



## Weaving and Dyeing in North Africa

Woman of Southern Tunisia spinning. Clothing and background are typical of this part of North Africa. Photo: Jean Gallotti, Paris.



*For dyeing  
best quality  
Men's suitings*

**Neolan Black  
WA extra**

*fast to perspiration  
and light,  
good overlook*

Basle . May 1939

## *Weaving and Dyeing in North Africa*

### *Contents :* **The Textile Craft of Egypt**

*By Jean Gallotti* . . . . . page 734

### **Weaving and Dyeing in North Africa**

*By Jean Gallotti* . . . . . „ 738

**Morocco** . . . . . „ 739

**Algeria** . . . . . „ 753

**Tunisia** . . . . . „ 756

**Historical Gleanings** . . . . . „ 763

*Reprint and Translation, both entire and partial,  
are subject to the permission of the publishers of the Ciba Review*



---

## The Textile Craft of Egypt

---

By Jean Gallotti

*Foreword.* The author of the following articles was for twelve years inspector of the native arts and industries of Morocco. During this period he specialized in the study of the native technique, and devoted great efforts to the furthering of the carpet industry. Many of the following descriptions of weaving, dyers' recipes, and technical details are unknown even to specialists. The author's desire for an exhaustive treatment of his subject resulted in some enumeration of details which, in view of their importance for the knowledge of the subject, the editor did not wish to omit.

---

### *The History of Weaving in Africa*

begins with the Pharaohs. It is true that according to recent research in South Africa peoples of a simple but remarkable state of civilization appear to have lived in Africa at the time of the ancient Egyptians, if not earlier; they are, however, of little importance for the history of textiles, as neither fabrics nor implements for their manufacture have come down to us from that period or district. The same holds good for the civilization of ancient Carthage; closer though it is both in place and time to the younger civilizations of North Africa, its influence on them is no more than a matter of conjecture.

The valley of the Nile was governed successively by the Pharaohs and the Ptolemies, during which time it went through many changes. The Alexandrian epoch was followed by a Christian period, during which the so-called Coptic art flourished. This in its turn was followed by the rule of Islam, and it is from that period that the most numerous and most valuable examples of the textile art date. At the same time Islam spread right across North Africa from the Gulf of Gabes to the Atlantic Ocean. Though this area was never a political entity for very long, the products of its arts and crafts show a certain affinity. The reason for this is probably to be sought in one common element of the population, the Berbers, and in the fact that the rule of Carthage, Rome, Byzantium, and the Arabs respectively always made its influence felt throughout North Africa. In this respect the vast area may be regarded as a whole. Though the civilization of the Nile and of North Africa emanated to

the rest of the African continent, its influence was not great enough to make the arts and crafts of the black races mere offshoots of those of North Africa.

It will be in accordance with the natural and historical factors to give below a survey of the Egyptian textile crafts, especially of the period following the Pharaohs, as a preliminary to the discussion of those of North Africa proper.

### *Egypt at the Time of the Pharaohs* (ca. 3400 B.C. to 332 B.C.)

Weaving was a craft with which the ancient Egyptians were thoroughly familiar, as is shown by the loom depicted on the frescoes of Beni Hassan dating from the third millennium B.C. (cf. Ciba Review No. 16, p. 547). It is not unlike a type of loom still used occasionally in the Nile Valley.

Egyptian figural paintings show that the Pharaohs wore robes ornamented with woven or embroidered borders which were either sewn on or woven into the material. In their simplest form they were dark-coloured strips running parallel to the hem of the robe. The patterns were made up of palmettes, rosettes, dots, and leaves, though figures of men, gods, and animals are also seen, probably executed in needlework. These instances are, however, exceptions, for the ancient Egyptians appear, especially until the beginning of the New Kingdom (ab. 1500 B.C.) to have preferred materials which were either white or of one colour, and patterned cloths are rarely found on the mummies. These draperies are, however, of the very finest texture.

### *The Hellenistic and Coptic Period of Egypt* (322 B.C.—A.D. 640)

Embroidery does not appear to have become universal until the time of the Ptolemies, when Phoenicians, Syrians, and Jews settled at Alexandria, bringing their own crafts with them. There are numerous examples of Alexandrian embroidery, none of which, however, date from before the Christian era. But, as in the subsequent Coptic period of art, the technique differs from that adopted in later ages for carpets and embroidery or tapestries. Medieval and modern methods will be discussed later. At present it is only necessary to





*Egyptian  
tapestry-work of  
the Coptic period.  
4th to 6th  
century A.D.*

bear in mind that a piece of tapestry-work consists of the woollen warp, into which the weaver draws the weft-threads—also of wool—according to a prescribed pattern. Thus fabric and pattern are made simultaneously. In carpet-weaving, the pattern is formed by tufts of coloured wool knotted round the warp-threads, and held in position by the weft. The ends of these wool-tufts are clipped with shears to form the pile of the carpet. In carpet-weaving, too, fabric and pattern are completed simultaneously (cf. *Ciba Review* No. 5, "Tapestry", and No. 15, "Pile Carpets of the Ancient Orient").

Ancient Egyptian tapestries of the early period differ from those described above, inasmuch as the patterns are not worked into a warp, but generally applied to a linen fabric. They are executed with a needle and not by hand, as in the case of later forms of tapestry or carpet weaving.

In spite of all these differences the similarity of texture and colour between some Egyptian and Moroccan tapestries is very striking; it shows itself in the widely spaced rows of the

fabric, the rich colour-scheme, which appears to contain madder-red, indigo-blue, and henna-brown, strongly reminiscent of a particular kind of small tapestry found in South Morocco. The similarity even extends to that shade of brownish purple which we find in tapestries of the Hellenistic period and in the popular long-pile purple Saïan rugs of Morocco.

The patterns of the oldest, as yet often one-coloured fabrics show mythological figures, either naked or clad in Grecian draperies, and surrounded by leaf or garland motifs. Then the Coptic style gradually develops with its peculiar, peasant-like gravity, and which, though native to the country, bears no resemblance to the Egyptian style. Coptic art was continuously stimulated by Greece and Sassanid Persia, receiving from the former gay realism, from the latter its stylized rigidity. Christianity transformed Coptic art, and in its new form it held its own even when Islam dominated most of the Egyptian workshops. These Coptic fabrics, which date from between the 4th and 6th centuries, and which,

unlike those of the Hellenistic period, are adorned with the figures of animals—lions, eagles, hares, doves—and realistic plant motifs, are of such individuality, freshness, and power that, once seen, they are never forgotten.

*Egypt under Islam (from A.D. 640)*

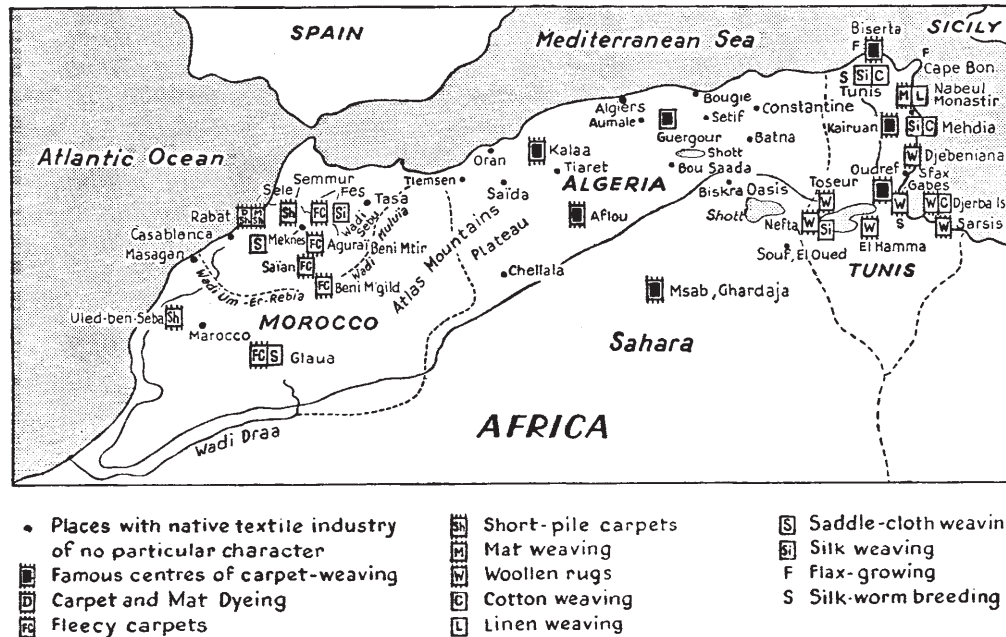
In the 7th century Egypt was conquered by the Arabs, and already at the beginning of the 8th century it was almost entirely Mohammedan. Until its conquest by the Turks in 1517 it was ruled by a number of powerful and brilliant dynasties which furthered architecture and the arts and crafts.

For a long time Egypt supplied the veil surrounding the Kaaba in Mecca, which was renewed annually. The Arabian author Makrisi reports that he knows of no city more famous for the beauty of its textiles than Cairo. The textile crafts appear to have reached their height in the Fatimid period (910–1171). The Caliph El Muiz (953–975) had a tapestry made, on which the earth with its mountains, rivers, roads, and cities was traced; the name of each town was wrought in threads of silk, silver, or gold. Stuffs made at Damiette, Dabik, Domairah, and Tunch had patterns depicting feasts, dances, hunting, and even battle-scenes.

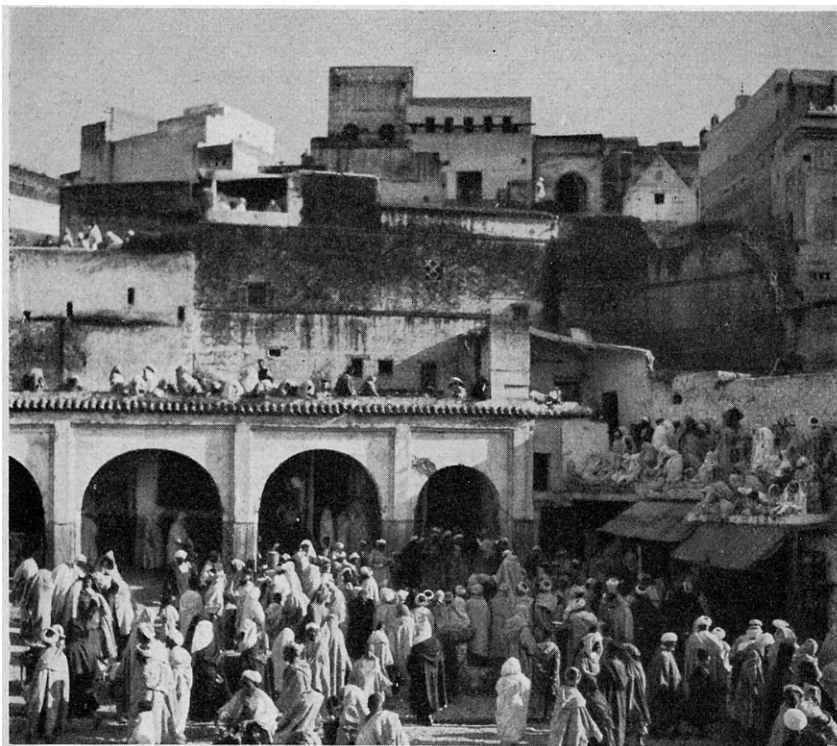
The traveller Ibn Batuta (1304–1377) praised the woollen cloths of Behnessa, and when as in Assiut turban-cloth of the finest quality was woven, Tinnis was famed for its colour cambrics; cloth of gold was made there, and fabric called Bukalemun, which changes colour with the light. A special factory worked for the Egyptian princes.

The Mameluke princes, who made an end of the brief rule of the Ejubids, yielded nothing to the Fatimids in the magnificence of their court; silk robes were a matter of commonplace there. Among the remnants which have been preserved, a silk fabric is worthy of mention; its pattern consists of medallions framed by long-eared hares; sprigs of flowers borne by ducks connect the medallions. The border bears in Cufic characters the name of the Caliph Hakim, who reigned from 996–1021. This fabric, which is preserved in the treasury of Notre Dame Cathedral in Paris, is said to have been brought from Palestine by St. Louis, King of France (1226–1270). The treasury of Notre Dame of Apt in southern France preserves the so-called Veil of St. Anne, a golden and silver-brocaded muslin with a pattern of Arabic characters, dogs, parrots, sphinxes, and various garlands. The colour of the fabric is golden, the pattern blue, pink, green, and black, and the inscription appears to bear the

*Centres of the textile craft in North Africa. By G. Schaefer, Basle.*







*A holiday in the holy city of Mulay Idris in the Serban Mountains, Morocco. Photo: T. Burckhardt, Basle.*

name of a Fatimid Caliph of the period of the conquest of Jerusalem (1099). To this series of gorgeous stuffs, the date and origin of which can be fixed with some degree of certainty, belong several others: a silk from the treasury of St. Sernin in Toulouse, with large peacocks facing each other on either side of the Persian Tree of Life, the so-called kerchief of St. Odo in the church of Monastier, the silk from the Cluny Museum in Paris with ruby and yellow peacocks, and many other pieces from the museums of Utrecht, Nancy, Berlin, etc.

It will be seen from this survey that even

the strict Mohammedan religion could not always prevent the artists, especially under the Fatimid and Mameluke rulers, from depicting living animals. These fabrics are in style not unlike those of the Coptic and Hellenistic periods. The motive of the twin animals facing each other is very common, the patterns framed in rosettes or squares, garlands, and inscriptions are also frequent. Though the precepts of the Koran were sometimes disregarded, its spirit helped to strengthen the hieratic severity and geometrical stylization which had been in evidence since the end of the preceding age.

### *Neolan Salt II*

permits a reduction in the amount of acid required in the dyebaths of Neolan Colors

## Weaving and Dyeing in North Africa

By J. Gallotti

Between Egypt and North Africa proper lies Tripolis, a country with a native civilization of no very outstanding qualities, the textiles of which—woollen rugs or cloaks—are of no interest from the artistic point of view. North Africa, which extends from the Gulf of Gabes to the mouth of the Draa on the Atlantic coast, is a geographical unity, though it consists of three political areas: Tunisia, Algeria, and Morocco (cf. map on p. 736).

Carthaginians, Romans, Byzantines, and Arabs successively created more or less homogeneous provinces of this area. As far as the textile crafts are concerned, the Arabian period is alone of importance, as the few old fragments which have been preserved are younger than the Arab conquest of the country. The efforts of the Arabs to unite the whole of North Africa to one kingdom were only temporarily successful; and it was only for a short period at the end of the 12th century that a dynasty of the Almohads, a Berber tribe from the Atlas Mountains of South Morocco, succeeded in subjecting the entire country. Apart from this interlude the vast area was divided under various claims of sovereignty, emanat-

ing from Kairuan or Tunis in the East, from Cordoba, the seat of the Omayyad Caliphs, from the native Emirs of Marrakesh (Morocco), or Fez, the Almoravids, Almohads, Merinids, etc., in the West.

Between these two spheres of influence kingdoms were founded in the area now known as Algeria, e.g. that of the Beni-Hammads or the Sultans of Tlemsen, until in the 16th century the Turkish conquerors succeeded in uniting Algeria and Tunisia for a brief period.

From the artistic point of view there is a distinct resemblance between all the products of Islamic North Africa, though each of the three districts mentioned has its own style. The peculiarities of these styles are explained by the circumstances of their origin and the foreign elements which each of them absorbed. In the Tunisian area we see more plainly than elsewhere the heritage of Rome and Byzantium, in Morocco art is identical with that of the Mohammedans of Andalusia, to which is added the Berber component. In Algeria the Berber character is also perceptible in the textiles, though degenerate as a result

*Crowds before the gates of Fez on the day of the students' holiday (Tolba).*

*In the foreground a negro nurse with her Arab charge. Turbans or hoods are the traditional headgear for men; the tarboush or fez (left foreground) is a modernism.*

*Photo: Titus Burckhardt (Basle).*





of the influence of European patterns introduced by the Turkish pirates. It must not, however, be forgotten that we are dealing with Oriental art, for this art is the expression of an Islamic civilization, which never denied its Arab origin; and to the Mohammedan mind the great homes of civilization were Egypt, Damascus, and Persia.

### Morocco

Apart from the fact that the power of Spain began to decline shortly after Philip III had driven the last descendants of the Moors from Andalusia, Morocco preserved its independence so much longer than the other countries of North Africa chiefly because it was geographically so far removed from the great European countries. At the same time its arts and crafts maintained their native style and vigour, whilst those of Tunisia and Algeria declined. Throughout Morocco the natives to this day carry on widely varying forms of weaving.

Two styles of very simple technique, and used in the manufacture of flidjs and mats, point in Morocco as elsewhere in North Africa to the primitive loom as used by the earliest weavers in the Nile valley.

#### *Flidjs*

Nomad life caused a craft to develop throughout North Africa which is devoted primarily to the weaving of strips of material that are sewn together to make tents. These strips, known as flidjs, are woven from wool, goat's or camel-hair, or from palm-fibre, and frequently from a mixture of all these materials. They are often more than ten yards long, but not more than about 28–30 ins. in breadth. When woven of goat's hair they are black, and brown when palm-fibre is the material used; in Morocco they are nearly always plain, in Algeria sometimes striped. The loom on which they are woven, consists of four pegs driven into the earth, two cross-poles lying on the ground, and held by the pegs, which form the beams. The weaver sits on the ground, she passes the weft through the warp with her hand, and beats the thread down with a metal comb. The shed is formed by means of two sticks.

#### *Mats*

Mat-making may be regarded as a primitive form of weaving. Mats are made of rushes,



*Member of the Berber tribe of Zerzai guarding a pass in the Atlas Mountains. His upper garment, a djellaba open at the front, shows a pattern of light and dark wool of natural colour. Photo: Titus Burckhardt, Basle.*

of palm-fibre and of esparto-grass or mat-weed (Arabic: Alfa). Rush-mats are a speciality of the town of Sale, opposite Rabat, at the mouth of the river Bu-Regreg.

The rushes used for mat-making grow in the swamps of Gharb; they are placed in the sun for drying and bleaching, but are always moistened before being woven. For fine mats with warps of thread, the rushes are split longitudinally.

Rushes which are to be dyed are first placed in a bath of alum, and then either dipped in synthetic dyes or, for dyeing them black, in sulphate of iron.

In former times madder was used for red-dyeing, and the following method adopted: 20 pounds of alum were dissolved in a large earthenware vessel filled with water, and the rushes were soaked in this mixture for fourteen days. They were then exposed to the sun



*Fleecy rug of the Beni Mgild tribe (Morocco). The distribution of the squares and diamonds in the pattern shows the endeavour to avoid monotony of design.*

for a day, re-immersed in the same bath, to which a further 5 lb of alum had been added, and left to steep for another fortnight. After removal from the bath, the rushes were placed upright to drip. Water was then boiled in a cauldron, according to the size of which the juice of twenty or thirty lemons was poured into the water. Two handfuls of pounded madder were added; then a layer of rushes was placed in the cauldron, followed by more madder and another layer of rushes, and so on. The whole was kept over a fire for two hours, after which period the rushes were taken out. The process, which was similar to that of dyeing with logwood, has nowadays fallen into disuse.

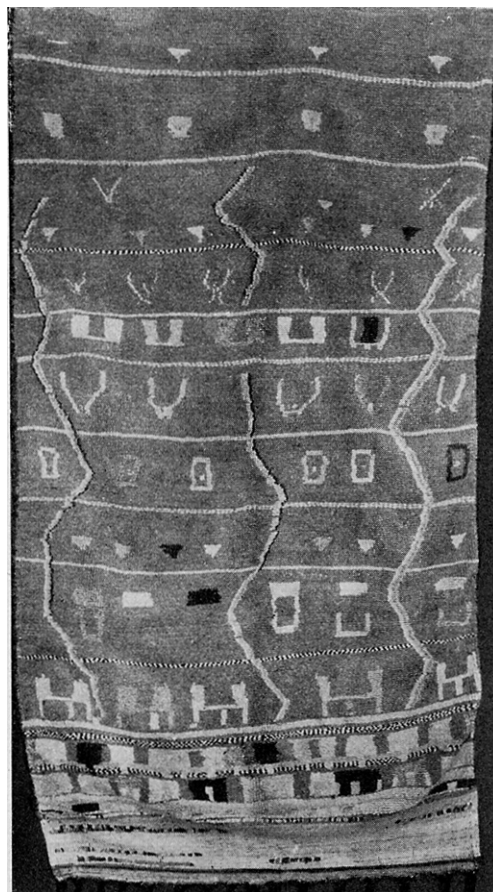
The loom on which mats are made consists of two poles secured horizontally to the ground, between which the warp is stretched, usually at full length. The weaver stands at one end of the warp, inserting the rushes between the threads with his right hand, while pressing down a number of the threads with the other, to form the desired pattern. As the work proceeds, weavers and their boys follow the first man. They weight the fabric by means

of a board placed across the mat, on which stones are laid.

The warp of coarse mats usually consists of palm-fibre, that of the finer ones of hemp-threads. They are usually either plain white or white with colourless patterns, which gives the fabric the appearance of damask; some mats have black and vermilion patterns. The patterns of the mats of Sale show considerable variety, but are always simple, severe, and clear. As a rule they are composed of adjoining squares, black on white or black and red on white for foot mats. The wall-hangings known as haïti have a pattern composed of a continuous series of stylized curves.

The methods of mat-making common among tribes of the interior are entirely different from those just described. In Western Morocco the mats are made of fine cords of

*Chichaona or Uled-ben-Seba rug from South Morocco. The surface is broken by cross-lines between which the large, coloured Barbary motives are evenly distributed.*







*Weavers of braid. In the manufacture of djellabas the weavers of Morocco are assisted by children, who stand outside the shops, and hold the silk threads crosswise, which are plaited together by means of a needle.*

dwarf-palm fibre, and are nearly always adorned with embroidery in coloured, usually red, wool, which sometimes covers the original fabric so completely as to make the mats look like carpets. The upper surface is smooth, but the back is made prickly by the protruding tips of the palm-leaves. These mats are very similar to those of East Morocco, which are made of white and black esparto-grass. For both kinds, however, as for country-woven woollen fabrics, a vertical loom is used.

#### *The Manufacture of Woollen Textiles on Vertical Looms*

Throughout North Africa the vertical loom, which dates from the time of Ancient Egypt, is in use. It consists of two large upright posts, to which two horizontal poles are tied about a yard apart, over which the warp is stretched. Each warp-thread is connected with a cord; the cords in their turn are secured to a cane rod. The weaver sits on the ground or on a cushion, and begins work at the lower end of the warp. As soon as the fabric begins to grow out of reach of her hands, she loosens the

cross-poles, rolls the cloth round the lower one, and unwinds more warp-thread from the top beam, afterwards re-tying the two beams in the required position. When weaving cloth, she inserts three weft-threads at a time, using two rods to assist in forming the shed; when weaving a carpet, she knots one row, tying each loop round two warp-threads. She then beats down the weft or row of knots with a heavy iron comb before repeating the process.

*A curtain called haïti, made by the Berber tribe of the Saïan from the central Atlas Mountains (Morocco). The charm of this piece lies in the judicious alternation of sections made up of characteristic Berber motives.*



The principal fabrics made on vertical looms are the *hendira*, used for men's cloaks and women's shawls, the *tellis*, used for tying up goods into bales or as a covering for pack-saddles, *hanbils*—used as blankets—as well as rugs, curtains, carpets, saddle-bags, and gaiters for the women in mountainous regions. The patterns show no trace of Spanish or Moorish influence,—this is exclusively due to the fact that they have been handed down from time immemorial in a tradition sufficiently strong to preclude foreign influence. The only exception which must be made are the carpets of Rabat, which will be discussed at a later stage.

The elements of these patterns are stripes, compositions of straight lines, forming diamonds, triangles, or squares; furthermore, lines arranged like the teeth of a comb round geometrical figures and crosses; these are the principal decorative elements evolved by the Berber imagination. We find no suggestion of animal figures or flowers, rosettes or curves, or of that dazzling play of straight lines and brilliant suns, by which the Semitic peoples so aptly displayed their geometrical talents.

The only detail taken from Nature is the finger-motif, which is found in the pattern

of all fabrics; usually in the form of fine, parallel lines; the weaver does not always take the trouble to limit the number of fingers to five, as the design is not due to any desire for realism, but to a deep-rooted superstition. Also of superstitious origin is the enormous fiery eye, which is of such decorative effect against the black woollen background of the *khidus* or rain-burnous; this eye, incidentally, is peculiar to the southern ranges of the Atlas Mountains.

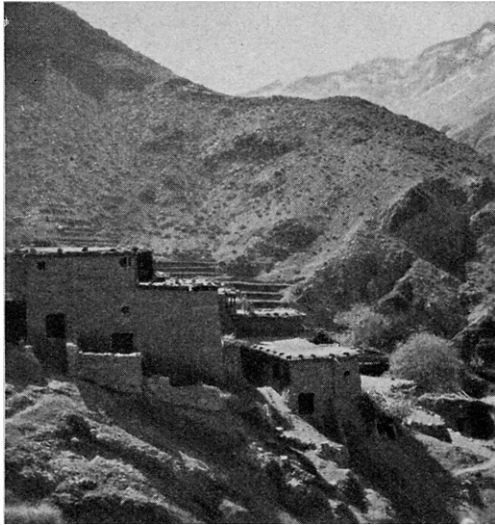
It would be difficult to find anything of more decorative effect than the so-called *arnai*, large sacks from the region of Rabat, which are used in the transport of grain; a few red and yellow stripes suffice to enliven the deep black of the surface. Equally pleasant to the eye and charming in their ingenuousness are the *hendira*, from which the peasants make their sleeveless clothing, and in the heavy folds of which the women of the mountains swathe themselves. The *hendira* are white, with dark red or purple longitudinal stripes covered with a network of black or blue lines; it is to their very simplicity that these fabrics owe their charm.

The *hendira* are sometimes ornamented with tufts of coloured silk, which the weavers



*Crowd at prayer  
before the walls  
of Fez on the  
day of the  
"Great Feast"  
(Aid Kabir).  
Photo:  
Titus Burckhardt,  
Basle.*





*Berber village on the slopes of the Great Atlas (Djabal Ayashi). Photo: Bachmann, Sidi Slimane.*

insert between two rows of weft; that is the simplest form of the knot-technique which everywhere in Morocco is combined with high-warp weaving, and which in carpet-weaving becomes the ruling factor in the process.

The smooth rugs known as tellis, which serve chiefly as covers for pack-saddles and beds, have rows of knots set far apart. In the North, the colour of these rugs is usually a dark red obtained from cochineal or madder; their pattern is made up of finely dispersed Berber designs in white, yellow (green), and blue, and they have the appearance of primitive tapestry-work.

Not unlike them are the *tertia*, the saddle-cloths of the Saïrs, though they are smaller, finer in texture, and more colourful; we have here not only a combination of knots with the flat fabric of ordinary weaving, but also tassels and fringes, which reveal a gay, almost child-like spirit.

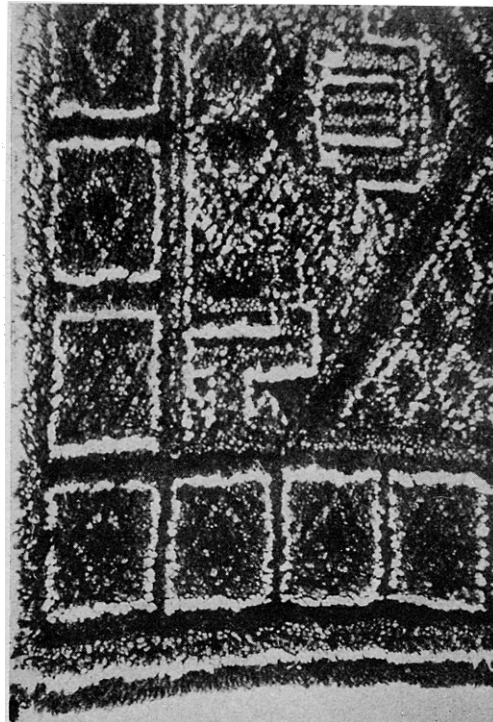
In the tellis of the Glaua district in the southern Atlas Mountains the knot-technique takes a more prominent place. These rugs consist for the most part of smooth, black and white striped fabrics with tapestry-like motifs and coloured bands woven in the knot technique. The pile portions form a relief-like pattern against the smooth background. Sometimes they consist merely of plain, concurrent stripes, sometimes of a cross surrounded by a square.

As well as tellis made substantially in the ordinary weaving technique, the Glaua also produce others made almost entirely in the knotting technique, that is, genuine pile rugs. The knot-rows are very loose, but the long wool covers the foundation completely, like a smooth, silky fur. The patterns are often very simple; large, irregularly placed blue, yellow, or black geometrical figures stand out effectively against a flame-coloured background. That is particularly true of old specimens. Of recent years the appearance of the rugs of the Glaua has changed considerably; since the introduction of synthetic dyes, which the natives do not know how to use properly, they have become glaringly colourful.

The smooth rugs of the Glaua tribe are unique in Morocco. Everywhere else, even along the coast, they are thick and woolly. The more severe the climate, the longer and closer the pile. We may distinguish between two classes of rugs: those with double and very long pile, and those with medium or short pile.

Most of the fleecy rugs with double or twisted pile come from the mountainous

*Fleecy Saian rug from the Atlas Mountains. The design is blurred by the long fleece.*

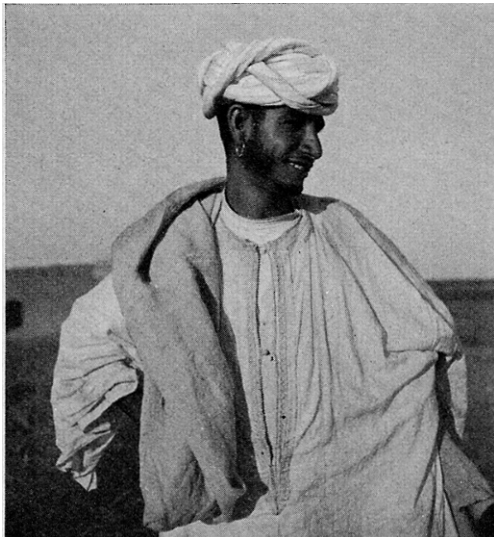


regions around Fez: Beni Mtir, Beni Mgild, Wadi Gigu, Aguraï. Many of them are white with pale red or black stripes crossing each other diagonally; others have a black and red diamond pattern.

Of peculiar interest is the technique of the rugs of the Saïan district (see illustration page 743). They are composed of large diamond-shaped figures; the border and centre are covered with multi-coloured squares and crosses on a purple background dyed with the dye of the Tizra plant. The foundation is also knotted, and made of thicker and longer wool than the pattern, the latter quite disappearing under the long fleece. Only when the long wool of the foundation is worn away by use, do the coloured figures become visible; thus there is no similarity between a new carpet and a worn one. There are really two carpets on the same warp. That is not the whole peculiarity of these carpets. The natives regard as the upper side of the carpet what we should call the back. To enliven this surface they add long-fleeced knots which trace the outlines of the large diamond motifs, and which, seen from the under side, look like tapestry-work. One might almost speak of a third carpet on the same foundation. These carpets are made by men who work out the patterns assisted by a woman at the other side of the loom.

A rug of the Beni Mgild (see ill. p. 740) also belongs to the double pile variety. Apart

*Arab fellah from Central Morocco wearing the usual ornamentally wound turban. Photo: T. Burckhardt, Basle.*



*Rug from Rabat. Early 19th century. Of all North African carpets, those of Rabat are in general composition most akin to the Oriental carpet proper.*

from the lozenge figures, which often contain an X or a cross, the rugs are covered longitudinally by a network of connected squares. The colours vary, being often a dull shade of red, black, grey, or white, though they are in some cases very lively and scintillating.

Besides these fleecy rugs, others of short or medium pile are also made in Morocco, among which must be counted the colourful products of the Semmur.

With the exception of the Saïan rugs, all those mentioned up to now simply placed the different motifs side by side. There was practically no trace of an attempt to divide the surface organically, to distribute the details of the pattern according to one homogeneous principle, or to group them round one central motif; in a word, there was scarcely any effort to subordinate the part to the whole.

The Semmur rugs, however, show deliberate and conscious planning. The surface is divided by broad panels or bands, running either transversely or longitudinally, or else by lines and frames. Into each of the sections thus



created Berber motifs are woven at regular intervals. The motifs resemble those of other rugs, but are larger, are farther apart, and stand out more distinctly from their background, as the pile is shorter.

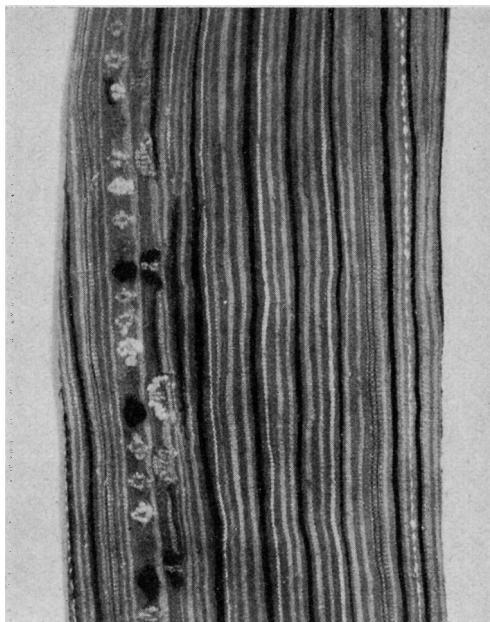
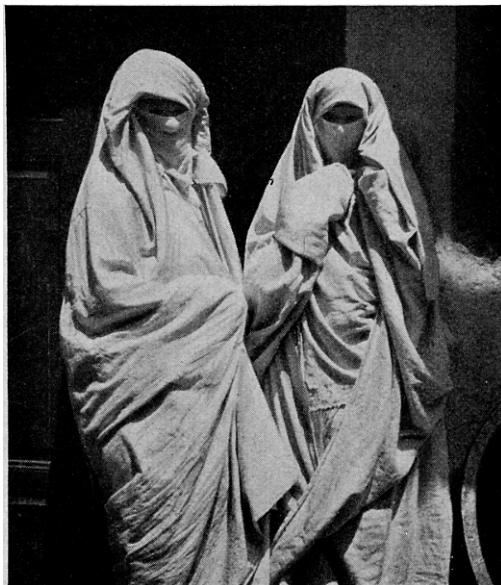
This attempt at composition is even more evident in the Uled-Ben-Seba rugs (see ill. p. 740), two kinds of which are distinguished. One of them, a smooth rug with crossbands at intervals, has a large, colourful Berber pattern.

The other kind, of uniform madder-red verging on salmon-pink, has frequently one large motif as its only pattern. This motif is often of very peculiar character; the writer remembers seeing a rug, in one corner of which was the clumsily stylized picture of a palace. That, however, is an exception. The most frequent design is a coloured, checkered lozenge, one of the most popular of all Berber decorative touches, which is generally placed as the only ornament in the middle of the rug.

This large lozenge on a uniform background is reminiscent of the *kubba*, which distinguishes rugs from Rabat. Before discussing these latter, however, something must be said of the rugs of Casablanca and the *hanbils* of Sale.

The carpets of Casablanca have a clearly defined pattern. It usually consists of four large, octagonal figures placed corner-wise round a central piece. This pattern resembles

*Veiled women in a bazaar (Sûk) at Fez. Photo: Titus Burckhardt, Basle.*



*Woolen pillow-cases, 72 by 39 cm. Oudjda (Morocco). Ethnological Museum, Basle.*

very closely that of the rugs of Sale and Rabat, but the general style is Berber rather than Oriental.

The *hanbils* are thick rugs which may be used either as carpets or as coverings. The woven surface is interrupted by several strips executed in knot-technique, each of which is about 9–12 inches wide, and figured in the style of the Rabat rugs. The smooth portions are ornamented alternately with stripes, lines, and geometrical figures wrought in tapestry technique.

The chief peculiarity of the carpets of Rabat is the motif known as the *kubba*. The Arab word *kubba* (dome) signifies in the parlance of the weavers the centre-piece of a rug, surrounded by a series of square, frame-like figures. The *kubba* may contain, beside small figures of various kinds, two other lozenge-shaped *kubbas*.

This type of ornament is particularly reminiscent of the carpets of Kairuan in Tunis. The analogy between the *kubba* and the central medallion of the Persian carpet, the attempt to subordinate detail to considerations of general effect, and finally the multitude of motifs, justify the statement that of all Moroccan rugs those of Rabat come nearest to the Oriental carpet.

The development of this style, is however,

*Cibanone Colors • New Additions*

***Cibanone Olive BG***®

***Cibanone Olive 2B***®

*Of outstanding fastness  
to light, washing and chlorine*



*For dyeing and printing  
cotton, linen and viscose rayon*



not easy to trace. It may be said with some qualification that there are three kinds of rugs belonging to three different periods. To the first period belongs a group of coarsely woven carpets, the majority of which were found in the region of Meknes; though they are believed to have originated in Rabat. The Berber character of these rugs is so pronounced that one might almost believe them to have been made at some time in the region of Meknes in imitation of Rabat rugs. Alternately, one might presume all Rabat rugs originally to have been in pronounced Berber style, which only changed in recent centuries, perhaps since the fall of Moorish rule in Spain, and the resultant large scale immigration from that country in the 16th century.

However that may be, no development becomes plain until the 19th century; in about 1850 we find a second very typical kind, which held its own until the end of the century. To this category belongs almost exclusively a group of very closely woven rugs, which are almost invariably of the following appearance: three or four borders or frames, the innermost of which is broadest and usually has a yellow grounding, are followed by a smaller one, the dominant colour of which is blue; this is ornamented with the motif known as zellij (square). Then follow the kubbas. Borders and kubbas are strewn with small ornaments, most of which are foreign to Berber art.



*Native of Morocco wearing the djellaba, which envelops the body like a small tent, and protects it both against heat and cold. According to tradition the djellaba was copied from the Christian monks of Andalusia. It is made from a single piece of cloth, in such a manner that the cutting out of the hood at the upper end of the rectangle yields the short sleeve-pieces without loss of cloth. Photo: Titus Burckhardt, Basle.*

At the beginning of the 20th century the pattern changed again; at the same time the fabric became looser and the colours cruder. The numbers of borders placed one within the other grew smaller, the small kubbas in the centre disappeared; in these rugs a large orna-



*Rif Woman reeling thread. Photo: Ofalac, Algiers.*

ment known as the rokha or chimaera covers almost the whole surface of the rug.

Though it is easy to detect the non-Berber motifs, their origin is not easy to determine. Many of them show conventionalized flowers, which makes it appear probable that they are copies of Oriental carpet-designs. Each of these motifs has its name in Arabic, but to European eyes the name very rarely appears to fit the object which it describes. There are long-stemmed tulips, such as are often seen in the patterns of 19th century carpets. On enquiring the name of this detail from the native weaver, one learns with surprise that it is called "the storks". Again, there are carnations known as "daggers", and so on.

One might think that these are purely conventional names which occur to the women who weave such patterns on the grounds of very superficial impressions. That at any rate was the opinion of the present writer; but, apart from the fact that in some cases the names even to our eyes seem very apt (e.g. "the birds") the women can always give very good explanations of such names. An instance of this is the figure which we should call a tulip; if it is turned round it assumes the form of a stork seen from the front; the long neck and head are represented by the stem.

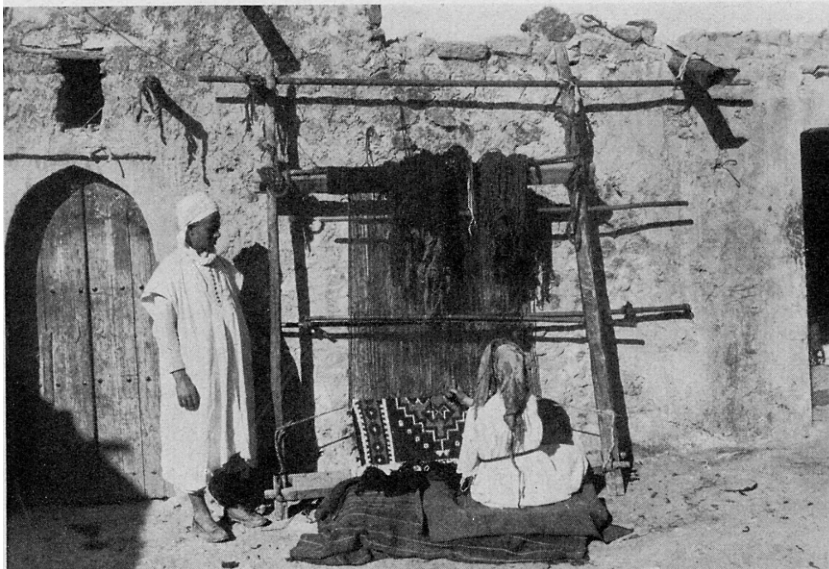
On the whole it would appear that the introduction of moquettes in the 19th century was more instrumental in stimulating the weavers to originality than was the imitation of Oriental carpets.

### *Woollen and Silk Fabrics*

#### *woven on Technically more perfect Looms*

The horizontal loom is in use among the weavers' corporations of the African cities. It differs but little from the type common in Europe before the invention of Jacquard's shedding machine. The leash-rod is raised by means of a treadle every time the shuttle is passed through. The fabric is beaten into position by means of comb and batten. The number of shafts, which for plain veils (haiks), striped rugs, and cotton cloth amounts to no more than four, is considerably increased for other fabrics. For that reason a draw-loom is used, which requires the assistance of a draw-boy (cf. Ciba Review No. 16). On such looms the fine silks of Fez are woven, which bear witness to a craft of weaving which in the Islamic West was at its height during the Hispano-Moorish period and in Egypt throughout the Middle Ages.

The hazam, a sash worn by women, requires for its manufacture a silk warp two to three yards in length and about sixteen inches wide; the warp consists of threads of four different colours, which appear as four rectangles, each of one colour. This is due to the fact that each warp thread is of two colours, and that the right half of the warp differs in colour from the left. Into this warp the weaver introduces a weft of silk, silver, or gold threads, thus producing a varied pattern, which by reason of the four colours of the warp appears to change fourfold. In former



*Woman of  
El Kalaa  
(province of Oran,  
Algeria) weaving  
a carpet.  
She is in the act  
of beating down  
the weft with a  
heavy iron comb.  
Photo: Ofalac,  
Algiers.*





*Small old rug of Kairuan (Tunisia).*

days the patterns used to correspond to the painting of Moroccan houses, but under the influence of imported fabrics they have long degenerated into a leaf-pattern without style or character. The material, however, is still superb. Khuami curtains consist either entirely of silk or have a silk warp with cotton weft. They are fabrics with yellow or garnet-coloured bands separated by bright stripes very finely drawn. The weavers also make very rich cloths of silk, gold, and silver thread, similar to the sashes. These serve both for decorating rooms for wedding celebrations and for draping tombs in the sepulchral mosques; yellow, green, and red silk shawls (*spani*) are made for the peasant women, furthermore, turbans (*cherb*) for the women of Fez. These are made of raw silk with salmon-pink silk at the ends and a border of silk threads. As a rule, however, they are not worn in these colours, which to European eyes are of great artistic charm, but are then dyed black and orange by the natives. Other products are plain, closely woven silks for saddle-gear, the haiks already mentioned, and fabrics known as *Ulak Sehel*.

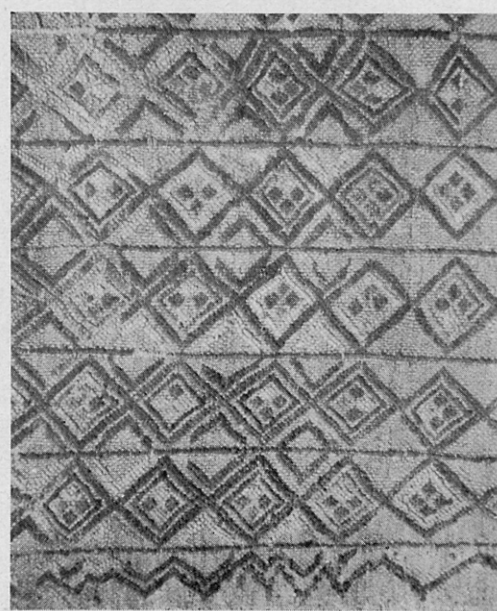
### *The Dyeing of Wool and Silk in Morocco*

Aniline dyes are very widely used in Morocco today. Where they are not in use, the dyeing processes are approximately the same as those common in Europe before the invention of synthetic dyes. The dyes used by the natives are, or were, chiefly indigo, cochineal, madder, woad, spurge-olive, curcuma, log-wood, henna, and pomegranate-skins with alum as a mordant. Black was achieved with sulphate of iron, the effect of which changed the original shade of colour.

The equipment of a dyer's workshop in Morocco consists of two or three fireplaces of clay and brick, fitted with large earthenware or copper cauldrons respectively: furthermore, a hand-mill consisting of two flat stones, a mortar for pounding dyes, sticks for stirring the dye and wringing the thread, and finally long poles suspended from the ceiling for drying the dyed silks and wools.

For blue dyeing indigo is used, which has been brought to Morocco in English ships since the 18th century. It is sold in lumps, and ground to a fine powder in the hand-mill. This powder is poured into the built-in cauldron of the furnace, until the water turns dark blue in colour; to this are added two handfuls of dried figs, dates, or sugar, with-out any other mordant, and also a quantity of lye. The mixture is then allowed to ferment;

*Tunisian mat of esparto-grass embroidered with wool.*



this state is advertised by a distinctive smell, to recognize which is the sign of a good dyer. Before the actual process of dyeing, the bath is slightly warmed. The strands of wool or silk are first soaked in clean water, and wrung out; then they are dipped into the bath, and stirred about to ensure the penetration of the dye. According to the strength of the solution and the shade of blue desired, the time of immersion varies from five or six seconds to three or four hours. Throughout the process the temperature of the bath must be such as to allow the hand to be dipped into it without having the sensation of burning. After dyeing the strands are wrung out, rinsed in cold water, and dried.

For red dyeing, madder was formerly used, a dye extracted from a plant of the Rubia family native to Morocco. This process has been revived by French interest in the carpet-industry. Before dyeing, the wool is boiled for about two hours in a solution of alum and tartar, the quantity of which is just enough to cover the strands of wool. They are then thoroughly rinsed in running water, and stamped on with the feet to press out all water. At Rabat rinsing is done in the river.

After being pounded in a mortar, the madder is poured into a cauldron of boiling water: into this mixture the wool is then dipped, and boiled for about an hour. The strands are then washed and dried, and any grains of madder which might still adhere, are shaken out. Wool dyed in this manner shows a brilliant shade of vermilion.

Cochineal-dyeing is still popular. As in the case of madder-dyeing the wool is first treated with alum as a mordant; it is then washed and placed in a decoction of cochineal, where it is boiled and continuously stirred for fifteen minutes. It is then rinsed in cold water; the result is a bright cherry red.

Before the introduction of aniline dyes, the most popular and most serviceable yellow dye was wau (*reseda luteola*), which grows wild in Morocco. As in the case of cochineal and madder-dyeing, the fabric is first treated with alum. A cauldron is filled with dried wau; water is added and boiled until all the dye has been extracted, the wau is then removed, and the wool is placed in the cauldron; after about 20 minutes it assumes a greenish-yellow hue; by the addition of a lye a warmer shade may be achieved.

*Algeria. Weaving fidjs. Weaving fidjs or tentcloths is a trade plied among the romads throughout North Africa. Photo: Ofalac, Algiers.*







*Coloured curtain of El Hamma, Gabes, Tunisia, with geometrical figures in pattern.*

Spurge-olive, "lazzez" in Arabic, is used in the same manner as a yellow dye.

The curcuma plant yields a beautiful yellow, but its use as a dye presents some difficulties. The root is pounded to a fine powder in a mortar, and is then boiled with alum; the skeins of thread are immersed for 10-15 minutes, and then sprinkled with the powder, to ensure that those parts which absorb the colour more slowly will be adequately dyed.

Terracotta is supplied by the small leaves of the henna shrub, which the natives dry and powder. It is used for dyeing without boiling; the natives dissolve it in water, to which slices of lemon have been added, and soak the threads in the solution.

Composite colours, like green or violet, are achieved by a succession of baths containing the basic colours.

The most usual method of dyeing black is to dye first with curcuma (yellow) or with

pomegranate-skins (brown) and then to dip the threads into a solution of sulphate of iron, which changes these colours.

The Moroccans produce an excellent lye by filtering a mixture of wood-ashes and unslaked lime. This brown lye serves to make certain colours, especially yellow, more vivid, and, as mentioned above, to prepare indigo blue. The same methods are followed in silk-dyeing, and, with few exceptions, similar shades are achieved. Whereas cochineal-dyed wool is a trifle gaudy, it produces in silk a superb poppy red.

It may be added that the tribes of the interior of Morocco extract yellow and pale green from the tizra plant, black from spurge-olive, to which they add bog-earth or oak-bark mixed with sulphate of iron.

It must not, however, be forgotten that the wool in Berber rugs is often undyed, among some Berber tribes, e.g. the Beni Mgild, white is the prevalent colour.

Today, the dyers of Morocco frequently use synthetic dyes, but unfortunately not always with the necessary skill and discretion.

*Girls of Mahdia (Tunisia) in festive robes embroidered with gold and silver threads.*



***Fast shades  
on woolen and worsted  
pieces***

dye easily level  
can be "salted on"  
or shaded at the boil with

***Neolan Yellow BE***

***Neolan Orange GRE***

***Neolan Red BRE***

***Neolan Red GRE***

***Neolan Blue GG***

***Neolan Blue 2 R***

***Neolan Green BL conc.***



## Algeria

As far as weaving is concerned Algeria occupies a unique position. Research is made difficult by the fact that French colonization coincided with the modernization of the country, which resulted in a decline of the native crafts. This development may be observed in all colonial areas where modern civilization and machinery have been introduced. Since the beginning of the present century very serious efforts have been made to revive the native crafts and to restore the local methods and artistic traditions to their former esteem.

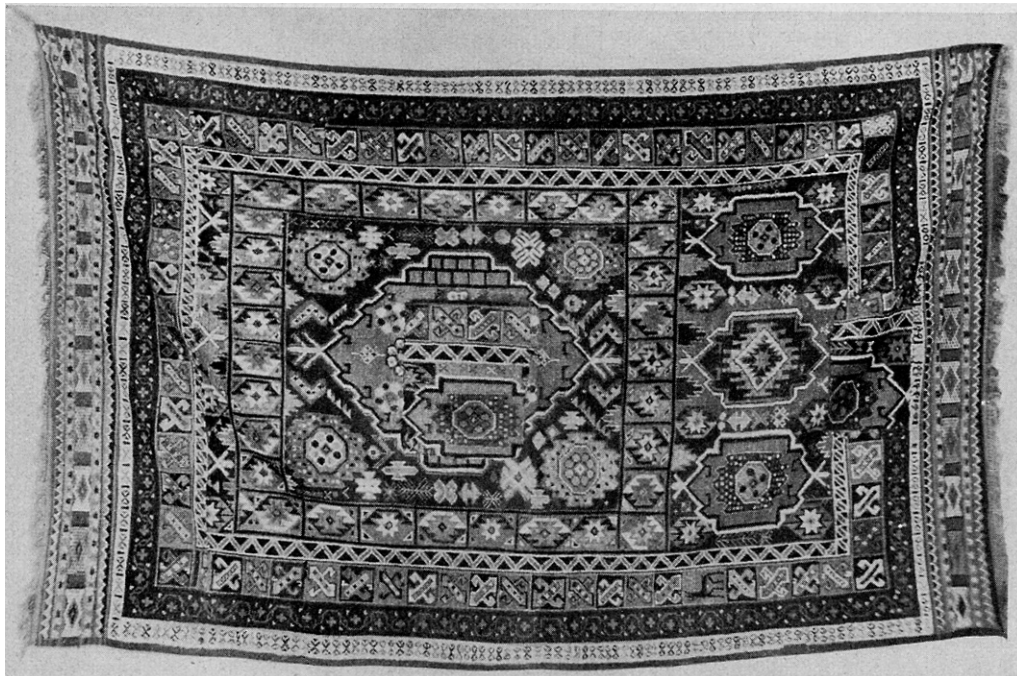
Native weaving as it flourished before the French occupation, and as it still remains uninfluenced by modern machinery in some districts of the country was very simple. The equipment consisted almost exclusively of the vertical loom, as we have seen it used by the weavers of Morocco. The traditional methods of dyeing, which have been almost entirely ousted by artificial dyes, were very similar to those of Morocco. A few dye-plants and minerals may be mentioned here; for blue, woad (*isatis tinctoria*); for green, indigo, to which gall-nuts and *reseda luteola* were added; for yellow, wold (*reseda luteola*); for black, indigo with gall-nuts, sulphate of iron,



*Berber youth dressed as a dancer in female apparel with richly ornamented sash and plaited beaddress. He has thrown himself down in a posture of the dance with his head resting on the small drum. Photo: Titus Burckhardt, Basle.*

and *reseda luteola*; for purple, indigo and cream of tartar. Fixing was done by means of alum. Other dye-plants known to the country are: for yellow, buckthorn, the flowers of the cotton plant, *tamarix articulata*, which was mixed with onion skins: for red (besides

*Example of a Kalaa rug showing the characteristic pattern. Algiers. Photo: Ofalac, Algiers.*



madder and the cochineal insect), lac-dyes, dyer's bugloss, sumac, and the kermes insect which breeds on oak-trees; focca, a plant which, when treated with white grape-juice, lemon, or vinegar, turns vermilion; the juice of the pistachio-tree, which, if treated with sulphate of iron and gall-nut juice, yields a black dye.

In Algeria, as in the Orient proper, the knotter or reggam, as he was called, was an important figure in carpet-weaving. He wandered from camp to camp, teaching the women the art of ornamentation and the composition of the patterns. Whilst the women sat at their looms knotting the woollen threads, the reggam would show them how many knots were required in each row for a cross, a flower, or a garland, and would accompany the work with a song. It is said that the rare privilege of visiting the otherwise strictly secluded apartments of the women was occasionally abused by these men, whose activities were in such cases often brought to a sudden and dramatic end. The different kinds of Algerian textiles may be distinguished as follows: plain fabrics, which were probably used only for clothing, for the burnous of the men and the haik of the women, and which were woven on vertical looms. Apart from these there were thick fabrics woven in tapestry-technique, of which six may be distinguished. There was the hembel, which served to separate the men's part of the tent from that of the women. These cloths were often 45-60 ft. long and 6 to 10 ft. wide. Then there were the getif, 15-20 ft. long and 6-10 ft. wide, which were spread on the ground for sleeping on; the matrah, cushions or pillows; the djellal, horse blankets of very light material; the imatt, saddle-bags; and the tellis, large grain sacks.

The most important centres of manufacture were Algiers, Aflou, Aumale, Biskra, Batna, Bu-Saada, Chellala, Souf el Oued, Kalaa, Setif, Saïda, Tiaret, Tlemsen, etc.

Algerian pile carpets may be divided into three groups, the carpets of Kalaa, of Djebel-Amur or of Aflou, and those of Guergour.

The carpets of Kalaa (see ill. p. 753) are distinguished by the division of the surface into squares or other sections, by the straight-lined geometrical pattern (plant motifs are rare), and a border which is frequently very narrow, and sometimes omitted altogether. The colours are usually red, brown, black,

white, blue, green, and a yellowy brown. The colours are distributed in such a manner as to make a half-white or half-red square on one side of the axis correspond to a half-red or half-white one on the other.

The Djebel-Amur or Aflou rugs have preserved their Berber character best. The basic element of the design is a lozenge framed in small, hook-like figures placed at right angles to the four sides of the lozenge, and which contains a smaller lozenge with a St. Andrew's cross in the middle. It has been suggested that there is some connection between this pattern and those of Russian and Swedish rugs; and there certainly were many connections between Algiers and the Scandinavian countries before the time of the French annexation. The background is of fairly dark blue, from which the red pattern, which is sometimes picked out in green, stands out in strong relief. The wool is long and soft. Like the Berber rugs of Morocco, those of Djebel-Amur serve as seating or sleeping accommo-

*Tunisian women wearing the haik. Woollen fabric with fine silk stripe, woven on a horizontal treadle loom.*





*Blanket from  
Gafsa, Tunisia.  
The pattern  
is so arranged  
that light and  
dark squares  
alternate,  
thus producing a  
chequered effect.*



dation for the natives, who spread them with their fleecy side downwards, so that what we regard as the back of the rug is in their eyes the upper side.

The rugs of Guergour or of Constantine are distinguished by a broad border and a hexagonal centre-piece, with a star-shaped, four-

cornered figure, the "seal of Solomon" and the daisy as additional motifs. These rugs, in their design more reminiscent of the carpets of Rabat and of Kairuan than any others, have among all Algerian carpets been most influenced by foreign motifs.

The rugs of the Msabites are woven in



*Mats of esparto-grass. Tunisia.*

tapestry fashion, and have a closely knit Berber pattern in brilliant colours.

In addition to these Algerian rugs in the strict sense of the word there are imitations of Tunisian or Moroccan fabrics, made either by the natives themselves, like the djerbi, thick blankets similar to those of the island of Djerba in Tunisia, or like the Rabat and Oriental carpets made in the workshops of the nuns.

Finally, mention must be made of a certain type of smooth carpets, the most interesting of which are the dokhali of the Sahara oases, and the texture of which somewhat resembles that of the hendira of Morocco. They have large red or white patterns arranged in stripes or crosswise on a plain background.

These are the principal facts concerning the textile craft under the former Regency of Algiers. For the last fifty years French official circles and private individuals have been at pains to foster this branch of native industry, which as a result of these efforts, began to flourish anew. In spite of modern machinery, and thanks to genuine handicraft and the conservatism which retains old fabrics and designs, the products of the craft have remained unmistakably Algerian. Since the Great War in particular, the manufacture of pile carpets in Algeria has attained great economic significance.

## **Tunisia**

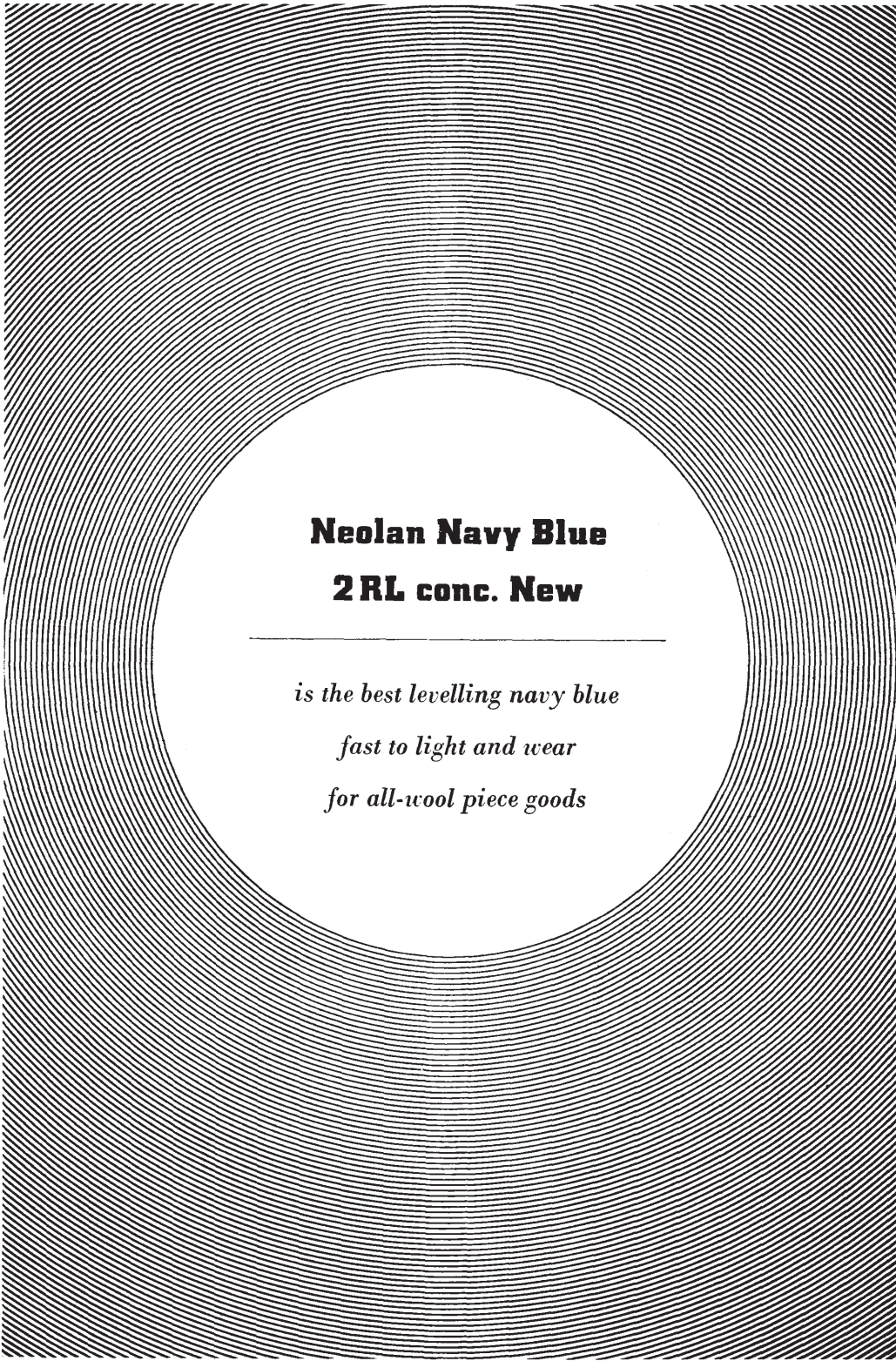
With the exception of Egypt, Tunisia is the oldest centre of civilization in Africa, and one of the oldest in the world. Carthage was the capital of a world empire long before Rome was, and even before it was founded in 880 B.C. there was a town on the shores of the Lake of Tunis. When, after the Romans and Byzantines, the Arabs occupied the country, the coasts of which stretched out towards them as though to receive the gifts of the Orient, they entered into a heritage a thousand years old. This is not without significance for the textile art of the country. The customs and tastes of the people of Tunisia are traditionally more refined than those of the Moroccans and Algerians. It is, therefore, natural that the industries which worked for the adornment of the interior of people's houses and for the perfection of their dress—the weaving industry in particular—were always flourishing.

The raw materials used by the native weavers to this day are rushes, flax, cotton, wool, and silk; in addition to these, goat and camel-hair, esparto-grass, and dwarf-palm fibre which are used for tents, coarse fabrics, and mats by the tribes of the interior.

## *Mats*

At Nabeul, south of Cape Bon, the rush mats of Tunis are made, which, though in





**Neolan Navy Blue**  
**2 RL conc. New**

---

*is the best levelling navy blue*  
*fast to light and wear*  
*for all-wool piece goods*

fineness of texture and beauty of design not equal to those of Sale, are nevertheless very popular throughout the country. The mats of esparto-grass (see ill. p. 756) have the advantage of smooth surface and close texture, but the drawback of a prickly under-side, which collects dust and dirt very easily. Like the mats of Morocco, they are sometimes embroidered with wool (see ill. p. 749).

#### *Linen Fabrics*

At one time there were extensive flax plantations in the district of Cape Bon and Biserta, both districts being among those which remained unaffected by the various immigrations of Andalusian Moors. The flax, which was spun at home, was used by the weavers for the manufacture of strong shirts and linens. European competition has, however, killed this industry, which survives only in Nabeul, south of Cape Bon.

#### *Woollen Fabrics, Smooth and Pile Rugs*

In the coastal districts of Tunisia, weaving is usually performed on horizontal looms fitted with treadles, which are worked by men. In the interior and in the South, women weave on vertical looms.

The woollen fabrics which are manufactured in all important towns, are of special quality in Djerba, Gabes, Sarsis, Toseur, Nefta, and Deggache. Throughout Tunisia wool is washed, carded, combed, and spun by women. Wool is used both on the horizontal and on the vertical loom for the manufacture of striped blankets, 8 to 10 yards long, of haiks for women and burnouses for men.

For the manufacture of kilims and pile carpets the most important centre is Kairuan, situated in a sheep-breeding district. It is said that, towards the end of the 18th century, when the Oriental carpet was beginning to become popular in Tunisia, a number of noble families instructed the weavers of Kairuan to copy such carpets. However that may be, the fact remains that the carpets of Kairuan, like those of Rabat and Guergour, are distinguished by their Oriental character. They differ considerably from the Berber rugs which form the basis of the native industry of North Africa. A series of borders round a central motif or a kubba in the shape of a long-drawn hexagon with four corner motifs form the ever-recurring pattern of these rugs.

The patterns are almost the same as those of the two kinds of Moroccan rugs, though they are not equal in fineness and variety to those of Rabat.

Nevertheless, the old Kairuan rug was of pleasant appearance (see ill. p. 749). Unfortunately, the natives of Tunisia, too, were unable to use the imported dyes properly. To put an end to the disrepute into which one of the most important industries of the country threatened to fall, a number of Frenchmen at the beginning of the present century began to encourage the production of undyed rugs, i.e. the use of the fleece in its natural shades from black to white. For many years these rugs have been popular. For some time, however, the French administration has been endeavouring to reinstate the dyed rug, and to this end native dyers have been instructed in the use of new dyes. The dyes formerly used were much the same as those common in Morocco and Algeria.

*Girl from Gabes. (Tunisia) wearing the blue woollen "bagjuk".*







*Woven hunting-pouch, wool, 16 × 16 ins. Sfax (Tunisia).  
Museum of Ethnology, Basle.*

The weavers of Kairuan originally made only three kinds of pile rugs: prayer-mats, saddle-rugs, and carpets; the latter were long and narrow, but to meet European requirements were later reduced to a shape approximately square. The long, narrow carpets uninfluenced by European demands owed their shape to the narrow looms and to the ground plan of the native houses with their long narrow rooms.

In Kairuan, there were also two varieties of smooth rugs: the kilim with its geometrical pattern and coloured stripes, and the mergum, which is entirely covered by geometrical figures, lozenges, cross-stripes, angles, etc.

Pile rugs of somewhat clumsy design come from Biserta (see ill. adjoining), from South Tunisia others with naively imitated Kairuan patterns. The kilims of Ayacha, called *tajera* and *baghmuk*, are of fine and harmonious pattern. To make large tents they are connected with broad red, black, or white stripes of smooth cloth, known as *hamels*, from Sarois.

Worthy of mention are the saddle-cloths and "klims" of Udry with their stripes and geometrical figures, further, the wall-hangings of El-Hamma from Gabes (see illustration page 751), and the "muchtia" of Djebiniana.

### *Cotton Fabrics*

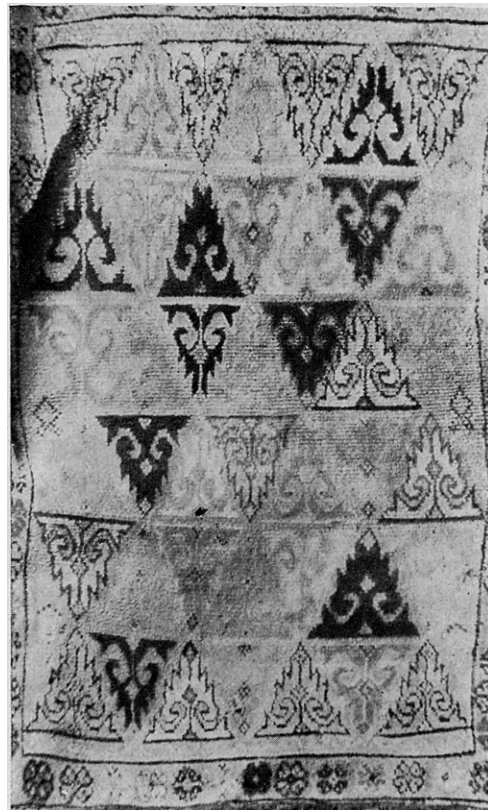
Though greatly hampered by European competition, cotton-weaving in Tunisia is still comparatively vigorous. The thread is imported from India or England, having previously been dyed, blue thread only being dyed with indigo by the native dyers. Indigo was formerly grown in Tunis, but is nowadays imported by French or English merchants.

The most important cotton textiles are large white or striped bath-towels made in the city of Tunis itself, and the broad *fouta*, of which the garments of Bedouins and peasant women are made. These are red and blue checked fabrics made by village weavers of the Mahdia district on treadle-looms, and also by weavers from Tripolis who have settled in Tunis and Djerba. For village brides these *fouta* are adorned with embroidery in silk and silver (see ill. p. 751).

### *Silks*

In Tunisia the manufacture of silk fabrics is the privilege of a certain corporation, which

*Large-patterned rug of Biserta (Tunisia).*



is regarded as the aristocracy among the craftsmen. In Tunis there were numerous silk-workshops about ten years ago. They were situated close together on the ground-floor of houses whose first floors were used as a species of caravanserei or fonduk, with windows opening on to a courtyard.

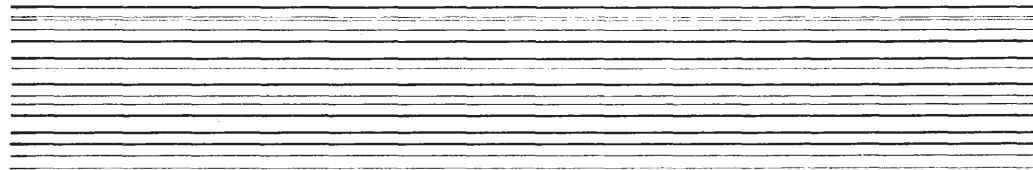
At one time silk-growing was carried on in the country itself, in Tunis and Gabes. Later, raw silk was imported, the cleaning and carding of which gave occupation to women and apprentices. Thus, a flourishing silk industry held its own until about 1925. Its products were shawls, fouta, haiks, veils, either of pure silk or silk and wool, tunics, sashes for men and women, etc.

Patterns were usually confined to stripes in red, black, blue or yellow; one exception were the veils worn by the wives of wealthy men, the patterns on which are reminiscent of old Spanish-Moorish fragments. These veils, known as ajar, were black, transparent in the middle, the ends being decorated with

geometrical motifs and conventionalized flowers resembling carnations. On going out, women threw these veils over their heads, and held them with both hands before their faces, leaving the ends to hang down on either side.

In the 19th century, fabrics of similar designs were made as decorations for the houses on holidays and feast-days. This custom now only survives in Monastir, at weddings. The competition of modern machinery has killed native weaving in Tunis; in the oases of Defta and Deggache, however, it appears to survive and flourish; several hundred women work there, weaving luxury fabrics for the women of the nomad tribes and for the villages in the South.

In conclusion it may be mentioned that the French administration is endeavouring to check the decline of the native silk industry. It is, however, a difficult task, and it is not easy to say whether or not the efforts will be successful.

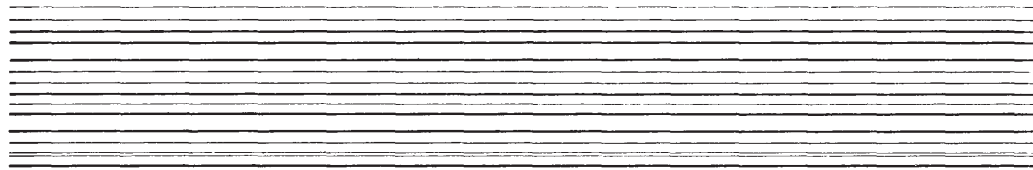


*The Neolan Colors* are eminently suitable for printing

**wool and silk**

**wool and viscose**

**silk and viscose**





## Practical hints

### Sapamine CH in the Dyeing of Insoluble Azo Colors, the Ciba Naphthols

As is well known, the dyeing of Ciba Naphthols consists of two distinctly separate operations, first the impregnation or padding of the material with a naphthol, and secondly, the coupling with a diazotised base. Generally the preparation of the naphthol solution is quite a simple operation, but it is possible to run up against many difficulties in the diazotisation, particularly with bases whose hydrochlorides are only sparingly soluble in water, and consequently hydrolyse very easily, as instead of a clear diazo solution being obtained, oily or resinous precipitates are thrown down, which may cause serious trouble in the ensuing processing.

Sapamine CH is an auxiliary product which prevents this drawback, and is admirably suited for the purpose. With Sapamine CH the bases and hydrochlorides can be more efficiently padded up and the emulsifying action of the Sapamine is beneficial in the diazotisation of the bases. We should like to mention specially the following bases and hydrochlorides which can be diazotised more easily in the presence of Sapamine CH

Scarlet Base Ciba IV  
Scarlet Base Ciba V  
Scarlet Base Ciba R  
Red Base Ciba VIII  
Violet Base Ciba III.

A further property of Sapamine CH is its stabilising effect on the diazo baths. It is generally recognised that diazo solutions neutralised with sodium acetate may only be kept a relatively short time. It has been proved that the presence of Sapamine CH increases the stability of such solutions. (This effect is of a general character and it may be observed for instance in the case of the diazo compounds derived from alkyl ethers of oxy-derivatives of p-amino-diphenylamine). During the coupling the developing baths remain clearer in the presence of Sapamine CH and the dyeings are fuller and faster to rubbing than those obtained by coupling without the addition of Sapamine CH.

In conclusion it should be stated that Sapamine CH has no detrimental effect on the fastness to washing, soda boiling, chlorine, and light.

#### *Proportion of Sapamine CH to Base or Hydrochloride*

For 10 parts by weight of base or hydrochloride 2 parts by volume of Sapamine CH are required; proceed as follows:—

a) *for Hydrochlorides:*

10 g hydrochloride are pasted up with hydrochloric acid and 2 ccm Sapamine CH, then the requisite volume of water added and diazotised in the usual way.

b) *for Bases:*

The base is mixed with twice the amount of water (either cold or warm according to the base), then the Sapamine CH is added whilst stirring the mixture, then the requisite amount of cold water is added and the diazotisation carried out in the usual way.

*Ciba Dyeing Labs.*

### **Improvement in the Rubbing Fastness of Dyeings and Prints**

Dyeings and prints of certain classes of dyestuffs frequently exhibit poor fastness to rubbing. This is the case with many vat colors and particularly so with indigo. The dyeings of the insoluble azo colors also frequently show the same defect, and it is noteworthy that even Alizarine Red (formerly known as Turkey Red) with its all-round fastness showed poor fastness to rubbing.

As the fastness to rubbing depends on the dispersion of the pigment and the manner of its deposition on the fibre, it is only seldom possible to modify the dyeing or printing method to have any effect on the rubbing fastness. It is however possible in many instances to overcome this defect almost completely by an appropriate finish. For example indigo dyed material can be made practically perfect in its rubbing fastness by the undermentioned treatment.

A stock solution of

4800 g. glue  
80 l. water  
1200 g. formaldehyde

is made up.

Then a finishing mixture is prepared by diluting

16 l. stock solution with  
80 l. water.

Where a filling effect is desired, varying amounts of dextrine may be added to the water.

For continuous running, the feeding liquor is made up as follows:

24 l. stock solution  
56 l. water.

Again, varying amounts of dextrine may be dissolved in the water, according to the degree of filling required.

The treated material is dried on the stenter immediately after the impregnation and probably owing to the glue becoming insoluble, it is deposited as a fine film and prevents the pigment rubbing.

Such finishes can naturally only be kept for a limited time, and a standing bath cannot be used. R. H.



## Historical Gleanings

### Textile Patterns and the "Evil Eye"

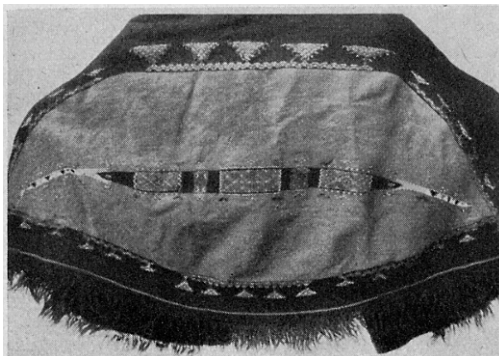
The eye, as the mirror of man's soul has always been regarded as the seat of particular powers.

Evidence of belief in the magic power of the eye is to be found everywhere among primitive peoples and in the Orient; in Europe, too, especially in rural districts, there are still many traces of this belief.

According to such superstitions, the eye has the peculiar faculty of harming or bewitching men or animals. Disease or misfortune will afflict the victim of the 'evil eye'. No wonder that many remedies against such affliction were tried. There are many forms of defence, some of them by no means confined to primitive peoples; many customs which nowadays seem inexplicable and some kinds of jewellery affected in Europe today at one time served as charms to ward off the evil eye. Brass facings and tassels on horses' harness are said to have thus originated. Infants and children were believed to be in particular danger from the evil eye. Until comparatively recently it was the custom in Germany to give to children who were believed to have been stricken by the evil eye a drink of tea made from fleabane (*Erigeron canadensis*). Many plants or herbs are accepted remedies or cures of the affliction, e. g. garlic, ferns, sea-onions, juniper-berries. In Ireland the 'herb-witch' was called in to neutralize the effects of the eye. Fire and water also are deemed effective and curative. In some parts of the world it is the custom to lick the infant, in order to protect it against danger from the evil eye. In Scotland it was customary for the husband to place a pair of trousers on the foot of the bed in which his wife and her newborn infant were lying.

Innumerable amulets also served as a protection against the same evil, and were placed everywhere where they might be considered effective. In Denmark it was customary to draw an eye on all objects to be protected against the evil eye. The symbol of the eye is also of great importance in North Africa,

*Pattern on a Berber cloak as a protection against the evil eye. Museum of Ethnology, Basle.*



and the commonest of all protective measures to ward off the evil is the hand with wide-spread fingers which is found on houses, ships, and textiles.

The cloak photographed on this page was worn against the "evil eye". It came from North Africa, and the geometrical pattern, which perhaps originated in the same way, proclaims it as having come from Barbary. Voe.

### Silk Worm breeding in Prussia

Among the economic measures taken by Frederick the Great of Prussia, the cultivation of mulberry bushes received his particular attention. The king mentions his experiments in his political testament of 1752, and gives a general indication of what had been his procedure in the matter. Soon after his accession he had mulberry bushes planted; every parish had to undertake to plant a certain number. In 1752 there were in Prussia more than 400,000 mulberry bushes which yielded 2000 pounds of silk. The country used more than 400,000 talers worth of silk per year. Frederick fixed the price of native silk at the same level as that of Italian. The country parishes which supplied the largest quantities of silk received premiums; those who planted mulberry bushes were accorded various privileges.

Money grants were awarded to manufacturers who set up silk-loom; and a large silk warehouse was opened at Berlin with a capital which was to be increased to 100,000 talers, a very large sum indeed for that time.

When, in 1741 and 1742, plans had been drawn up for the mulberry plantations, French colonists were entrusted with their construction and care; there were de Campagne, d'Elbech, the brothers de la Rouvière, the French gardeners Robert and Bastidion, and Chevalier Malbose.

In 1745 an inspector of plantations was appointed, and it was forbidden under pain of severe penalties to damage mulberry bushes or to sell them outside the country. In 1748 the expenses of silkworm breeding amounted to approximately £1,000: in 1749, 4304 mulberry bushes were bought for 312 talers (ab. £50); in 1752 about 198 pounds more silk were produced than in 1751.

There were occasional set-backs, caused by the fact that the French and Italian silk-worm breeders did not always give due consideration to the difference between the climate of Prussia and that of their respective countries. The entire business of silk-production became more systematic when a certain J. F. Thym, a candidate of law, was appointed inspector of the plantations. He had already written a manual of silk-growing (Berlin, 1750) which ran into six editions. Mulberry bushes were planted in cemeteries and along the public high-ways; the planting of corn

on mulberry ground was forbidden, and instructions for planters were issued.

According to the report of the directorate general, 54680 mulberry-trees were to be planted in Prussia every year; in 1753, however, only 32119 were planted. In that year the total number of mulberry trees in Prussia was 1792216. In spite of all efforts, silk-growing was not flourishing. In 1779 mulberry trees were imported, 112 from Piedmont, 220 from Milan, and 48 from Montpellier; a Milanese named Catena was appointed inspector of the silk-growing plantations. The appointment of foreign experts also had its difficulties; an expert of Lyons, Taillandier, had been engaged; but it soon became evident that his native city did not wish him to divulge his great knowledge in a foreign country, and that efforts were being made to induce him to return. For that reason Taillandier was closely watched, and his correspondence carefully censored.

As a result of all these efforts the number of mulberry trees rose from 1,814,762 in 1778 to 1,847,347 in 1779. The government took great pains to promote silk-growing even more; on plantations of 20,000 trees a house was provided for the grower; where 1000 pounds of cocoons yearly were expected, a carding machine was provided. Mulberry-seeds and silk-worms' eggs had to be sent to the silk warehouses in the autumn, and were distributed again in the spring. It was hoped to increase the output by improved supervision of the plantations, improved breeding of silk-worms in breeding-houses, and by careful training of the staff who tended the trees.

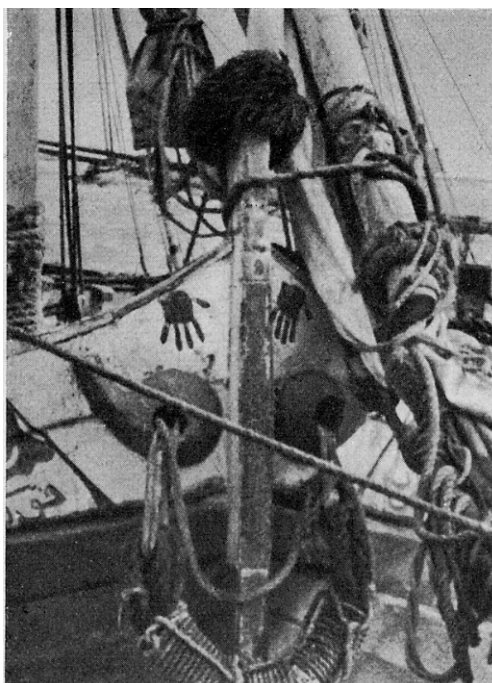
The results were not unsatisfactory. In 1746 there was only one silk-factory in Prussia, with the exception of those in the Krefeld district in the West: in 1775 there were nine factories in Berlin alone; in 1783 they employed more than 5,000 workers, and sold 1,350,000 talers worth of silk in Prussia itself and 530,000 talers' worth elsewhere. Towards the end of Frederick's reign, in 1782, there were more than 3,000,000 mulberry trees in Prussia, which yielded (in 1785) 17,000 pounds of silk; altogether Frederick spent about 2,000,000 talers on the silk industry.

G. M.

#### Hands as Symbols

In the East, where the language of signs has elaborate symbolic meaning, a movement of the hand may mean curse or blessing. Among the Aegean fishermen the open palm held out towards a person implies a hope that he may be stricken blind.

Closely linked with such symbolism is that of the handprint. The palms of the hands are often turned towards the particular god which is being worshipped, and that explains the fact of Hindoos imprinting the mark of their hands on the dung of the sacred Zebu cattle. Mohammedans, whose gesture of prayer is the



*Print of a hand on a Mohammedan sailing-vessel in the harbour of Port Said. Photo: G. Schaefer, Basle.*

open hand, who swear by Allah with palm upraised, imprint the mark of their hand in the clay above the lintel of their door. This sign of adherence to Islam is also found on sailing-ships. By affixing the mark of the hand, the fate of the boat is commended to the care of Allah, a fact made plainer still by the inscription in Turkish: "rani bin yüd rabi" - "the ship is in God's hand". The colour of the print in the case of the boat photographed in Port Said harbour and reproduced here is blood-red; it leaves no doubt that these bold fishermen are descended from the dreaded pirates of the Mediterranean, whose hand-prints were intended to bring death and destruction to the infidel.

Sch.

#### Inn-keepers as Public Officials

In the Flemish cloth-cities inn-keepers had to pay to the administrators of the cloth-halls a sum of money as a guarantee that they would ply their trade conscientiously. It was part of their duties to take care that foreign merchants lodging with them did not leave without paying for the goods which they had bought. For this duty they received what was known as "werde-ghelt", a commission varying with the value of the merchants' purchases in the cloth-halls.

A. L. G.

---

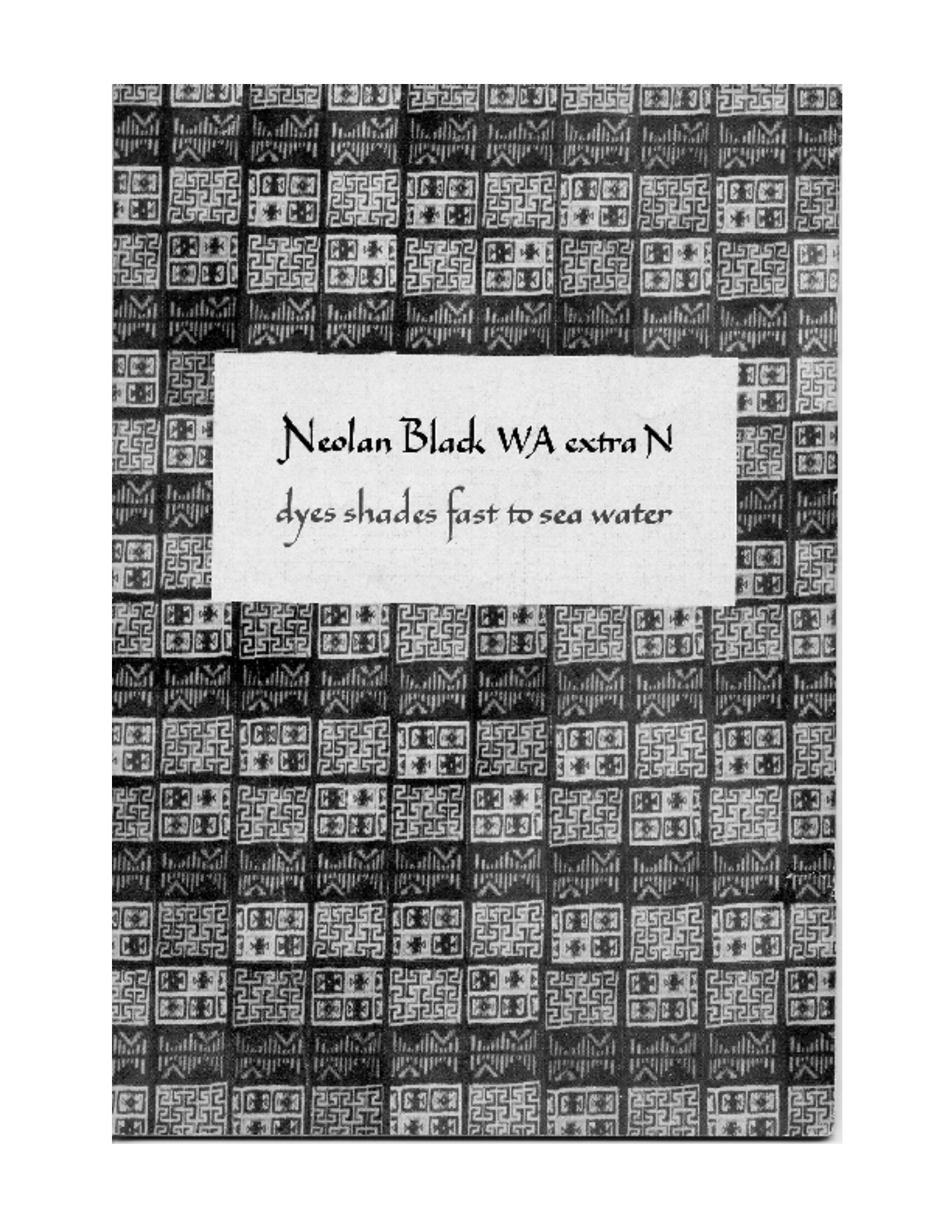
PUBLISHED BY THE SOCIETY OF CHEMICAL INDUSTRY IN BASLE (SWITZERLAND),  
REPRESENTED BY CIBA COMPANY INC. - 627 GREENWICH ST., NEW YORK, N.Y.

*Printed in Switzerland*



# Neolan Blue GG

levels well  
with a small percentage  
of sulphuric acid  
which renders it  
an excellent blue component  
for compound shades  
with level dyeing acid colors



*Neolan Black WA extra N  
dyes shades fast to sea water*