



Gottfried Semper

Style

**Style in the Technical and Tectonic Arts;
or, Practical Aesthetics**

Introduction by Harry Francis Mallgrave

Translation by Harry Francis Mallgrave and Michael Robinson

Texts & Documents

by Willemin is the veil ascribed to the Sacred Virgin of Chartres (see "Silk").

Other cotton fabrics imitate the hairy surface of wool or the artificial fleece of silk-velvet, partly smooth, partly patterned; these include velveteens and velverets. They have a character of their own that distinguishes them from the genuine wool and silk they are intended to imitate. Formerly, this difference was emphasized candidly, and the need to make these cheap materials derived solely from their warmth and durability (the old Manchester materials, still so beloved by English workmen, are a distinctive and appealing type in their sturdiness and peculiar, indeterminate brown color). But now the lack of style has crept in here as well, as we now see cotton-velvets emulating silk-velvet, posing as the more expensive material.

§ 41 Wool: Properties of This Fabric and Its Application

Wool is without doubt the most beautiful fiber (even including silk); it is also the material whose style is richest and fullest. The fine curly hair of sheep produces a soft loose fabric, which conducts heat poorly and is thus highly suited to keep heat in when it is cold outside and keep it out when it is hot. At the same time, the specific weight of wool is lower than that of any other fiber (only 1.26), thus the fabric also has the advantage of great lightness. Unlike flax and, to a certain extent, silk, wool is not fresh to the touch, but it has great specific warmth. This is partly explained by the scaly texture of wool hair and its irritation of the skin. These attributes, taken together, make woolen fabrics more appropriate for outer covers and dressings than for undergarments. Fabrics serving this purpose were made most artfully at a very early time in Asia, where the finest kinds of wool were produced. Herodotus says expressly that the beautifully woven outer clothing of the early inhabitants of the Euphrates valley and Arabia, with its rich colors and embroidered emblems, was made of wool then as now. "They wear," he says, "a linen <or cotton> shirt <*sindon*, *kithon*> reaching to their feet. Over this they wear another wool garment of the same kind <in fact a *kithon* or short-sleeved shirt> and throw over this a woolly white shawl <*klanidion*>." The last is perhaps the *actaea* of the Ionian Greeks, which developed into the stola of Roman clerical vestments. It was a broad, lavishly fringed wrap, which sometimes took on the dimensions of a cloak. It was probably made of finest cashmere and resembled cashmere shawls. (See under remarks on clothing.)

The branch of the Asian wool industry concerned with making tents, wall coverings, and carpets operated on an even grander scale. In high antiquity these were extremely important furnishings for domestic interiors and formed one of the main articles of industry and trade in Babylon and Nineveh. Nowhere were they embroidered more magnificently or woven with more vivid colors than in those cities. Tyrian carpets and Ionian wools, in which it was principally the Milesians and Ephesians who distinguished themselves, came closest. Their wool approached the finest Arabian and cashmere wools.¹⁵

The Bible makes it clear that the Egyptians, too, have carried out wool manufacture and carpet weaving on a grand scale since antiquity. The tapes-

tries and coverings of the Tabernacle were probably made of hair, decorated with embroidery in colored wool thread or gold wire. There is no doubt that many of the brightly colored outer garments and carpets in Egyptian paintings and sculptures were intended to represent wool, although to my knowledge no fragments of such materials have survived. It is known that these were worn principally by the poorer classes and that it was strictly forbidden for priests to wear animal fabrics next to their skin. Priests were permitted to use woolen garments only as outer wraps.¹⁶ The magnificent patterns and colors of depicted hangings and carpets indicate without doubt that woolen, embroidered, and woven fabrics were represented here. According to Strabo (17[.1.41], p. 559), Chemmis was the capital of Egyptian wool manufacture, and it retained its reputation until Rome conquered Egypt.

Wool's characteristic property of felting was also exploited very early by these peoples for industrial purposes, especially for headgear (the red oriental fez is ancient; it is modeled on the likewise purple-red Assyrian miter), carpets, and footwear. The Tomb of Cyrus was draped with purple sheets or felt carpets from Babylon.¹⁷ Demetrius Poliorcetes wore purple felt soles with rich gold embroidery at the front and back.¹⁸

The land of marvels, India, was already manufacturing and exporting its cashmere shawls from the very earliest times; this exquisite wool product has probably undergone no fundamental change in manufacture or style for thousands of years. The *Ramayana* mentions the wedding gifts King Videha gave to his daughter Sita. These included *wool cloths*, furs, precious stones, soft silk, polychrome dresses, and jewelry, in addition to coarse wool fabrics or carpets stretched over carriages. The phrase *wool cloths* can only refer to those finest of Indian wool fabrics, in which the raw material under consideration appears in the most refined stage of its technical-stylistic development.

Wool was the most popular material for clothing at the high point of Hellenic culture. The full fall of wool folds replaced creased and undulating linen stuffs and spun cotton fabrics (*vestes undulatae*). The Ionian, old Hellenic chiton (the undergarment) was of linen, the Dorian of wool. This choice of the Hellenes, as they grew toward self-knowledge, is of the greatest possible interest for the question of style to the extent that it pertains to the raw fiber material. Greek wool was simple, uncheckered, unpatterned, and—unlike the Assyrian *χλαμίδιον* [mantle]—without a hairy fringe. It was simply and solely calculated to give the most beautiful, finest, and fullest fall of folds, undisturbed by any pattern or broad fringe work. The strength of the weave, the fineness of the material, and its color were chosen to suit the sex, size, and character of the wearer. The domestic manufacture of fabrics and clothing was always held in esteem by the Greeks, and numerous authors can be cited to this effect. Not until after the reign of Alexander did Asiatic luxury and a principle of fashion less favorable to wool reappear—a principle that had predominated earlier among the Ionian tribes, before the time of the highest development of Hellenism. The heroic pageantry worn in the tragedies probably made its own contribution to this radical change in dress even earlier.

The Romans, who in early periods sometimes still wore sheepskins like those of shepherds in the Roman campagna today, were introduced to Greek tastes in clothing at an early stage. Yet a barbarian element remained that can be seen in their drape, which was conspicuous and heavy. In keeping with this heavy style, a kind of felt was used for cloaks, instead of the light wool fabrics worn by the Greeks. Wool was fulled and acquired a feltlike density. Here too everything later became Asiatic, and silk partly replaced wool.

It is clear from Pliny's well-known exposition of sheep breeding and wool manufacture in the Roman period [*Historia naturalis* 8.72–75] that the ancients correctly judged the attributes of the different kinds of wool and applied them judiciously. They seem to have kept more to naturally colored wool than is now the case. This Roman polymath found Apulian wool superior even to Milesian. Spain was famed for its black wool. Alpine wool was distinguished by its whiteness. Erythraean and Batavian wool were reddish brown, Canusian yellow, Tarentian blackish, Istrian and Libernian more like hair than wool and not suited for soft-haired, sheared cloths. It was processed to make synthetically checkered Lusitanian materials (similar to Scottish, so-called plaid fabrics). Narbonensian and Egyptian wool were said to be similar, and made clothes so durable that they could be dyed when they became worn out and still have a generation of use in them. Another kind of wool resembling goat hair was said to have been used for carpets from earliest times and was mentioned as early as Homer. The Gauls had their own method for dyeing these coarse carpets, the Parthians another. Felted wool was resistant to the sword and even to fire. This industry seems to have flourished chiefly under the Gauls, who created the shaggy camp blankets that bear Gallic names.

We know that the ancients knew to treat combed wool and short, fine carded or woven wool differently and were familiar with the two methods of wool preparation—combing and carding. The former was used, as it is by us, for passementerie and embroidery; the latter for the manufacture of fine scarves and other such things. It is clear from various passages, as well as from the numerous technical terms for materials that occur in the works of ancient writers, that the wool industry at this time produced at least as wide a range of products as we do. Most likely this broad range of manufacture was driven much less by the manufacturer's whim than it is now but was instead based on a thorough study of the materials, the particular ways to treat them, and the special purposes for which they were best suited. It is clear from Pliny's chapter that the famed *embroidered* Babylonian materials and the no less famed many-threaded, *woven* Alexandrine fabrics, as well as the Phrygian carpets and clothing called Attalic (embroidered through with gold), were *wool*, not silk.

Among the exquisite properties of wool is its receptivity to dyestuffs and its capacity for deep color saturation. Owing to the velour and yet naturally lustrous surface of wool (which always retains an organically translucent property, something foreign to flax, cotton, or silk), even the darkest tincture with which it is dyed always appears as a color and not as an indeterminate

black. It takes on bright and shiny colors no less agreeably. These never appear opaque or applied (as is the case with cotton) but seem transparent and united with the material that they fully penetrate. We should exploit these marvelous properties of wool as much as possible yet in doing so observe that style still practiced by the Orientals, Indians, Persians, Arabs, and Turks, although it is at best only a faint reminiscence of the infinitely superior techniques of the ancients. It seems permissible to formulate a positive principle of style with respect to dyeing wool. Examples of the best Oriental wool fabrics show that wool should be dyed according to a principle opposite to that suitable for dyeing linen (and for dyeing cotton as well, although less decidedly). This principle derives from wool's warm character and full fall of folds. *The polychrome system selected for a pattern using this material must as a rule be positive and warm and limited to saturated, full, and sustained tones.* The material of Egyptian fabrics portrayed in wall paintings is easily identified by knowing that wool fabrics unfailingly appear dyed in deeper, fuller, and warmer colors, whereas linen and cotton are characterized by a light color and colder tone in which blue, green, and violet predominate.

More on this and other aspects of ancient and modern Oriental polychromy will follow below.

Already in classical antiquity, northern and western Europe produced many woolen textiles that came to southern markets as highly valued articles in trade. The Celts and Iberians provided smooth, bombazine-like, checkered plaids; the northern Gauls, Germans, and Scandinavians produced shaggy velvet and other wool stuffs that imitated fur or were felted (*gausape* [cloth of woolen frieze], *villosa ventralia* [shaggy abdominal belts], *amphimalla* [cloaks wooly inside and out]), frieze (*togae crebrae papaveratae* [closely woven togas bleached with poppy]), and camlet. Each year Charlemagne presented his people with frieze cloaks, which were so widely esteemed abroad that they were even valued as costly gifts in Oriental courts.

Among the Saxons and Scandinavians wadmal, a coarse homemade wool fabric, was used for barter in place of money. Several kinds were distinguished, coarser and finer, including some striped fabrics. Loden was very strong and thick, similar to the fabric that Pliny said would resist iron and even fire. It was even used as a kind of armor, and if in a wrestling match a man fell into a fire in the hall, his loden coat protected him from burns. Flock or felt was even sturdier. Knitting wool was used in the Baltic and North Sea countries from the earliest times for knitting large stockings or trousers (*Hasen*), usually blue, which were commonly worn by both men and women. (See Weinhold, *Altnordisches Leben*.)

German wool manufacturers were famed for their fashionable materials from the tenth century onward. From Germany finer wool weaving spread toward Flanders and was particularly favored by the protection offered by Baldwin III. He summoned to his states German weavers and spinners who understood how to prepare the finest cloth, especially scarlet, which was almost as highly esteemed as purple silk.¹⁹ From Flanders and Belgium fine

cloth manufacture moved first to England and France then to Florence and other industrial cities of Italy such as Milan, Genoa, and Naples. This took place after Florence had become a grand duchy, but wool weaving (*arte della lana*) had flourished there even in the early fourteenth century. According to Giovanni Villani, there were already 200 stalls for the sale of wool in Florence at this time, 70,000 to 80,000 pieces of cloth were manufactured each year, and 30,000 people lived off the industry. In those early times most of the trade in fabric, which was usually coarse, went to the Levant. Later (in 1460) the number of stalls had risen to 275, after which the industry dwindled in size from century to century.

During the civil and, subsequently, religious disturbances in Flanders and Brabant, many of the most skillful weavers emigrated to foreign states: most of them to England, some to Germany.

To them England owes the blossoming of its wool industry. In the mid-sixteenth century over 100,000 weavers fled Flanders, most of them to England. Incidentally, English dyers, especially woad dyers, were already famed in classical times. The Scandinavians also held English and Irish products in high esteem in the eleventh, twelfth, and thirteenth centuries.

[Jean-Baptiste] Colbert made French cloth manufacturing fashionable. Very old factories existed in Switzerland as well, especially in Zurich.

German wool products too were famous in antiquity and competed with English and French fabrics with varying success. Certain products— for example, the long worsted yarn so necessary for embroidery, passementerie, and knitted fabric—are nowhere as beautifully prepared and dyed as in northern Germany, particularly in Hamburg and Holstein. The long-haired angora-like sheep of the North Sea coast and its heaths supply virtually the only suitable raw material for this. A few historical notes on carpet mills and embroidery plants will follow later.

Someone with a thorough knowledge of raw wool should investigate and compare it, not just for its chemical and microscopic properties but especially for those aspects that elude scientific experiment and rest upon indefinable material properties. Recognizing, evaluating, and judging the true importance of these properties requires artistic as well as scientific understanding. In this way he could produce a monograph for technicians and manufacturers, practically and instructively developing matters that I—because I am unfamiliar with wares and have also limited myself to the program I set—can only hint at here. The same is true of the last fiber that remains to be discussed, namely, *silk*.

*Silk*²⁰

§ 42 The Non-Greek Silk Style

We are assured by Stanislas Julien, who made Chinese industry the object of his generally useful research, that the art of raising silkworms, cultivating mulberry trees, and manufacturing silk fabrics has been documented in China as far back as the twenty-sixth century B.C.