How did the Romans make and use textiles?

By Caroline Stone

Author, researcher for Civilizations in Contact

Because of the circumstances under which Pompeii was destroyed, little has survived in the way of textiles, but fortunately there are written sources, archaeological evidence, the wonderful wall-paintings and comparisons with other cities of the Empire which make it possible to guess what might have been available in the market.

The Romans were extremely fashion conscious and had a wide range of textiles and dye-stuffs, both locally made and imported from all over the Empire. The later 1st century was a particularly good period, with the Pax Augusta greatly benefiting trade — even the route along the Silk Road, from Rome to Northern China, was peaceful for almost 40 years.

Pompeii itself had a flourishing cloth industry. There has been much discussion as to whether it was primarily for local use or whether it was also exported. The number of establishments connected with cloth manufacturing in the city has been estimated at 38, or possibly 43, so there was a substantial output. Certainly, production was on an industrial scale, not simply domestic, for in one workshop the names of the five men (weavers) and two women (spinners) are known from graffiti, while in another, there were seven and eleven, respectively. Wall paintings provide a good deal of information about both techniques and organization.

The cloth actually made in Pompeii seems to have been wool, although it is argued that not enough sheep were kept in the vicinity to allow for export quantities to be produced. It is quite possible that imported wool was also available. Different coloured sheep from different regions gave a range of natural shades: northern Italy was famous for its white wool, Spain for black, Asia Minor for reddish, Puglia for tawny and Cordoba for grey. The Taranto sheep had particularly fine fleece — it was protected by little coats, so that they were known as “jacketed sheep”.

The demand for wool also led to the development of sheep-raising and the accompanying textile industry in Britain, which was to be of great importance again in the Middle Ages, generating much wealth.

Not only the wool was imported, but also fashion. Roman Emperor Augustus, who felt the cold badly, had adopted “barbarian” customs, such as wearing trousers, and foreign materials and garments were also being borrowed from the conquered peoples of northern Europe. Pompeii had an important felt workshop with remarkable paintings, intended as advertising, which show the process in detail. Also, in the mid 1st century, Pompeian naturalist Pliny the Elder mentions felt cloaks — gausapa — as being a fashionable novelty. Another introduction, this time from Gaul, was the Roman answer to the hoody — the shaggy bardocucullus, waterproofed with the oil left in the wool, like modern fishermen’s jumpers.

There are numerous stages in the production of textiles, and surviving implements provide clues to the techniques used. Raising the nap on wool, for example, may have been done with teasels, found
everywhere in the hedgerows, as it was in Britain, as well as with metal combs. A pair of shears, used for subsequently trimming the nap of the cloth so that it is even, are almost identical to shears found at Chesterford near Cambridge.

The workshops at Pompeii are evidence of all the different stages of cloth production, from preparing the wool, dyeing, spinning and weaving, laundry, re-dyeing faded items, prêt-a-porter and patching together used clothes for slaves.

Colour was of great importance, and there was a wide range, as the frescoes from Pompeii make very clear. A couple of centuries before, the playwright Plautus listed a number of colours available in one of his comedies, and the poet Ovid, writing early in the 1st century, warned women to wear colours that suited their complexion rather than ones that were simply fashionable or expensive — and offered hints.

Dyeing was normally done at an early stage in the proceedings while the wool was still in the fleece — it has been claimed even when still on the sheep, but this seems unlikely — and the paintings at Pompeii show an amazing range of colours. Some were produced from locally available materials such as madder (red), whortleberry or blueberry (blue/purple), woad (blue), crocus (yellow), elderberry (grey-lavender), oak gall (black) — many of these plants can also be found in the British hedgerows — while other colours came from luxury imported dyes.

In a number of the paintings, the women wear green and even turquoise. These were always particularly difficult shades — lichen was cheap and produced a green, but the colour tended to be uneven and faded quickly. One answer was to dye twice — in yellow and blue — and this is probably the answer to the dress of the girl with the pen and writing tablet, known as “Sappho”.

Pompeii was a prosperous town, so it is likely that crimson (kermes from the scale insect Coccinus) — perhaps the colour worn by the wife of Pompeian baker Terentius Neo — was available from Merida in Spain, while indigo may have come from India. A small Indian ivory statue of the goddess Lakshmi was found in a house next to a major dye-works, so the town clearly had some contact with India, however remote. Indigo was a relatively new arrival — Pliny the Elder mentions its introduction in the reign of Augustus and gives the price as seven denarii a pound. It gave a much richer and more reliable colour than the native European woad.

The most famous of the luxury dyes was Tyrian purple, originally a high status colour — as it was to be again in the Byzantine Empire, where the term for royal was porphyrogenitus: born in the purple — produced from the sea snails, particularly Murex. Pliny the Elder gives a detailed description of the very complicated dyeing process, whereby thousands of sea snails are needed to produce a very small quantity of dye. Another sea snail, buccinum, was used for the dye known as “Phoenician scarlet”.

As always, when luxury goods spiral out of the price range of most purchasers, fakes and imitations appear. Egyptian papyri give recipes for faking expensive dyes, and the people of Pompeii would have had an inexpensive substitute for Tyrian Purple, fished from nearby Puteoli.

In order to prepare the cloth and make it able to absorb the dye better, various mordants were used. Different mordants could also vary the shade obtained. Alum was an important one and there was a considerable trade in it, but another was urine, also used in tanning and as a bleach. This was collected
from urinals (in the form of jars) and, slightly before the destruction of Pompeii, the Emperor Vespasian had introduced a tax on it, giving rise to the kind of comments that can be easily imagined. It was because of this that, centuries later, public lavatories in France were known as Vespasiennes.

The other most important textile at Pompeii would have been linen — beautiful and cool, but very hard to dye. Egyptian linen was considered the best quality, and it was imported in large quantities — together with glassware and luxury products from the East — through the nearby port of Puteoli. By this date, however, linen production had spread around the Empire to meet demand, and flax was being grown in northern Italy, the Damascus region of Syria, Cilicia, Spain — which was now producing a top quality product rivalling Egypt — and even Gaul. Pliny the Elder remarks that Gallic women, and perhaps also British, had come to prefer linen to their traditional wool for dresses. At Pompeii, which is hot in the summer, light fabrics would have been essential.

Cotton had long been known in Egypt, but did not come into common use in the Mediterranean until after the time of Alexander the Great. Herodotus, writing some 500 years before the destruction of Pompeii, knew that it came from India, but thought that it grew on trees. It is unlikely that it was woven in Pompeii, although the Romans had numerous mixed fibres: wool/cotton, cotton/linen, and so on. There were also a number of fibres not in common use today, for example nettles (ramie) and poppy, again used in mixtures. At Herculaneum, a fragment of cloth appears to be made of gorse, a material that was still being produced in southern Italy into the 20th century.

Even if it were not being produced in Pompeii, cotton as a fashion textile for social display would certainly have been available in the shops specialising in luxury and imported goods. There, the wealthy ladies of Pompeii might have found check and embroidered cottons from what is now Iraq and from India, which also exported a fine muslin cloth made of mallow fibre. They would also have found patterned linen from Gaul, painted muslins from Egypt, gold-worked or embroidered cloth, a speciality of Asia Minor (as it has continued to be almost to the present — a graffito in the felt workshop of M. Vecilius Verecundus mentions a tunic enriched with gold) and, of course, silk.

Apart from a small quantity of wild silk produced from a native Mediterranean moth described by Pliny the Elder, silk came from China to India, and along the Silk Road. The Pax Augusta — a long period of stability — greatly facilitated trade, and major centres of exchange were set up along the route. Archaeologists at Bagram in Afghanistan found two rooms in a large building containing "exotic things of beauty and worth" from China, India and Western Europe, some of which may have been destined for export to the Roman Empire. Merv was another important emporium, probably the furthest west that Chinese merchants came to sell their products to the Parthians, who acted as middlemen. By the time of the destruction of Pompeii, Damascus (62 AD) and the great Nabataean trade cities of Palmyra and Petra were either part of the Empire or closely linked with it.

The Romans apparently did not like the stiff, heavy Chinese silk — the paintings at Pompeii show a clear preference for light, soft, semi-transparent materials — so it was generally unravelled and rewoven, often mixed with cotton or linen, which of course also had the advantage of making a very expensive fibre go much further. Syria was a major centre of production, while Egypt, which specialised in luxury exports, made a silk-linen mix, often with woven decoration. Some Persian silk reached the Roman world and the Parthians, who were extremely skilful traders, sold back to China the lightweight Western gauzes without revealing that the fibre was originally theirs.
Fashion demanded ever lighter and more luxurious materials, but naturally there were complaints on both moral and economic grounds: the clinging, revealing dresses were considered immodest, “unRoman” — and there were constant concerns that the wealth of the Empire was being drained by India and China to pay for frivolous luxuries. While it is true that large sums — different figures are given, rising to hundreds of million of sestercii — travelled East, it is also true that the Empire had a flourishing export trade in wine, raw materials and manufactured goods such as glass and textiles. Sumptuary laws were periodically introduced to curb expenditure, but judging by the paintings, it seems unlikely that the people of Pompeii were discouraged either by the fear of “looking like prostitutes” or worry about the balance of payments from wearing the finest materials they could afford.

Then there were a couple of really exotic textiles unlikely to have been found in the shops, but which could perhaps have been ordered if anyone really wealthy wanted them. One was byssus, or “sea wool”, a very fine silky cloth, golden coloured, with a high sheen produced from the filaments of certain Mediterranean shellfish, especially the Pinna nobilis. If the Romans had had the option of making luxury clothing out of spiders’ silk (as has happened recently here in Britain — cloth pieces were displayed at the Victoria and Albert Museum in 2012), they would certainly have done so!

The other cloth was woven from asbestos and known in the Middle Ages as “salamander fur”. Although both Greek historian Strabo and Pliny the Elder noted that the slaves who worked with asbestos developed lung diseases, it continued to be made mostly as a curiosity.

Caroline Stone graduated from Cambridge, spent three years at the Jimbun Kagasha Kenkyusho Research Institute at Kyoto University and then worked at The British School at Rome, researching in the Vatican Archives. After some years writing and translating free-lance, she taught European History at university in Seville and continued to write, particularly on textiles.