

Brief History of Oriental rugs, Classifications, Knots...

In the Old Testament (ref. 26, 8-38) it is spoken of the tent arranged from weaving of coverlets. The earliest Oriental rug currently known is related to the Vth century BC. It was found by archaeologists in a Pazyryk kurgan on Altai, it is being stored in Ermitage museum now.

The first mankind's woven pictures were found in a tomb of pharaoh Tutmos IV. They are related to the time of the New empire (XVI-XI BC). One of Ben Hassan's frescos, dated X BC, shows all the weaving process as we know it today.

Most ancient of the existing rugs was created in V BC.

Archaeologists have found it in the well-known Fifth Pazyryk barrow at Excavation of Russian archaeologist S.I.Rudenko in 1949, in Mountain Altai, natural boundary Pazyryk, a valley of Big Ulagan, in Russia. Now it is kept in The State Hermitage Museum (Saint Petersburg). This product, probably, in Assyria that specifies rather wide circulation carpet weaving already in that far time however was weaved. Pazyryk carpet is decorated with a laconic ornament with strongly pronounced anthropomorphic and zoo zoom orphicements (horsemen on horses). Clearly, that this kind of a covering served not only an ornament, but also the keeper of the valuable information. Relevantly to note good safety of a product - at correct storage rugs may live not one hundred and even one thousand years.



Pazyryk

Classification

All Oriental Rugs existing in a nature share on pile and non-pile. In turn, there are, mainly, two types of non-pile: kilims and sumakhs. These versions non-pile rugs have appeared in beginning V BC. Their beautiful east names mean only technical characteristics. "The ancestor" of non-pile carpet the mat - the very first in a history of mankind a floor covering is. The truth, in a far antiquity it reminded a carpet more - its pile was attached to a wum basis with the help of knots.



Kilim



Tekemet



Sumak

KILIM - non-pile hand-worked carpet which is not having technical that is back, sides. Weft salstring colour therefore the covering turns out bilateral. The ornament is formed with the help of knots, appreciable at close survey. Kilim it is possible not only to lay on a floor but also to use as a cloth, a coverlet, a drapery. Kilims, generally, are very light and also are simply cleaned. They are made manually only, that makes them unique and rather expensive.

SUMAK (SUMAC, SUMAKH) - In them the colour string forming an ornament is wound around of a basis as braid which end is deduced on a wrong side. In result sumakhs, generally, have the obverse and technical sides.

HAND KNOTTED ORIENTAL RUGS - today are most popular. Soft, iridescent pile is formed from issued outside of the ends connected in knots strings. Them either cut, or leave untouched.

One more group the most ancient products made of wool oriental rugs (**TEKEMET**) form only rather seldom meeting on the markets fulfilled rugs, perhaps. They apply as thermoisolational floor coverings, and also to overlapping roofs yurts.

Uzbekistan is the native land so-called "SUZANI" - unique in style of the antiquarian products frequently accompanying with silk application. On the character they correspond, faster, to running cloth that is why may be only conditionally referred to carpet products; nevertheless, Suzani are a component of many oriental rugs collections and are mentioned here in this connection for completeness of a picture.



Suzani

The so-called Goblin Tapestries occurring, mainly, from Flemish both French areas and used only for covering of walls and in quality wall coverlets are known also.

Technologies

Originally oriental rugs were made manually. Weaved them on a usual wooden frame. Weavers held an ornament in their memory, transferring "from hands to hands". Special curves which enclosed (laid) under ducks later have appeared. As a sample the available carpet might serve the master.

It is the easiest to count density itself. For this purpose on a seamy side of a carpet measure square "and in it count knots across and on a vertical, then received quantity (amount) to multiply. Too high parameter of density may become in some cases the reason of destruction of a product - the carpet will burst on bends (for example if it ineptly to curtail), and it will be hardly possible to rescue.

Materials

As it was already told, the basic and best material for oriental rugs from most ancient times is the natural sheep wool. In XX century, for the sake of cheapening of products, began to apply a cotton, flax and synthetics. For expensive wall rugs in olden time used silk.

Long time among chemical paints for textiles dominated anilines. Invented in 1847, they quickly have begun to be distributed and in 1853 have already reached (achieved) Iran. Aniline dyes have allowed putting manufacture of rugs on industrial rails. The truth, in first time these substances yet were not able to fix, and from water they flew. But the problem was completely solved by 20-th years of the last century. Red and orange colours are most

vulnerable in sense of a moult. Today aniline paints are gradually superseded polymeric and synthetic which do not require fastening and do not fade. The advanced, third generation of dyes - chromic. On properties they are practically indistinguishable from natural, but not such juicy on colour.

Oriental rug making

Methods of manufacture

Oriental Rugs are made by four various methods, namely: are made by nomads, peasants, and also in small workshops and on large manufactories.

If nomads and peasants carry out all operations of production in workshops and at the manufactory enterprises the division of labour takes place.

Productivity

Day-time productivity of weaving is defined by more or less complex pattern, a subtlety of work and a material of a oriental carpet. Usually it is approximately 7.000 up to 10.000 knots a day, but sometimes it may be much more or much less.

Weaving of a carpet

Weaving of a carpet is understood as interaction of strings of a basis and a wefts and warp knots installed in this cloth base. Such base consists of woollen, cotton, silk strings, strings of artificial silk (namely viscose, acetate silks) and a yarn from an artificial fiber (in most cases acryl). The same materials, but of more friable spinning, are also used for carpet pile. The cotton yarn as mercerized cotton strings is intertwined together with a yarn from silk waste products.

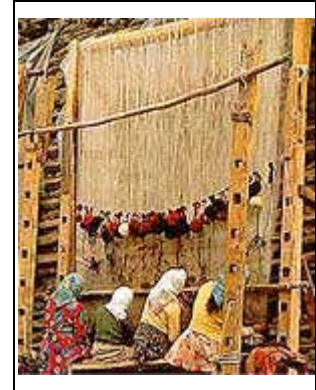


Process of weaving

During centuries the technology of weaving of carpets did not change. The only difference is that nomads had more primitive machine tools, and manufactory factories are more perfect. Nomads' machine tool is arranged simply from two sticks oriented parallel and mounted on the ground by pegs on which strings of a basis are tense. Such horizontal machine tool easily can be transferred from a place on a place, that at a nomadic way of life it is necessary. It is rather narrow, and this is answered with a narrow rectangular format nomads' carpets.

Common at work in workshops the vertical machine tool - that is made of two rotating platens connected by vertical sticks. On the bottom platen is wound on the weaved carpet while from the top basic the basis is taken up.

At primitive machine tools platens are motionless, that is the seat to the weaver is necessary to do all above, but this allows to survey a ready part of work. Strings of a basis are regularly and hardly tensed, they consist more often of a crude, unpainted material. Starting a new carpet, the weaver do not usually fasten knots at once, but weaves how many centimetres of a smooth strip of a canvas, and the last, edge string of a basis he spins from several that the edge left more strongly. A thread for units are extended from clews, ordinarily laying at the weaver on the top bar of his machine tool; each line of knots he lets out two - three lines of a middle wefts, beating their wooden or iron crest that the fabric turned out the necessary density and durability. Above the Caucasian Rugs work at knot fastening not simply as a hand, but with the help special hook-like knife (like a mattock) on which accept a wool for pile, on the spot an edge separating it from clew more often. Due to this working rate is accelerated.



Rug makers in Qum



Engineering of weaving

As every knot is fastened separately; the opportunity of absolutely individual colour registration and a choice of a pattern are provided. Weaving is carried out on memory or on samples.

As weaved-in knots always are tightened downwards, east carpets already at a stage of their weaving have typical inclination of pile, a so-called stroke. It is always inverted to the initial side of weaving of a carpet. Thus, there is an opportunity to speak about the top and bottom, right and left sides of a nodular carpet.

With a view of economy of time and a material, weaver distributes one colour after another, knot for knot, on the appropriate positions of each lines of knots. He acts the same way with the subsequent colours. Already during weaving a weaver cuts pile strings approximately at a level of the planned height of pile. After manufacturing each lines of knots he lays in a cross direction one or the several wefts strings.

After that intensive impact heavy brush-like is made by the tool which influences already plaited site with a view of condensation of pile. In summary pile has haircut up to a level of its final height. Thus the following rule operates: the is more thin knots, the it is below necessary to cut pile. If it is excessively high, it may result in an inclination of pile, and the pattern appears indistinct.



Real Oriental Rugs

You would wonder why they are real. The answer is that none of Arabic magicians would be able to fly most of the carpets that have overwhelmed our apartments.

But seriously, we need to point out that we will consider to be *real* only those rugs that are created by patient *hands* of women of oriental countries. The accent in this statement is not as much stressed at "women of oriental countries" as at "*hands*", for the hand-made carpets have one feature that no machine can replicate.



That is, the principal difference between the real rug and something that looks like one by its form, texture and material is, generally, in the main technological point and, accordingly, the facture element: the real oriental rugs pile is fixed on the base threads with a knot, and that is done not by a machine but human fingers.

A machine rugs cannot tie the Knots. The pile of a machine made "oriental rug" is simply stuck between the base and the wefts. Thus, talking about oriental rugs, we are going to forget for a while that there are rug-like products made out of synthetics and even "real unmeltable wool".

Rugs are being bought not only for home, for family. Within the last ten years many western corporations have refused of using artificial rugs and bought the hand-made oriental rugs. Clients that come to the lawyer office feel more trust towards the owner of that business when they see that the company can afford to spend \$200 000 for a oriental rug in the reception. The same with the hotels. Some swindlers use that fact that a carpet makes clients feel more trusting. It is much easier to roll a oriental rug and move it to a new place of performance that to pay for an expensive office's rent. Bank all over the world buy oriental rugs along with canvas and when they have hard for the primary business times, they exhibit their property, making money with that. While great masters' canvas cost up to \$9 million on auctions, ancient carpets sometimes may cost up to \$1-2 millions. Rug of Great Moguls' age (XV century) cost not less than famous "Sunflowers" by Van Gogh. One of the largest collections of Silk Rugs belongs to Lufthansa company. Large collections also belong to Austrian and German banks.

In the United States there are two month long trainings held for expensive oriental rugs' buyers. On that kind of training people learn how to avoid overpaying. The price of a oriental rug is a sum of labour and art put in it. The approach for defining the first component by multiplying the approximate cost of local labour force by the amount of months necessary for carpet manufacturing *is incorrect*. Aesthetic value, Ornament complexity, Wool Used and dyes used should also be considered.

For non-specialist it is hard to learn all sides of the matter even on completion of the trainings. Real oriental rugs are expensive. People all over the world buy them only in those places where they trust the seller or the place. An American can fly thousands of miles in order to buy a oriental rug from a seller in London, who many years ago was recommended to him by his father, for the latter had bought something in the same oriental rugs shop.

Here you can find some tips to help you tell the difference between a handmade rug and a machine-made imitation.

This discussion concerns only rugs made with 100% wool as the pile material:

- If a rug has a pile of polypropylene, polyolefin, or a pile made of a blend of synthetic polymers and wool, it is all but certainly a machine-made rug.

- If a rug is identified as "a Belgium Oriental", or as having been made in Belgium, Italy, or elsewhere in western Europe, it is all but certainly a machine-made rug.

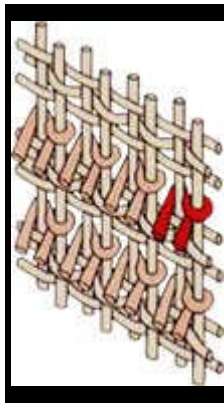
This comparison picture shows, at the same scale and resolution, a brand-name 3' x 5' machine-made rug next to a 3' x 5' hand-woven Tekke from Turkmenistan:

Note the strong visual differences between the machine-made and Handmade rugs. In particular, the back of the machine-made rug is very different in appearance from the back of the handmade rug. The design is not nearly as colourful on the back of the machine-made rug as it is on the face.

The construction of the machine-made rug is very different from the handmade oriental rugs. There is an overstretch pattern across the whole back of the machine-made rug. You cannot easily distinguish individual knots on the back of the machine-made rug because there aren't any - the overstretch construction is what holds the pile material in place. The fringe is clearly applied to the end of the machine-made rug after it's complete, whereas the fringe of the handmade rug is actually made up of the warp strings that come out of the end of the handmade rug.

Knots used in Oriental Rugs

Basically use two kinds of knots - giordes and senneh, and in Asia Minor and on Caucasus almost exclusively knots giordes while in Persia both types are common.



Persian knot

Persian knots matches asymmetrically around of pair located beside with each other strings of a basis; the pile yarn twists one string of a basis entirely, and the second - only half. Other names of knots of this type are: farsibaff, senneh knot named after the Persian city of Senneh (now Sanandadje in the Iranian Kurdistan) and asymmetric knot.

Turkish knot

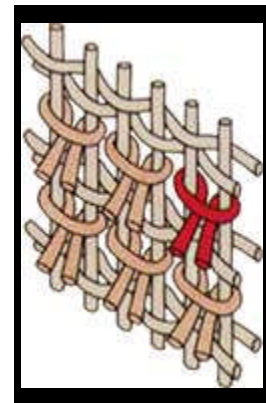
Turkish knots symmetrically match around of pair a line of the located strings of a basis; both strings of a basis are completely twisted with a pile yarn. Other names of knots of such type: turkbaff, gyordes knot named after Asia Minor city of

Persian knot

Gyordes and symmetric knot. Despite of the specified names, both types of knots have no precise national binding as both that, and another are used both in Turkish oriental rugs, and in Persian Rugs. Moreover, sometimes knots both forms can be met in one carpet.

There also exist more types of knots but as their share in the market of such carpets is not great, we shall not consider them in detail but only list. i.e.

- **Tibetan knot**
- **Berberian knot**
- **Spanish knot**



Turkish knot

• Quality of oriental rugs

- In general, quality oriental rugs command a higher price than coarsely knotted ones, if only because the material cost is higher and they take longer to produce. Nevertheless, the knot density is by no means the sole criterion of quality. There is as yet no fully agreed terminology for knot density although in recent years the following classification has come into use:

up to 500 knots per sq. dm (30 per sq. In.)	= very coarse
500-1,000 knots per sq. dm (30-60 per sq. in.)	= coarse
1,000-2,000 knots per sq. dm (60-130 per sq. in.)	= medium fine
2,000-2,500 knots per sq. dm (130-160 per sq. in.)	= fine
2,500-4,500 knots per sq. dm (160-290 per sq. in.)	= very fine
over 4,500 knots per sq. dm (290 per sq. in.)	= extremely fine

- Knot densities of over 4,500 knots per sq. dm. (290 per sq. in.) are rare in antique rugs, although they are not unusual in quality rugs with silk pile. A few well known wool carpets have knot densities over 10,000 knots per sq. dm. (650 per sq. in.), e.g. the Vienna Hunting Carpet has 12,700 knots per sq. dm. (1,000 per sq. in.) while the finest silk rug known has a knot density of about 40,000 knots per sq. dm. (3,200 per sq. in.).
- In the carpet trade knot densities are sometimes given per meter, i.e. the number of knots per 10 cm is measured and multiplied by ten. The more accurate method of determining the number of knots per square decimeter or square meter is however to be recommended. Moreover, useful information is sometimes contained in the individual horizontal and vertical knot counts. The number of knots should be counted in a full 10 cm; multiplying up from knots per cm is unsatisfactory. Since the weave of a carpet is rarely uniform the most accurate results are obtained by determining the knot density in two or more parts of the carpet. When counting knots in the horizontal (weft) direction it is important to remember that each knot passes over two warps.

• Material

- For oriental rugs as materials and jute the wool, a cotton, silk, flax, hemp serves in the diversified combinations. A wool receive from sheep, camel or goat hair. It has different advantage - short, rather rough or rather thin, long and lustrous, and it depends on district in which sheep get divorced, from parts of a body from which the wool is sheared, and from its manufacture which, since hackling and finishing spinning already occurs in the mechanical way. First of all the wool goes on carpet pile, - only carpets of nomads entirely consist of a wool, - and the natural colourful scale of a wool in its various shades from white up to yellow, from brown and grey up to black is frequently used. The cotton is a cheap, strong material; before it was

manufactured by nomads manually, now it is carried out at many factories and factories, absent-minded over all East. It use under a basis, and for strengthening a carpet and its protection from corrugation also under intermediate ducks. Silk - one of the most ancient noble materials - has strong shine and due to the subtlety makes possible the densest weaving.

- **Sheep Wool**



- **The sheep wool**

The sheep wool definitely is one of the first materials, which person has learned to apply to itself on advantage (benefit). It specifies even the historical name of Babylon: according to one of variants of interpretation, this word should mean literally "the country of a wool".

The sheep wool, the most widespread and most important spinning material for manufacturing tufted and knotting carpets. It is used as for creation of pile, and, partly, as a material of strings of a basis and wefts strings cloth bases of a carpet, mainly at weaving carpets by nomads and half-nomads. Quality of a wool determines, first of all, consumer qualities and wears resistance of a product. East carpets of a low rating are essentially made of a bad quality wool, whereas valuable, high-quality carpets - only from a wool of the best quality.

- **Cotton Fibre In Rugs**

- **Cotton**

This natural fibre is known from ancient times.

The cotton plays the second role on importance (after a wool) in the industry of wum carpets, but it is used not for reception of pile, and as a material cloth bases (strings of a basis and wefts strings). The cotton distinguished by stability of the form and high durability on a stretching has well recommended itself as a basis for deduction carpet knots. Sometimes it is intertwined also in carpet pile (as so-called mercerized cotton). Today the cotton is part some carpet piles usually in mercerized form.

The cotton is hygroscopic, therefore is necessary to support low humidity of air, damage (rotting) cloth bases differently is possible.

- **Mercerized cotton**

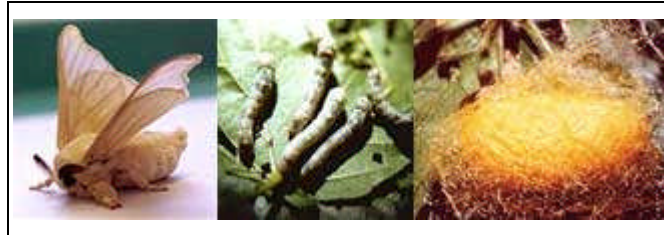
If to process a cotton energized yarn in a solution caustic atrium on a method developed in first half of 19 centuries by English chemist John Merserom, to turn out so-called mercerized cotton - a material distinguished by silky luster. Chemical processing improves simultaneously ability to colouring, approximately on 25 % raises and allowable stretching effort. Mercerized cotton is used for weaving carpets in Turkey (Kaizeria), in the Indian part of Kashmir and in Pakistan. It is called to give

to a product a kind of a silk rug. In trade such "silk imitations" " refer to as everywhere "deceptive" ("Blender").

And on Turkish markets mercerized cotton represents tourists under the following names: wood silk, vegetative silk, flush, silk-like a material, ipekli. Such names are called to veil a true origin of a material and not simply mislead, but also are completely erroneous in essence.

- **Silk in Rug Weaving**

Pure silk, wild silk



- Silk for a long time is considered one of the most valuable and esteemed natural products. Carpets of silk are often distinguished for their special elegance and expressed grace, they are characterized by specific silk luster and unsurpassed shine. The archaeological researches which have been carried out (spent) in China have allowed to confirm that silk productions were engaged in the fourth millennium B.C... China during centuries kept monopoly to silk until then while as the legend in 420 of our era so-called "silk princess" secretly says has not taken out this secret of the country in Hotan. Other legend speaks that wandering monks - transported eggs and germs of a silkworm in the hollow staffs.

Pure silk is formed at nymphosis of caterpillars of a silkworm (*Bombix mori*), rather ordinary-looking on a kind of a night moth. The so-called wild silk named also tussor-silk, is developed by an oak silkworm (*Sericaria mori*). But to manufacturing carpets of it (him) do not apply.

Almost the silk string not perceived to the naked eye, developed a caterpillar taking place in a head special iron at winding it circular movements of the cocoon, and may reach in length up to 4000 m.

As the first class silk it is possible to use only approximately from third up to half of cocoon. The rest, first of all, it is usual more friable external environment of a doll which name also silk tow, acts on the market as a silk - drill and a yarn from silk waste products.

Amaze elasticity and breaking strength of so gentle and at the same time extremely strong silk fibre: it is counted up; that under influence of a body weight it is torn at length only in 50 kilometres.

- **Real or artificial silk rug?**
- We don't mean to be alarmist, but we sometimes see "**silk rugs**" that are made of something other than genuine, natural silk. This is not a problem if you know that the silk rugs you are considering is made of artificial silk, but sometimes rug dealers neglect to pass on this information! The problem happens most often with just a few rug types sold in tourist markets in Turkey and India (and sometimes in Pakistan).
- **Real Silk**

- Real silk is produced as the cocoon covering of the silkworm, the pupal form of the Asian or mulberry silk moth, *bombyx mori*. The cocoon is spun by the silk moth caterpillar of a single silk fiber that can be up to several thousand ' in length. To harvest the silk, completed cocoons are boiled or heated to kill the silkworms, then laboriously unwound into single fibers which are plied together and spun into thread or silk yarn.
- Natural silk is a fibrous protein composed of a number of amino acids: glycine (44.5%), alanine (29.3%), serine (12.1%), valine (2.2%), tyrosine (5.2%), glutamic acid (1%), others less than 1% each. Chemically, natural silk is $C_{15}H_{23}O_6N_5$ (we give the formula in case you want to whip up a batch of your own). Silk is extremely high in tensile strength, exceeding that of nylon. It has been estimated that if a single silk fiber with the diameter of a pencil could be produced, the fiber could lift a 747 aircraft (who figures these things out, anyway?). Silk is used to make oriental rugs because dyed silk is a fiber with rich, saturated colors, and a distinctive, almost translucent luster.
- **Artificial Silk**
- Artificial silk is everything billed as silk that doesn't come from the silkworm cocoon. Most often this means mercerized cotton; sometimes it means a manufactured fiber like rayon or a blend of chemically altered and/or manufactured fibers. It's not that artificial silk is intrinsically evil; it's just that the whole point of using artificial silk in a rug is to save the cost of real silk. It is not nice when this cheaper, artificial silk rugs is misrepresented and sold for the price of a real silk carpets.
- **Mercerized cotton**
- A ripening cotton boll can contain as many as 5,000 separate cotton fibers, each fiber growing from a tiny seed and formed as a hollow cylindrical sheath of as many as thirty layers of almost pure cellulose. Cotton fiber is mercerized by being stretched under controlled tension at room temperature while being treated with a 21%-23% solution of caustic soda (NaOH). The effect is to swell the fiber and make its surface much more reflective, thus dramatically increasing its luster (and also its tensile strength). After the chemical treatment, cotton yarn is often singed to remove whatever small amount of fuzz remains on the surface of the fibers. Sometimes cotton is calendared by being passed between heated rollers. The effect is to increase the luster and sheen of the fiber still more. However it is treated, cotton remains cellulose: $C_6H_{10}O_5$.
- **Rayon**
- Like cotton, rayon is made of almost pure cellulose, but rather than being grown, rayon is produced by first dissolving cellulose (obtained from cotton or wood pulp) to produce a thick yellow liquid called viscose. The viscose is extruded through tiny holes into a chemical bath that produces long filaments which can be spun into thread and yarn. Viscous rayon was the first man-made fiber. In 1920, DuPont bought from the French the technology for making viscose rayon. DuPont first called the material "artificial silk", and formed a company (The DuPont Fibersilk Company) to manufacture it. Other artificial fibers would follow quickly: acetate (also derived from cellulose) in 1924, nylon, (commonly, adipic acid reacted with hexamethylene diamine) in 1939, acrylic (from acrylonitrile, a petrochemical) in 1950, polyester in 1953, and triacetate in 1954.

- **How to Identify A Real Silk Rugs?**

- With all these artificial fibers around, how can you identify a rug woven with natural silk?

First of all, pay attention to whatever clues the dealer--or the rug--gives you. For instance, we have seen many Kayseri artificial silk rugs (and some Hereke silk rugs), both Turkish types. In Turkey, a real silk Kayseri is an ipek Kayseri: ipek is "silk" in Turkish. An artificial silk Kayseri is a floss Kayseri (a yun Kayseri has a wool pile). The carpet dealer might be accurately describing the piece to you as a floss rug, but by not explaining the difference between floss and ipek, he lets you jump to the intended assumption, and you unwittingly buy an artificial silk rug.

Indian silk carpets dealers are seldom as delicately circumspect as some of their Turkish counterparts. Artificial silk rugs in India are often blatantly sold as real silk, complete with certificates of authenticity and written guarantees. For many years Kashmir in northern India has been the major source for both real and artificial silk oriental rugs. Look carefully at the "silk rug": it should be tightly woven (with more than 200 knots per sq. in., and often with 500 or more knots), intricately detailed, closely clipped, and it should have real silk fringe that is clearly an extension of the rug's structure, not sewn on or sewn into the ends of the rug. Artificial silk rugs often have only medium weaves (less than 250 knots per sq. in., and sometimes less than 150 knots per in.), and often have cotton fringe. Good quality real silk rugs always have real silk fringe. In Pakistan we often see rugs called jaldars. These wool pile rugs often have "silk touch," meaning that there is artificial silk inlay in the pile (often outlining part of the design). This artificial silk is almost invariably ivory in color, and is made of mercerized cotton.

- **Tests for Silk rugs**

- OK, you're looking at a nicely woven, nicely patterned, closely clipped "silk" rug with what appears to be real silk fringe. You still might be looking at a artificial silk rug. Here are three field tests that might help you distinguish real from fake.
- **Rub it!** It is sometimes claimed that you can tell real silk from artificial silk by vigorously rubbing the pile with your open palm. The real silk rug feels warm, the artificial silk rug stays cool to the touch. We sometimes think we have felt this difference. Of course, it helps to have a real silk rug with you so that you can compare a known quantity!
- **Burn it!** This test is at least good theatre, and actually can be helpful. Clip off a small piece of the fringe, or pull a knot out of the rug from the back (why should the owner object?). Burn it. Look at the ash and smell the smoke. If the material was cellulose (rayon), the ash should be soft and chalky, and the smell should be like burning paper (most paper is made of cellulose). If the sample is real silk, the burning sample should ball to a black, crispy ash, and the smell should be of burning hair (you're burning protein, the same stuff your hair is made of). You've got to be a little careful with this test to avoid smelling the smoke from the match (and to avoid igniting yourself or the rug dealer's shop).
- **Dissolve it!** The most accurate test is one that chemically differentiates protein from cellulose or petrochemicals. One such test: at room temperature, mix a solution of 16 g copper sulphate (CuSO₄) in 150 cc of water. Add 8-10 g glycerine, then caustic soda (sodium hydroxide: NaOH) until a clear solution is obtained. This solution will dissolve a small sample of natural silk, but will leave cotton, rayon, and nylon unchanged.

Dyes used in Oriental rugs

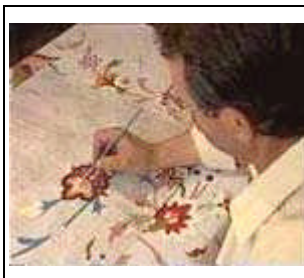


- In the middle of XIX century chemical rug dyes are spread over all of the oriental countries. The law issued by Persian government that prohibited its import, including the order to stop work on all rugs manufactures that used them, had no effect on the situation. Cruel punishment that was in cutting off right hand of any dyer who was guilty of breaking that law was soon forgotten. After the World War I chemical dyers were used all over the world. Aniline dyes, found by English chemist Perkin (1856), surely, had a fatal effect on the colour perception of the Oriental rugs, but since that times lots of high quality synthetically dyes were discovered, and nowadays they are used everywhere. However, other qualities of the plants' pigments cannot be substituted. Although cloth panted with those pigments loose the intensity of colour, get old, but thus their colours become milder.

Besides that, they are able to give colours so deep and mild that even at high intensity never looks irritating. The recepies of dying were considered to be a secret of workshops or clans, being transmitted further on by heritage, as well as all of secrets of a craft. The same is with everything we said about the material. While dying a lot depended on the climate and the type of soil on which the plants grew. Quality of the wool also influenced the tone of a colour of a dye - using the same production process the varying quality often gives varying tones of colours. The material ment for dying is first washed in the hot water and degreased, sometimes using even soap, after which it is put in a bath for twelve hours. In the dying bath itself it lies for a very long period of time, after which it is dried in the sun. On manufacture plants every time is dyed a big enough portion of raw material is dyed while the nomads. who can dye only one small portion at a time, do not achieve every time the same colour tone of a dye, which is the reason why one can meet various tones of the same colour on a single carpet, as, for example, on the background picture, which is quite big solid surface.

- Nowadays for dying wool meant for carpet manufacturing they mostly use chrome dyes. Buying a handmade rug, no matter if the dyes are natural or synthetic, you can be sure that its value will increase as time goes. Even the rugs that have been made at the end of XIX century using anyline dyes are valued very high because of their age.
- There is a popular opinion that a rug that has been dyed using natural dyes are unconditionally better than a rug created using chrome dyes. This is a wrong idea. Chrome dyes quite often turn to last longer and be tougher than the natural dyes.

• Oriental Rug Patterns & Ornament



- The prevailing majority of oriental rugs belong to culture of an Islam. The ornament passes in a complete abstract composition where there is no place to emotions or pathos where each motive borrowed from a nature adapted to certain, beforehand given I build. Plants appear or extremely stylized, or heraldically grouped and only by way of exception give in to botanical definition. Separate motives appear closely plaited in a plane composition, and the pattern without

the rest fills in all surface, almost being never combined with quiet, without a figured surface. To represent human or animal essences the Muslim doctrine forbids. In the koran, the truth, on this account is not present the certain interdiction - its action begins only in Abassids age (750-1258), the Interdiction on the evident image of the person was observed, however, not absolutely punctually - in some areas and in the separate periods there are realistic images of people, for example, on the Persian Rugs, and on the contrary, strictly stylized – on Caucasian Rugs.

- The significant place in ornamentals east carpets is given, but to a symbol. The general partitioning of a carpet, meanwhile is subordinated to it even as at each separate motive, be it geometrical, animal or vegetable, there is a symbolical substantiation, is exact as well as at colours. The work above a carpet and that is connected to the symbolical maintenance of religion and if to speak about mistakes meeting here and there in a carpet there are they not by a carelessness of the weaver, and on its humility - one Allah is not mistaken.

- **Sample**

Talking about nomad's rugs or Tribal Rugs there is no sample in this case. The motives are recreated from a bank of compositional schemes, sometimes from ready carpet knots, which the weaver keeps in mind. However, when a gorgeous carpet is being created on a manufacture plant, there always is a sample. The sketch, designed by a calligraphist and a miniaturist, is being transposed to a so-called "bullet" by a drawer, i.e. is transferred to a millimetre-ruled paper where every square stands for a knot. The "bullet" is made either in colours or in monochrome pointing numbers for separate colours of a scale selected. In case several weaver are working using the same "bullet" it can be sliced into strips, so that everyone could have a sample for his sector. In past times quite often instead of a "bullet" drawn on a paper there was a voice of a woman that was coordinating everybody's work.