

For the greater part of the very long history of the textile industry, its various technological advances have been primarily concentrated on producing plain round yarns ever more perfectly and speedily. The extensive range of decorative elements available for the majority of that period has been offered by the introduction of colour, and by woven, knitted or applied patterns, rather than by the yarn itself. Thus, the technological advances seen in earlier times related to the creation of fabrics, and then to the application of pattern in those fabrics (by printing, painting, embroidery, appliqué, beadwork or other means) or they related to dyeing and pigmentation. The fancy yarn may have had its beginnings in the work of those early weavers who would occasionally combine the threads they used in different ways as they were weaving, to produce a wide variety of colourful and textural effects. In the following paragraphs, we shall attempt to offer an impression of the enormous range of developments in textile techniques that, in due course, led to the invention of fancy yarns and then to the development of a variety of commercial equipment for the production of fancy yarns and fancy doubled yarns.

Archaeologists have been able to push our horizon of knowledge to some considerable distance, thanks to some fortunate accidents of environment that have led to the preservation of textile materials, which are otherwise rarely discovered within the archaeological record. The earliest surviving textile fragment, of linen, discovered at Çayönü in south-east Turkey, has been radio-carbon dated to around 7000 BC.<sup>1</sup> It does not include any evidence of a fancy yarn, but of course the absence of physical evidence is not proof of the absence of the techniques: all it proves is that we have yet to discover any surviving examples – a very different matter. In fact, even that statement is too strong, since during the investigation of burials in Chinese Turkestan, near Cherchen and Loulan that was reported in ‘The Mummies of Ürümchi’ by Elizabeth Wayland Barber<sup>2</sup> a very fine overspun yarn (that is, a very highly twisted yarn) was found, which has been dated to around 1000 BC. Along with this very tightly twisted overspun yarn, evidence was

found of a fabric that included, in a manner which made it clear that this was intentional, a yarn so thick and so lightly twisted that by modern standards it would class as a roving rather than as a completed yarn. We can deduce, therefore, that these early artisans were able to envisage the textural variations that would result from a variation in yarn thickness, and were able to make the yarns that they spun either thicker or thinner than normal, to suit the textures and patterns that they had in mind.

It is somewhat easier to find evidence for metallic yarns. These were most often made of thin strips of metal – in most cases, silver-gilt or silver – wrapped around a core of silk or linen, or in some cases they might be fine threads or wires produced by wire-drawers. By the eighteenth century, there seem to have been four basic types of thread whose definitions were so universally accepted that it was clear they were of no recent date:

- the plain (filé) thread, which consisted of fine strips wrapped around a core to produce a round yarn of even diameter and therefore of consistent lustre;
- the frost (frisé) thread, which was similar to the plain except that one end of the core was more tightly twisted than the other, resulting in a more crinkled appearance, which reflected the light unevenly;
- the plate, which omitted the core, and used the metal strip laid flat against the surface, producing a high level of reflectance and therefore a very bright appearance; and
- the clincon, which consisted of a strip of plate twisted around a frost thread – this would tend to produce a thread that alternated a flat area and a crinkled area, and could be seen as an early metallic fancy doubled yarn.

In addition, the ‘plate’, being based upon a drawn metal wire, was capable of many variations. It could be passed through rollers to flatten it and broaden it to varying degrees, or even to apply some texture to the surface. Many of the metallic threads available to embroiderers today are based upon manipulations of ‘plate’ threads, although in most cases they are no longer made with real metals, but with metallic-coloured laminated films.

There is evidence of these metallic ‘yarns’ or ‘threads’ very early on: they were well known in Roman times, for instance, and there is considerable use of metallic yarns of this type in fabrics for ceremonial and ritual garments throughout much of history, not only in Europe, but indeed throughout the world. The makers of military dress uniforms and ecclesiastical garments have been considerable users of metallic thread from very early times right to the present day. Not for nothing do heralds, even now, include two metals, *argent* (silver) and *or* (gold) in their palette. In most cases, especially in these earlier times, the yarns would have been used to provide a rich border to a garment, and often the design would be embroidered,

rather than woven or knitted. Gradually, however, the yarns were included within the structure of the fabric itself, instead of simply being applied after the garment had been made. ‘Cloth of Gold’ is not a saga-writer’s invention, but a reality.

The Elizabethans, and their contemporaries throughout Europe, made considerable use of fine gold and silver threads in embroidery and lace making. A colour illustration is included on Plate 1 (opposite p 80), which shows Tudor metallic thread embroidery embellishing a glove. Some of the other embroidery is done using hair – evidence that the use of unexpected materials as embellishment is not confined to recent times. It is accompanied by illustrations of modern yarns that include a ‘metallic’ element, or at least an element which aims to produce the same effect.

The early metallic threads found an extension to their use when, in the eighteenth century, they began to be included in the designs of silks for apparel, and the classification described earlier became widespread.

Then, also in the eighteenth century, a material described as ‘floss silk’ became widely used in ornamentation; it consists of bundles of silk filaments tied across the main strand of silk, an effect that, to modern eyes, is distantly reminiscent of a chenille. This form of ornamentation is shown in the other detailed colour picture on Plate 1, and is accompanied by a range of modern chenille and chenille-type yarns that demonstrate the similarity in structure and morphology, although, equally, it becomes clear that, in most cases, the modern effect is both smaller and more densely packed.

Indeed, the chenille in fact may be the earliest true ‘fancy doubled yarn’ to have been developed. It is mentioned (although as a thread for embroidery) in ‘Art of the Embroiderer’, published in 1770 by Charles Germain de Saint-Aubin,<sup>3</sup> who held the title of Designer to the King (Louis XV). In fact, Saint-Aubin’s text on chenille appears to be ambiguous, since it suggests that there may have been a method for ‘spinning’ a chenille yarn, although Saint-Aubin also notes that the alternative method does not produce a yarn of the high quality of the chenille made using the intermediate weaving process. This is particularly surprising since, until very recently, the only known method for producing this archetypal fancy yarn was by weaving a fabric that was then slit along the warp, following which each section was twisted to produce the characteristic ‘furry’ look of the chenille yarn so that it appears round, rather than flat or tape-like; as opposed to the process developed in the 1970s, which combines the component yarns by doubling the core yarns in such a way as to entrap the effect yarns. Thus Saint-Aubin implies the existence of a spinning process for chenille 200 years before the first patent now known!

In the past, many unusual materials were used in embroidery and other applied embellishment, even when they were rarely found woven or knitted into fabrics. The metallic yarns we have already mentioned, along with floss

silk and chenille, but other items have included hair, leather and straw. Even in prehistoric times, there is evidence of clothing that had been decorated using beads made of bone and antler.

It was not until the late nineteenth century that the range of fancy doubled yarns available today began to be developed, and with it, an increasing profusion of machinery intended to create specific effects. This, in turn, meant that the quantities that could be produced were increased, making it possible to use the yarns to create fabrics, rather than simply to embellish them. As electronic process control became increasingly prevalent, and much more importantly, increasingly flexible, reliable and useful, it became far easier to produce variable and varying effects which, at the same time, attained a consistent level of quality. This becomes still more important when we realise how difficult it is to detect faults in a fancy yarn, and particularly in a fabric incorporating fancy yarns, by eye, since it is intended to be uneven. Because the unevenness of structure can be expressed in the appearance of unevenness of colour, how can we reliably identify any faults of colour and structure? We also now have available to us an almost limitless selection of yarns, which can combine structural effects with cross-dyed or other processing effects. The range and variety available to yarn designers, and through them, to fabric designers, have become immense. Indeed, that scope continues to increase as those responsible for the equipment become yet more inventive, combining widely differing production methods to create a stable yarn after a single passage of the machine, and thus producing previously unimaginable effects. The advent of precise electronic control has also meant that it has become possible to reduce, and even to eliminate, some of the earlier problems that were experienced with some yarns created using variable input speeds. In particular, considerable thought and effort has been devoted to reducing what was previously considered to be an unavoidable failing in certain slub yarns, that is the appearance of a weak point following the slub, which is, after all, simply a thick place in the yarn.

As we follow the development of mechanically-produced fancy yarns, it is often extremely tempting to speculate on the possible design inspiration for some of those yarns – one can imagine, for example, that the slub was first developed in an attempt to produce a ‘linen-look’ using cotton yarns; but who devised the first fabric that could be cut warpwise to produce a chenille, and why? This aspect of textile history, however, fascinating as it is, does not truly fall within the scope of the present volume, in which we must concentrate on the here-and-now, and on the range of production methods that are available to us today.