

Egypt. Fragment of Coptic woollen textile from the Fayum.

*(Photographs by Reuben Goldberg)*

## WARP AND WOOF

WARP AND WOOF, the University Museum's current exhibit of historic and contemporary textiles, has a double aim: to spread before the visitor the almost miraculous products of the primitive loom, and to suggest how infinite are the decorative possibilities to be discovered in ancient and primitive design. Side by side with the rich fabrics of the past we have placed newly-created textiles which, while patterned on this past and embodying traditional motifs, are fresh and gracious adjuncts to modern living and a challenge to contemporary taste.

Museums have often served as sources of inspiration to designers and technologists, and this is not the first instance of fruitful cooperation between art and industry. It is, however, the first time that motifs from museum objects have been so faithfully applied to a whole breathtaking series of designs. In this case, it is a leading creator of fine fabrics who has turned to the University Museum for the designs embodied in his new group of woven and printed textiles. These designs have not been taken from textiles alone. Other materials—woodcarvings, sculpture, porcelains and paintings—have contributed their special decorative elements to the new medium. That is what makes the objects in a museum so valuable a repertoire for the designer, whatever his field. For the ancient or primitive artist created his designs so subtly and so surely that they are valid in all media and can be translated—whether by brush or chisel or loom—into new, yet equally significant languages.

The consideration of the development of the textile art from its crude beginnings in the Neolithic era to its present state of mechanical perfection is an instructive and humbling experience. In all the long history of the weaver's art, nothing is more striking than the fact that the ancient products of the primitive loom have never been surpassed by the fabrics turned out with such efficiency by the modern power-driven loom. Nor have modern dyes, despite all the advances of chemistry, achieved the rich and varied colours known to early dyers. As for

design, it is doubtful whether one can speak of "progress" when confronted with the rhythmic and balanced patterns evolved so long ago.

All weaving, from the simplest to the most complex, is effected by a system of cross-threads: the static *warp* and the dynamic *woof* (or *weft*) which moves across the warp, alternately over and under its threads. In cloth weaving, the loom is set up so that the formation of the *shed*—the space left by the raising and lowering of the warp threads for the introduction of the woof—automatically produces the pattern. More complicated designs may be obtained by the interweaving of extra systems of wefts or warps. This was the technique employed by the Japanese weavers in some of their amazingly intricate designs. When extra warp or weft systems are used, the resulting textile is known as *compound cloth*. In *tapestry weaving*, additional threads are inserted by hand where the decoration is to appear. Most of the designs on Greek and Roman fabrics were produced this way, and many of the wonderful textiles of ancient Peru are tapestry-woven. In the "ikat" technique, the pattern is carefully measured and dyed into the threads before these reach the loom.

The looms which gave us such superb textiles were the primitive *hand-loom* and the later *treadle-loom*, a much improved form which brought the feet into play. The *draw-loom*, a still further perfected type of treadle-loom, was developed in the East, where it is used even today. Europe had the treadle-loom in the thirteenth century and mediaeval illustrations show us the various forms employed for the different cloths. There were special looms for cloth, linen, silk, and damask, and looms bearing a supplementary warp for the weaving of piled fabrics. But always the principle remained the same, and even mechanization did not change the basic processes of weaving. Rapid and efficient though it is, the power-driven loom repeats the age-old movements of the craftsman's skillful hands.

The four great textiles—linen, wool, cotton and silk—are associated with four great civilizations of the ancient world. *Linen* was Egypt's specialty. Flax, apparently the first of the great natural fibres used in cloth-making, was spun and woven in the Nile Valley as long ago as 5000 B.C. It is linen, stiffy-pleated and protruding, or almost invisibly clinging, which clothes the familiar figures of Egyptian art. So delicate

were some of these linens that a whole robe of the transparent stuff could be drawn through a finger-ring. The ancient home of *wool* was Mesopotamia. This was the material of daily wear, and the fleece-like *kaunakes*, a luxury woollen depicted as the garb of gods and kings, was prized throughout the ancient world. Indeed, the name by which we know it was given it by its Greek importers. *Cotton* was native to that other early centre of civilization: India. The earliest cultures of the Indus Valley show a weaving industry based on this fibre. With cotton, handled in masterly fashion, Indian weavers produced the exquisitely delicate Dacca muslins. *Silk*, that most glamorous of fabrics, came out of China by the Old Silk Route. From very remote times, the Chinese had known the secret of converting the fine filaments spun by the silk-worm into a gleaming cloth which seemed mysterious and infinitely desirable to the outside world. At first, and for a long time, silk was exported only as a finished product. In the first century of our era, the silk-industry established itself in the Near East: at Alexandria, at Antioch and Jerusalem. The great Byzantine silk-industry dates from the fourth century. In the same century, the victorious Sassanid dynasty of Persia carried off the best of the Byzantine weavers; so began that Persian silk-industry which was to have such a profound influence on the styles of Asia and Europe. Meanwhile, in Egypt, the greatest of the Christian silk styles, the Coptic, had developed (second to eighth centuries). Thanks to the dry climate of Egypt, textiles of this period have survived, and we have fragments not only of the native Coptic textiles but also of the products of Syrian and other foreign looms. In the ninth and tenth centuries, the Byzantine silk-industry revived. Its influence—along with that of the Spanish-Islamic style—is visible in the later Sicilian style. The silk-industry in Sicily owed its impetus to King Roger II who, in the twelfth century, imported weavers to the island. Another king, Frederick II, carried the industry to mainland Italy where its career was long and brilliant.

In textile design, it is the East which is important. It was there that the traditional patterns were evolved, often on the basis of very ancient motifs. And these traditional patterns were perpetuated by European weavers right up to the eighteenth century. A good example of design transmission is the old Babylonian motif of the palm-tree flanked by two mythical animals. This motif was inherited by the Assyrians and used

as a decorative element in their famous tapestry-cloths. The same tree appears with its flanking beasts in the characteristic symmetry of Sassanid textile design. The enormous vogue of Sassanid stuffs and the great vigour and intelligence of its style carried its traditions far in space and time. Thus we find the same tree—highly conventionalized—on much later Islamic, Sicilian and Italian textiles. Even the Flemish heraldic patterns of the fifteenth century are reminiscent of the old design; here, however, the two beasts face each other across a crown or shield. In contrast to this symmetrical animal style is the overall floral pattern, free and rhythmic as in many Persian textiles, or more conventionalized as in the jewel-like decoration of Indian stuffs. Often the recurring element in these oriental designs is the stylized pomegranate, and this motif becomes one of the commonplaces of Renaissance fabric design.

In the Far East, too, Persian and other influences were felt, but on the whole the designs on Chinese silks have been governed by native canons. Usually these designs are not merely decorative but are full of meaning; they may embody philosophical ideas, religious symbols, emblems of imperial authority, wishes for good luck, or even puns based on the names of the objects depicted. The Chinese are perhaps best noted for their fine silk tapestry and their superb embroideries. The Japanese are among the world's most skillful weavers and dyers. Intricate weaves, marvellous colour contrasts and designs of great originality and consummate style characterize their best work. Their printed fabrics, too, are unsurpassed.

In the West, Italian, Flemish, Spanish and French weavers produced sumptuous and elegant fabrics rivalling those of the East: velvets, fine linens, silk and satin brocades. But it was not until the nineteenth century that European textile design freed itself from the old, largely oriental tradition. When it did, at Lyons, the result was a more realistic handling of forms in which an impression of depth was attempted. It is doubtful whether this new realism represented an advance over the older concept of surface decoration; certainly the patterns themselves are feeble compared to the infinite richness of Eastern and Renaissance design.

Ancient America, like the ancient Orient, achieved great things

with the loom. The textiles of pre-Columbian Peru show a knowledge of all the various weaves known in the East—double cloths, tapestries, brocades, compound weaves, etc.—and of several weaves which seem to have been unknown to the Old World. Versatile in weaving techniques, the ancient Peruvians were equally ingenious in the matter of superimposed decoration. They embellished their textiles with embroidery and painting and practiced resist dyeing.

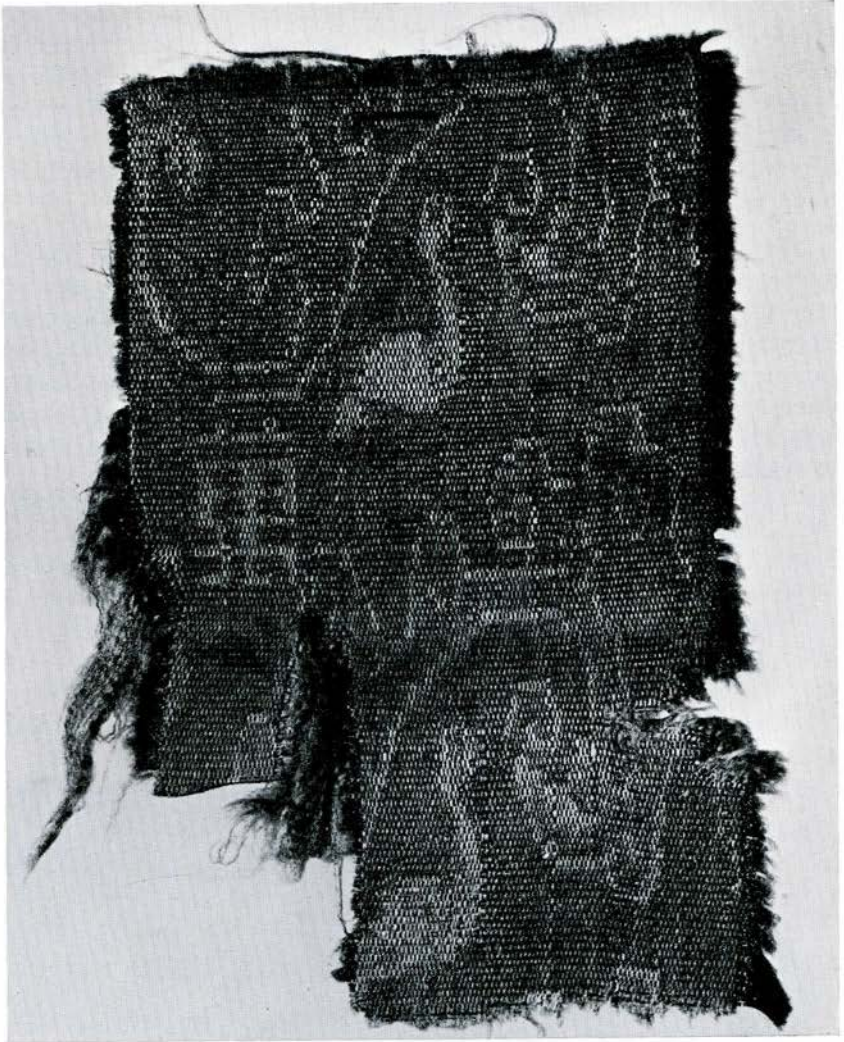
Looking at the old, and thinking of the new, one feels that the greatest lesson the past holds for us lies not in the patterns it evolved, but in the fact of fine craftsmanship, born of a pride that is not content with what is merely adequate. Let us hope that the blind and indifferent machine will not tempt us into a like indifference, but that we will come to use it as well as these weavers used their simple looms. We are offered here—and elsewhere, happily—the proof that such a hope is not vain.

C.-J. H.



Early Georgian damask. English or French, c. 1750.

*(Lent by the Philadelphia Museum of Art)*



China. Han dynasty (206 B.C.—A.D. 220). Silk fragment of plain compound cloth weave with woven pattern of herons and Chinese characters.

*(Lent by the Philadelphia Museum of Art)*

Persia. Cut  
velvet panel.







Turkey. Cut  
velvet panel.



Asia Minor. Tapestry. Early sixteenth century.



Fragment of plain compound satin, brocaded (silk). Spanish (?),  
eighteenth century.

*(Lent by the Philadelphia Museum of Art)*

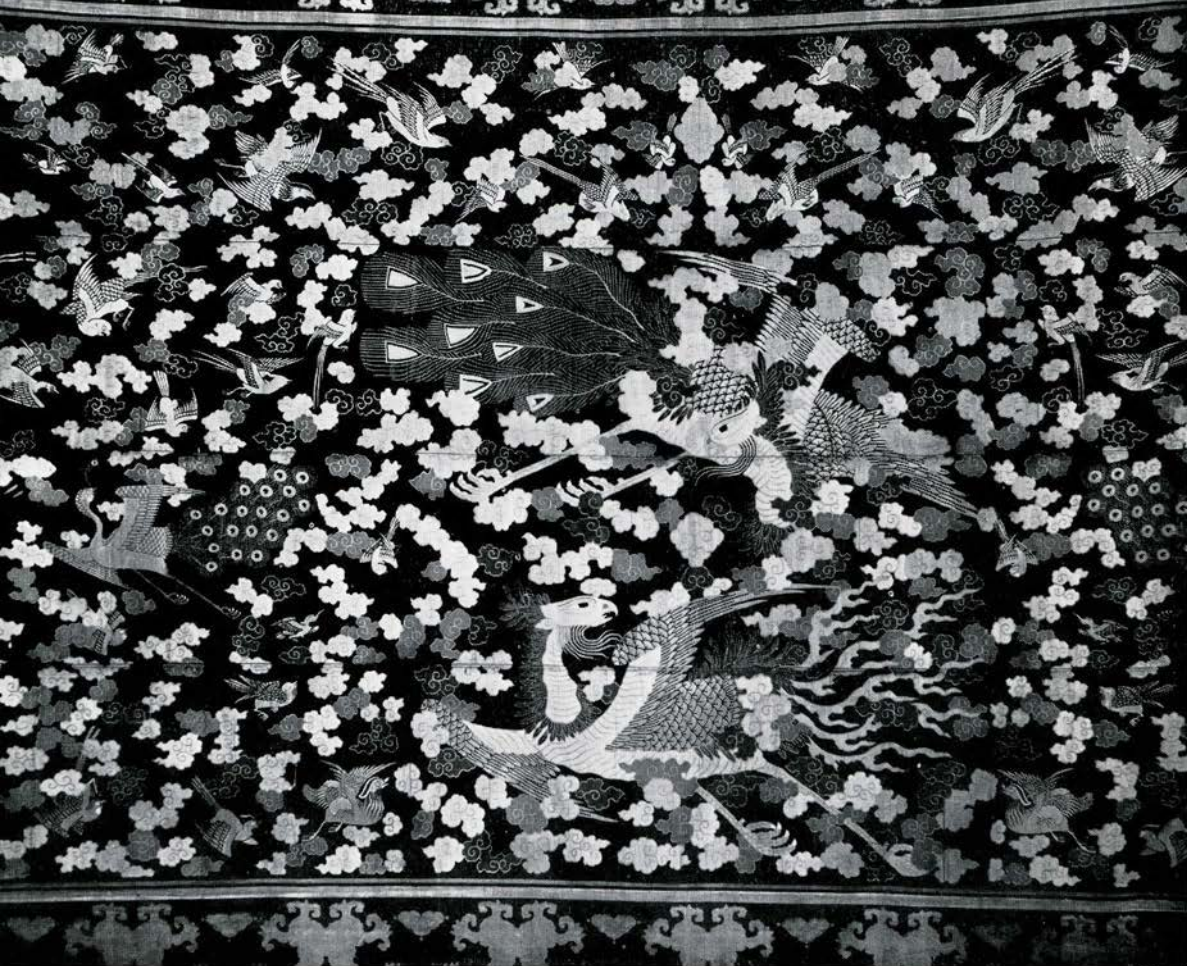


English or French  
damask. Eighteen-  
th century.

French ciselé void-  
ed satin velvet.  
Late eighteenth  
century.

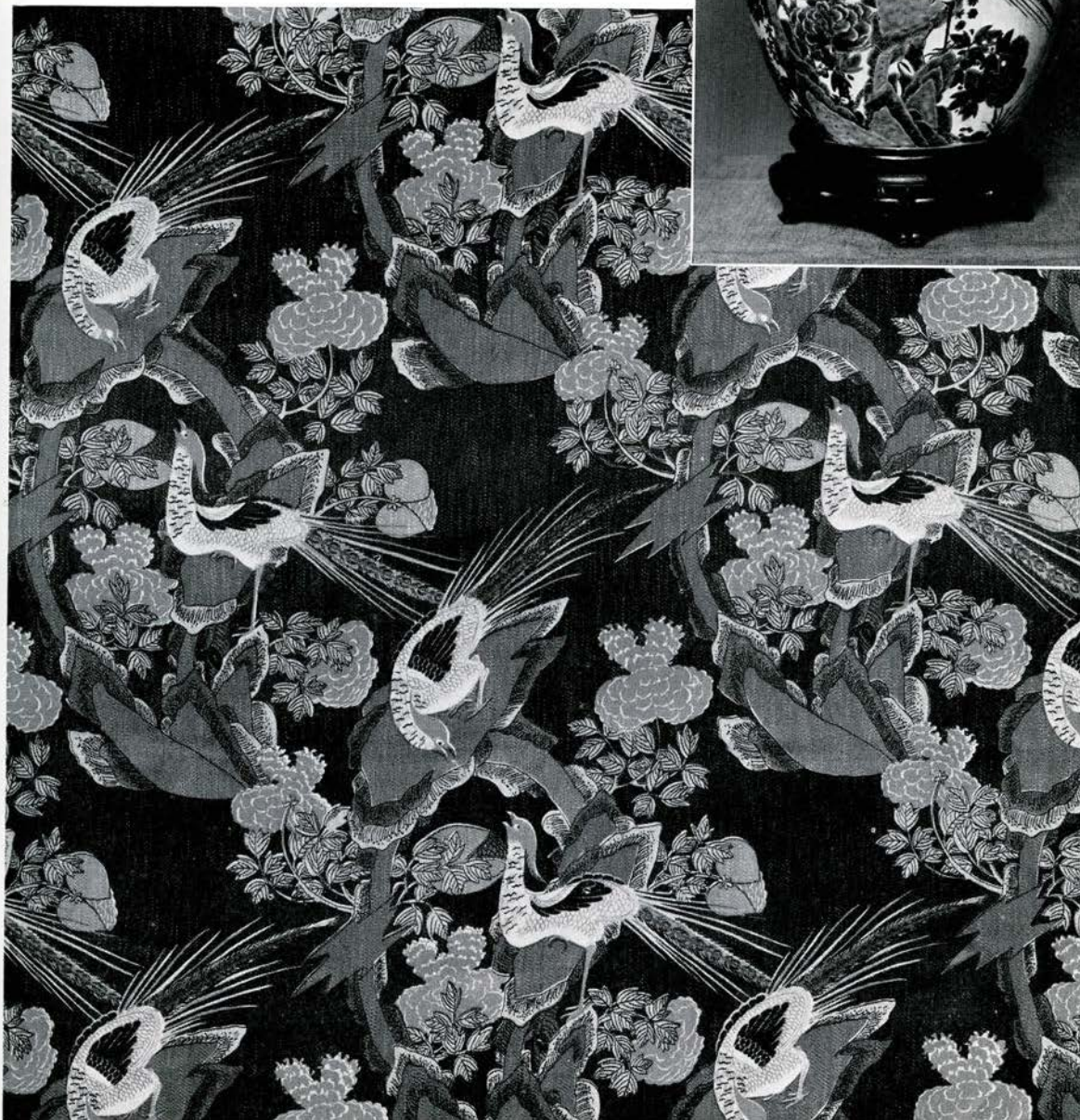


*(Lent by the Philadelphia  
Museum of Art)*



China. Era of Ch'ien Lung (1736-96). Tapestry from the Imperial Palace in Peking.

Hand screened print styled by Stapler Fabrics Inc. of Philadelphia after a Chinese porcelain jar in the University Museum. Eighteenth Century.



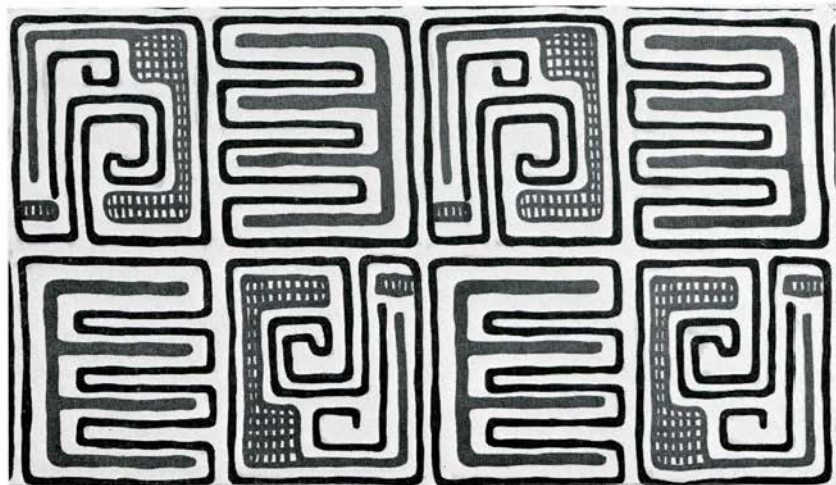


Hand screened print styled by Stapler Fabrics Inc. of Philadelphia after a Chinese painting in the University Museum: "Seven Sages in a Bamboo Grove."

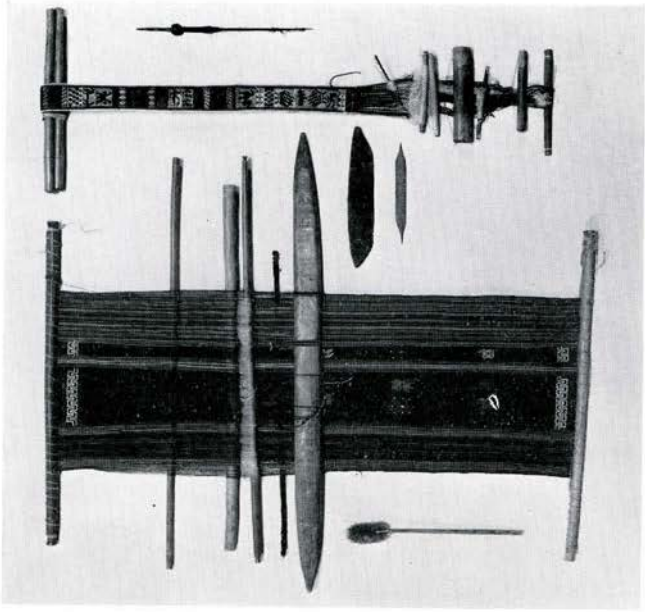


Peruvian double cloth with cat design.

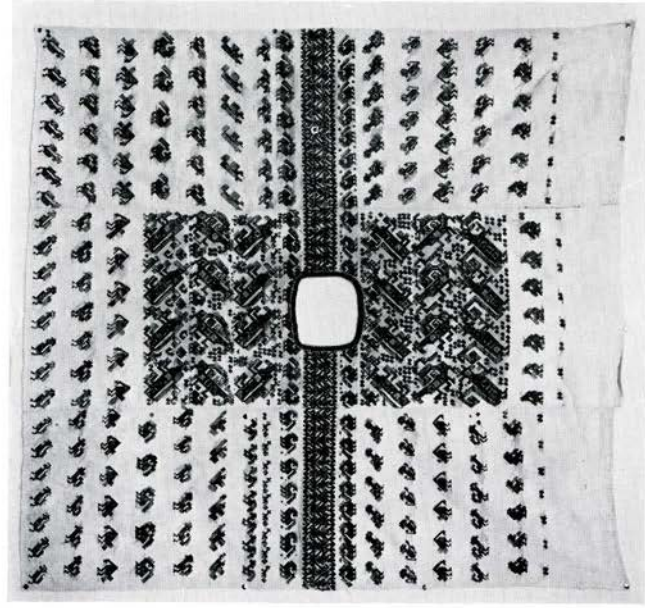




Hand screened print styled by Stapler Fabrics Inc. of Philadelphia after a Marajo pottery dish in the University Museum (Marajo Island, Brazil).



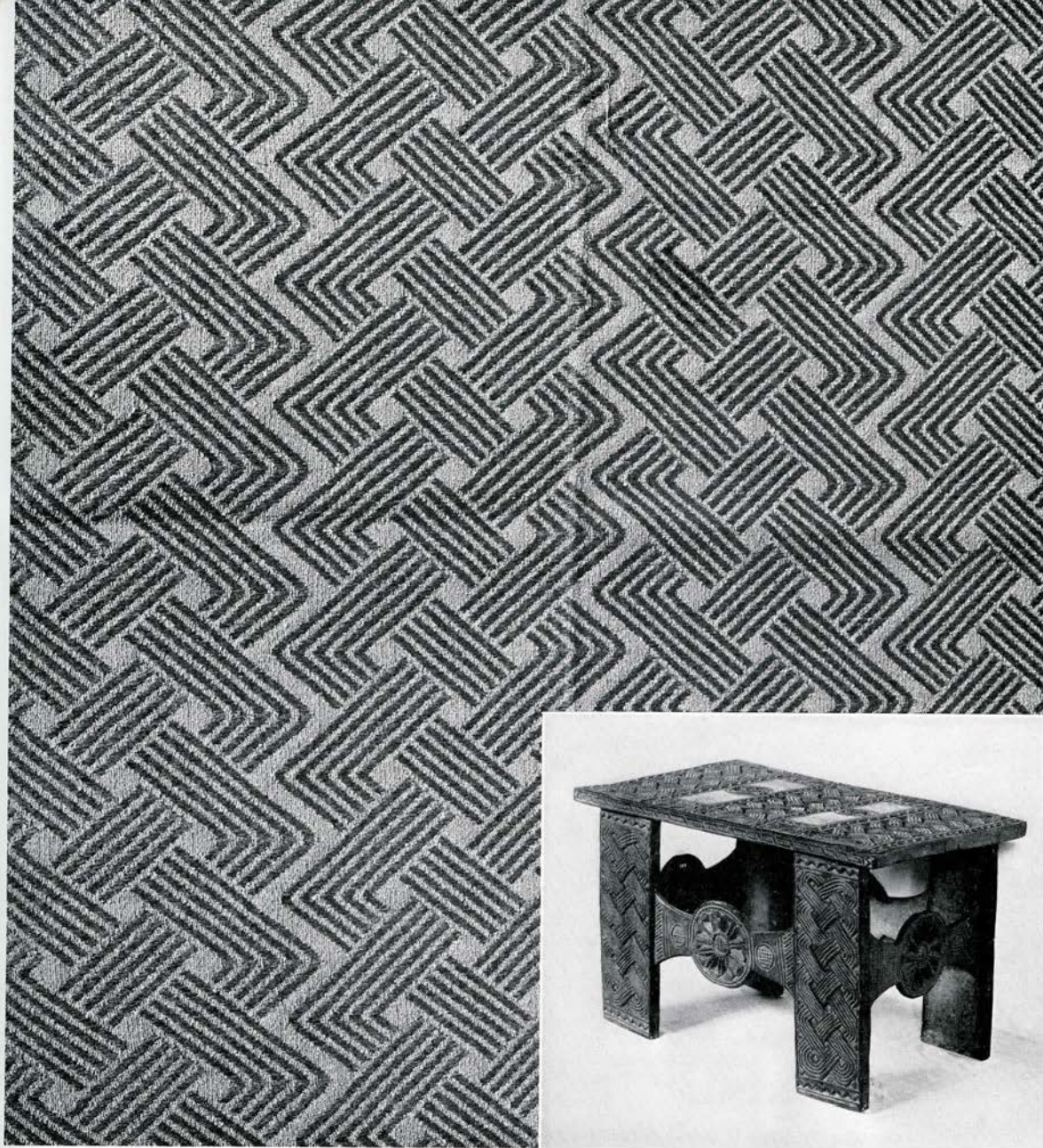
Guatemala. Two looms.



Guatemala. Ceremonial huipil.



African pile cloth. Southwestern Belgian Congo (Bushongo).



Jacquard-woven texture cloth, with bouclé weft and spun rayon warp, styled by Stapler Fabrics Inc. of Philadelphia after an African table in the University Museum (Benin, Western Nigeria).