

# THREAD OF TIME

## ~A HISTORY OF SILK

### Part 10: TODAY AND TOMORROW

Although modern synthetic fabrics have excellent properties and can be virtually undetected from pure silk there is still a demand for the real thing. Silk is still regarded as a luxury product and is often regarded as being for special occasions or as a means to impress. However, an increasing number of people are turning to silk as a means of managing allergies or minimising the affects of skin complaints. The organic nature of pure silk, particularly undyed silk seems to have properties that are beneficial in a range circumstances.

China and India are largest silk producers and the process has succumbed to industrialisation. Yields of mulberry leaves have been increased. Excess leaves are dried & turned into a kind of artificial worm food. Moths are kept in conditions that make them think hibernation has taken place so that breeding takes place several time as a year. In 2011, it was reported that the last traditional silk producer in a village called Jili, near Shanghai had closed. The factory was retooled to build escalators for shopping centres. During the Victorian era, Jili had been famed for the high quality of its silk, awarded gold and silver medals at the 1851 Great Exhibition.

Companies in India and USA have developed methods that do not rely on silk worms being killed in the process. The technique is known as "ahimsa". Ahimsa means "peace" and is usually used in the context of living at peace with all living things or doing no harm. The process was first developed in 1991 but it took another ten years before ahimsa silk became commercially available. Ahimsa silk is produced by either allowing the moth to escape the cocoon naturally or, more often, cutting into the cocoon to allow the moth to escape. The cost of producing ahimsa silk is considerably greater than conventional production methods because the fibres having been cut are much shorter. Therefore, there is a higher proportion of waste. Also the filaments need to be spun in order to hold them together before twisting with other filaments to create a usable thread. This means the woven cloth has less lustre than conventional silks but manufacturers claim that the finished cloth is in fact softer.

Although producers of ahimsa silk aim to produce their silk in a more ethical way, there have been some suggestions that the process is no more humane than the killing of the moths before they hatch as in conventional silk production. The claim is that once the female moths have produced the next clutch of eggs they are destroyed and male moths are refrigerated between the times they are needed for fertilisation.

Certain styles and names seem to have a timeless appeal. Hermes scarves for example, with their distinctive designs on silk twill squares that have been woven in the Lyon area since 1937. Macclesfield Neats, a style for men's ties that uses small, geometric designs known as the English Look is still popular and sold across USA and Europe. Italian silk from the area around Lake Como has long been regarded as among the finest in the world.

Although the reputation of silk as a prestige product took something of a bashing in the 1990s when the introduction of lower grade, inexpensive, sand washed silk flooded into almost every high street shop, it has largely recovered. However, the future for silk may not simply lie in haute couture. Among its many qualities, silk has a tensile strength greater than steel. Some silks, notably spider silks also have considerable elasticity. It is just these qualities that scientists are looking at that may give silk additional value in medicine in the future. Silk has been used since the pharaohs were in control as a means of sewing up wounds and now scientists think it's high strength, biodegradable properties could be used as scaffolding to hold stem cells as they regenerate diseased tissues, such as bone, kidney and skin. Others are looking at how silk could be used as containers that could hold cells or drugs while they are introduced into the body and then disintegrate when their job is done.

Just as the ancient Chinese found many uses for silk, multiple uses are being found today. Although experiments with spider silk in the past may have proved too complex or costly, modern science is beginning to change the possibilities. Experiments with the genetic modification of goat genes with spider genes have led to the goats producing silk proteins in their milk. Also, experiments to implant spider genes into silkworms have led to the offspring of the modified moths producing silk that is similar to spider silk (even stronger and more elastic) without affecting the quantity. I have no idea where all this will lead but I suspect that the silks of the future may be unrecognisable to the people who first discovered it 5000 years ago.