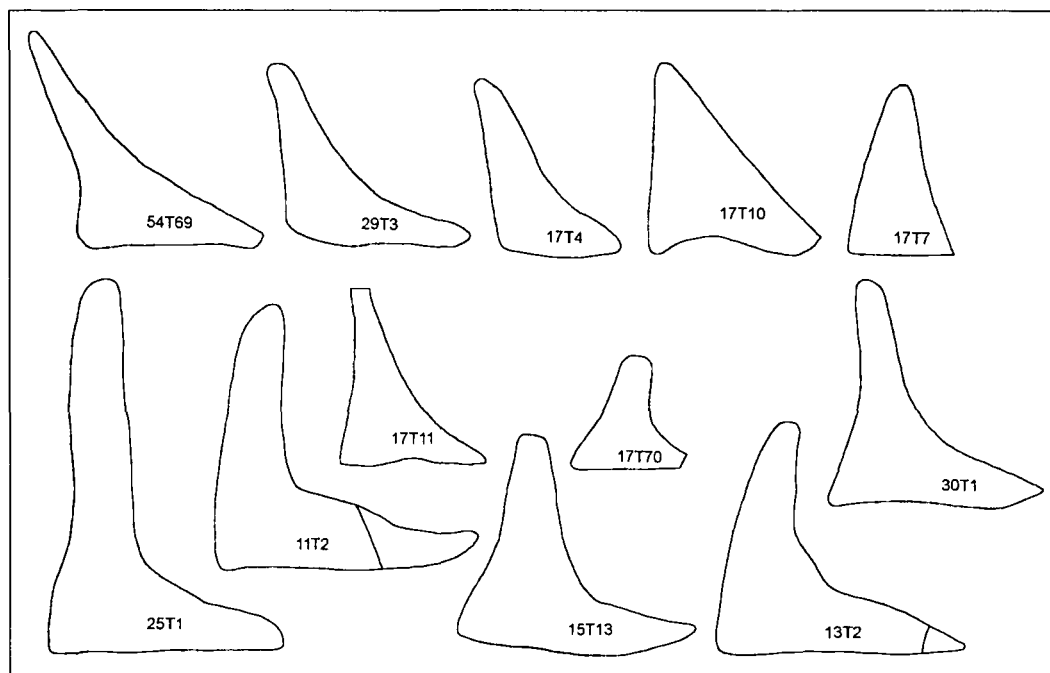


Fig. 5. Various gusset.

(no 15T6) has a similar sole, made from two strips of material.

The upper leg part of one hose (no 17T12) was found to consist of five bits of the same fabric joined together. These too do not appear to be repairs but part of the hose's original construction. The same goes for a find consisting of part of an instep with both gussets, in which all three are of different weaves.

A sole mentioned above, reconstructed from its surviving seams (no 17T71), has an insole composed of four pieces, for which three different, coarse weaves were used. One of the fragments has a broad selvedge incorporating nine thick black threads.

The hose were cut out as economically as possible not only when they were newly made. Worn areas were carefully mended time and again with patches cut out of other items. Woven material was valuable: many parts of hose show how every serviceable bit was recovered before a worn-out hose was discarded.

Hose found elsewhere

In Lübeck, the excavation of a cesspit brought to light part of a hose. This presumably 14th-century find from the Königstrasse 59 site is described by Gisela Jaacks [1993: 289]. Interestingly, its instep is much shorter than it is in the 16th-century finds from the Prinsenstraat. The back seam continues down below the foot (as with sole type b). Jaacks identifies the traces of the seam as an *Überwendlichnaht*. This is overcast stitching.

Kay Staniland [1997: 264] mentions a complete twill hose of the Tudor period, roughly contemporary

with the Groningen finds, which was found in London. She compares it with less ably tailored hose fragments from 14th-century excavations, and finds that the construction of these garments has improved in the intervening period.

This is apparent also when we compare the seam of the Lübeck hose with those of the Groningen finds (Fig. 2, inset). The latter are stronger and more resistant to the strain of the hose being pulled on and off. As noted above, several of the Groningen hose were found to be remarkably close-fitting; this draws attention to the skill with which 16th-century hose were made.

On Red Bay in Labrador, on the east coast of Canada, some graves were excavated, associated with French and Spanish whaling settlements of the late 16th century. One of these graves contained a complete pair of hose [Dubuc 1990: 73-92]. The drawing shows that these back seams too continue under the foot as with sole type b. The most remarkable feature is that the gussets were cut in one piece with the sole. This is the case in none of the hose from the Prinsenstraat.

Graves excavated at a former settlement of Dutch whalers on Spitsbergen too produced two hose, as yet unpublished, about which Sandra Comis has kindly informed me. Their soles were missing. These hose date from the first half of the 17th century.

Colour

As might be expected, most finds from the moat are brown. A few items are somewhat reddish in colour. The baby-sized hose is still a fine shade of red,

and some fragments of twill too have kept their red colour.

Recently a splendid exhibition of 17th-century Dutch winter landscapes was staged in The Hague. Although by the 17th century much more knitted stockings were worn, also by the common people, there still were many hose-clad legs to be observed. The elegant gentlemen indeed wore close-fitting stockings, but the more simply dressed people mostly wore somewhat loose-fitting hosiery. The representation of textures in the paintings suggests a stiffer fabric than supple knitwear. The colours are of particular interest: a great deal of browns and greys, but also quite a lot of red and occasionally some green. This does not differ much from what we see in 16th-century paintings, such as those by Pieter Brueghel the Elder.

Garters

In these pictures we see, almost without exception, that the hose are held up by garters beneath the knee. In the excavation, a number of textile strips were recovered that might have been used for this purpose. They mostly are long bands, cut straight or on a slight bias. A still knotted but broken strip, cut on the bias from silk velvet (no 54T77), may well have been a garter. It had a remaining length of 13 cm on one side of the knot, and 34 cm on the other. Down the middle of it, a narrow silk band, woven with two tablets, had been sewn on with silk thread. Quite a lot of this band has survived. One side had been edged with thin silk cord; the remaining length of cord is 5 cm. Thread impressions are visible along both of the band's sides.

Another possible garter is a tablet-woven band with five turning points, almost black, 3.5 cm wide and 93 cm long.

Prinsenstraat 1996

After studying the finds of 2000, I took another close look at the finds from the 1996 excavation, hoping to find parts of hose that I had previously failed to recognise. Among the 64 pieces of woollen fabric, there were just two that could have been part of a hose. One, no 343T2, cut on the bias, might belong to the leg part of a child's hose, and the other, no 343T18, might be an inset corner at the top. Since neither shows any traces of stitching, we cannot be entirely certain about them.

Conclusions

A striking feature of all the excavated hose was the economy with which the material had been used, both in making the hose and in repairing them, and

the thrifty reuse of parts before the hose were discarded.

The method of joining up seam edges has yielded a great deal of useful evidence. Without it, fragments belonging together would have drifted apart in the process of washing, and only a few items would have been recognised as parts of hose. Since many of the hose are composed of a large number of – sometimes quite small – pieces, very little would have been discovered about how they had been cut out, sewn together and mended. It is remarkable with what skill the hose had been assembled and how carefully most of the repairs had been made.

Some of these garments, especially the silk-sewn twill hose, may have been made by members of the Tailors' Guild. But considering the many hose of coarse weaves and the huge numbers of repairs, we may safely assume that much of the sewing was done at home. In studying the textiles from this excavation, I have been continually filled with admiration for the skill of the anonymous makers of these hose.

The large numbers hose remains suggest that in the late 16th century, although knitted stockings were being adopted³, the common people still mainly wore hose. Their diversity is a valuable addition to what we know from other sources.

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³ From the same moat, fragments of fine knitted stockings were recovered both in 1996 and in 2000; in 2000 also a coarsely knitted child's hose was found.

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