Detailed Review of Paper and its Traditional and Industrial Variety (1)

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ABSTRACT

In today's world, one which has the most extensive application in various areas is the paper. Imagine a world outside of the paper, while it is not replaced by another is very difficult. Paper is not just a tool for writing, but rather is a material that has various applications, but for centuries was the most important and the main tool for writing. In this article, it was essayed to examine the root word research paper and a brief history of the foundation and since the beginning of its emergence as handmade traditional and traditional media types and methods of construction and finally, the paper making industry with materials, tools and industrial papers classified and so the comparison between traditional and industrial paper quality was assessed. Paper industry is one of the largest industries and its economy is one of the largest economies in the world. And deserves further investigation in this regard and in Iran, we can build more and more traditional paper (handmade) with global quality and excellent reach self-sufficiency and industrial.

INTRODUCTION

Definition of Paper: Based on what is defined in Dehkhoda dictionary, paper is a Persian word and it used to pulp sheets made of cotton and other writing (1).

The author of this article named Laufer knows this word originally like that and had written in his book entitled “….” that the words at the beginning was ku-chih, and gradually changed to kok-dz and later called kok-ci.

Paper in period of Ancient Persia was called also "breach or Nap". It is called inlitory language of the Arabs "Qertas" and vulgar language as"sheet or paper". Some Arabs believe that the paper is a foreign word that was entered in their language.

The pronunciations of words such kok-dz seems to confirm that paper is a word in Chinese and the neighboring cities of Samarkand and vast empire of Iran in ancient days and was the center of the Mongol civilization, and from mainland of China makes the connection between these two ethnics and as a result of China's technique of paper making comes to Iran and the word of paper is made of kok-dz.

But there is another definition that explains the paper as a thin sheet that made from various materials of vegetable pulp, cotton, flax, etc. are available with different colors and often used for writing. It is said that the origin of the word, should be Turkish (2). Whatever its origin, it is certain that the paper in Arabic and Persian language and culture defined as a paper (plural papers) (3).

In ancient Persian poetry, especially among the Ghazni poets that know no difference between Dal and Zal, and then later in prose and Paper (with dal Mohmaleh) is used as M. Sadi says: Imagine an injury that instead of paper half is a pencil and half paper

But the application indicates that it could not be attributed to paper; as well as poets of native language in Ghazni know no difference between Dal and Zal (4). But the application written by the authors of the paper in the Persian Safavid and Qajarv in Minor Asia and the Indian subcontinent is clear that Persian speakers in mentioned periods did not believe that it is attributed to paper.

Historically the emergence of paper:

About the origin of the paper, it is written that the first century BC, the Chinese get made the paper. In the middle of the eighth century AD (first century AD), the use of paper was spread almost all over the world. In 751 AD (133 AH. AH) the Arabs, who had attacked Samarkand, were overcome by Chinese. In this attack, a
number of Chinese were imprisoned by Arabs. At that time, the Arabs learned from the Chinese prisoners who had paper-making skills. Before the first half of the second century AD, the writers in the Muslim world did not know the paper, and are not familiar with the paper for writing, the Persians and Arabs had used the skin of animals such as buffalo and sheep (plural Lahfeh: Thin and whitesheets), Asyb (plural Asyb: wider wood and palm leaves), Aktaf (the sum of the shoulder: shoulder blades of camels or sheep), Idim (tanned leather), Aftab (plural Fatib: wood that founded on the camel's back), and vellum (tanned skin) have been used for writing (5).

From late in the first half of the second century AD first Khorasanis became familiar with paper so that according to historical texts in 134 (e. C) that some of Chinese prisoners who were aware of the art of paper making was brought to Marve and Marvians were familiar with making paper from flax and hemp fibers (6).

Soon afterwards, the paper industry that was spread by Arabs was "canvas". Iranian and Arab skilled practitioners initially used flax which is frequently grown in Khorasan. Gradually, it was replaced by the old cotton cloth and due to the increasing consumption of any plant fiber (fiber) for paper, it is made of cotton.

Apart from the above in paper-making, and other materials used in writing in the year 440, according to Abu Reyhan Biruni (AD) died in 1048 AD Indian people were used to write on the material: in the southern Indian cities, there is tall trees like coconut palm tree which ate the fruit of that tree that is named (Tarri) that Indian people are writing their own content onto the leaves. After threading it through the hole in the middle make it binds together.

But in the central and northern cities of India, people used the bark of the tree named "Tooz" that is said "Bahooj" to writing. The people of the city have oily skin and are polished to be smooth, hard and then it is written on them, scattered with consecutive serial numbers and after all was wrapped it in a piece of cloth, then placed it between the two tables that is the size of the pages and in their native language read this book Poti.

Masoudi, in the year of 345 (AH / 956 CE) had died, wrote about a material that wrote on it in India, it's called "Kazi", but it is not clear that this "Kazy" is the same as "Tarri" that AbouReihan Birouni or it is something else. (7)

Masoudi in his book “Meadows of Gold” says that: “the letter of a king of India to the Persian king “Khosrow Anushiravan” was on the paper which was called “Kazi”. This tree is in India and China, with beautiful color and the smell is wonderful. Its skin is thinner than paper, and the kings of China and India wrote their letters on it. ”

Egyptians Bamboo plants called "Bardi" that was special for the people and the Greeks called it "Papyrus", the paper that was named Qertas.

Abu Reyhan Biruni in his book "India" refers to the existence of papyrus and says: "Qertas or papyrus is made in Egypt from vegetable of “Bardi” that it would shave trees and caliphs and kings tried to write their entries on it. Because if someone wants to clean or change the written texts on Egyptian Qertas, it was not possible to because due to the effects that the manipulation had made on written text, obviously remains to be seen. "

If it is said that the paper has been completed by Muslims and it is a great service to the world civilization, perhaps it is really true, i.e. the transformation of the industry from the very beginning of the second century (AD. C) is done by them from China to Syria, Egypt, Morocco and Andalusia, Ayarn and Baghdad and taken to their the testimony of thousands of copies of Arabic manuscripts in the public libraries in the cities of the West and East today work have made great progress and perfection of the industry (8).

**Traditional handmade paper:**

1. Strings of different fibers (or use disposable cloths should be made of natural materials such as cotton, hemp, silk, etc., free of chemicals such as plastics, etc.) are prepared. A series of these strings are cut to the size about 22 cm and soak them in water for two or three days. Then separate them manually by slamming them in a mortar home perfectly.

2. Spills 5% of the strings with 95% of clean water in an electric blender then combine them for a few minutes under the blade of the machine to form slurry the heading pieces of cloth or fiber to be completely in water. During the operation, if the material forms as small pellets, they can be out of water and can beat them by scissors again and return it to the mixture. So the operation will continue until the slurry becomes a manually prepared.

3. The slurry was again refused by the coarse blade thoroughly mixed to obtain a solution of cloud-like. Pour 5% of the 95% of the solution with water in large mixer bowl. The amount of water depends on the thickness of the paper. Whatever we choose thicker the paper, the less water enters the container.

4. Frame and rolling papers are entered into the container until the particles become cloud-like floating on it. Then just wait until we pulled out of the mold frame and the excess water, then the paste is diminishing with a clean, dry cloth. When the moisture content of the dough reached to the minimum possible, it is removed from the screen and partially dried on glass or cotton cord that is approximately ten percent of the remaining moisture in the paper.

5. This leaves both felt into two pressed (pressure) puts.
(6) Glazed rice or diluted slurry of starch is prepared, and then put the dried paper in it comes to sizing up the glaze is completely inserted into the paper. The sizing of these is: rice starch, syrup, various herbs, gelatin, casein, animal glue, artificial, made of nickel and gold spirit named.  
(7) For the fillers (fillers means, the minerals within the pore space and the empty spaces filled with the cellulose fibers. The purpose of this material is to white-off the paper. In addition, the light does not pass through the surface to smoothen the paper does it take to print and write on it.

The ingredients are: Kaolin "hydrated aluminum silicate" gypsum "Calcium Sulfate" tale "Magnesium Silicate," Chalk "calcium carbonate", if we want to make colored paper, natural colors such as walnut bark, leaves, flowers, leaves, henna, tea, etc. are added to the slurry. This can be done in stages as sizing. Cap off the paper after drying is ready to use.

Traditional types of handmade paper:  
1) Paper Chinese Hanabnaig (Error/ khataei): This paper was brought to the prevalence in the first centuries AD, Islam found in Khorasan. ShahrKhanBaleg located in Beijing, China, in the path SultanaliMashhadiin "Way striae" has stated: there is no better paper than Khataei/error.  
2) Papyrus paper is a type of paper that was made of the Egyptian papyrus plant (a plant that of Sedges that from its dark fiber made the paper).  
3) Baghdadi paper: The paper is very famous and exquisite among the scribes. (SobhA'sha/476).  
4) Silk paper: is made of silk and is very thin and delicate. (MayellHeravi, words, 7)  
5) Hearted Parchment deer: skin of the deer, the last time we have achieved a kind of paper that is light and strong. A copy of the Qur'an in public library Kabul (Afghanistan) is writing on the paper. (MayellHeravi, words, 7)  
6) Parchment: the paper said that the skin of animals such as cattle, etc. We are sure that they have achieved more in China, and Samarkand. (Saaleby, facetiae 261)  
7) Paper Parsley: Khorasan papers are made in Barmakids period and is attributed to J. Barmakids (killed 187 BC). (Ibn al-Nadim, Fihrist, 36)  
8) Solomon papers, Talhy, Nouhi, Pharaoh, Taheri: are all Khorasaniand made of cotton.  
9) Samarkand paper: the kind of clear, thin paper, and in the tenth century AD, was known by calligraphers. (Aali Effendi, the Virtues of Hezwran, 24).  
10) Khonjiy paper: is a type of Iranian paper that was made inKhoona (Khoonj, one the cities of Zanjan). YaghootMosta’sammy speech suggests that most people are engaged in the paper industry and therefore in the seventh century (AD) is the named asKaghzkonan (Lexicon of countries, 2/407).  
11) Paper Damascus is a type of paper made from cotton in Damascus. This paper also exported to Eastern Europe and the Islamic World in the period of Muhammad Ali Beck, the word of Charta Damascine in European languages means paper Damascus, found the reputation of the paper in the countries of the Muslim world. (Islam and Arab civilization, 1/215)  
12) Papers ofDowlatabadi and Dowltshahy andAdshahy: are the varieties of Hindi paper and has been known among the scribes of Ages 9 to 11 (AH). (Aali Effendi, the virtues Hezwran, 11)  

According to News Agency (ISNA IBNA) Handmade Paper Industry began in India about four hundred years ago with the support of "Savavy Me Sick" ruler and governor of Rajasthan; there is still a high growth market and demand more.

The family of "paper" that inherited the rating industry celebration from their ancestors as pioneers of the handmade paper industry inSanganar in addition to keeping the traditional industry to contribute to its prosperity.

Countries such as the United States of America and France borrowed this product from customers, and frequent paper mills in India's exports to these countries are worth over five million rupees. This paper from recycled waste materials such as paper, cardboard, straw or other materials provided on most of the materials and why it is more economical to prepare the paper industry. Handmade paper (traditional), in addition to harmony and peace with nature, buyers can use more efficiently and without fear of loss or change in color of the document. However, the industrial paper produced in factories over the last two or three years. All seventy to seventy-five workshops on Indian SMEs are active in the production of traditional handmade paper. This workshop is an annual income of more than fifty crore for prosperity, growth and increasing demand in this sector, the proceeds of which will be added every day.

Paper industry:  
1) Paper is a plant made, a thin sheet manufactured of dough plant materials such as bark and wood chips, cotton fabric. The new machines produce paper from plant fibers, can produce speeds in excess of eight meters per minute papers that its width is greater than 800 meters. Another technology that has yet occurred to the Chinese quickly and produce the same amount of paper. However, the paper is manufactured of all kinds of
plant fibers. The fibers obtained from wood are currently the most common material for conversion into pulp and paper.

2) Pulp washing: washing with an alkali solution occurs at 45 to 50 °C for one to two hours. The operation to separate the pulp Lygityn and color reduction is performed.

3) Chemicals applications (paint removal) - in two stages: (1) chlorination is performed, where PH = 2 to a temperature of 25 to 45 °C for one hour, until Lygityn has been oxidized and Selooneris not affected.

4) The paper pulp drying - cleaner and tours that have perforated on paper pulp by 2 to 3 mm pass them to lose the bulk of their water. Press passes are stronger then the remaining water is removed.

5) Presses, cutting down and packing - by passing the dough through the rollers to dry for it to be removed by cutting it into sheets of paper in the size of the order and the market demand for cutting up and packing up. (daneshnameh. Rushed.ir)

The paper industry is young in Iran and cannot yet provide all domestic needs. Pars Paper Factory in Haft Tapeh (province) of sugarcane pulp, produced printing and writing paper. Other paper mills in the forests of northern Iran are generated timber, pulp of sugar cane, and waste paper, paper, printing and writing paper. It also plans to recycle paper consumption and waste materials are being investigated. Consumption of paper and wrote numerous. Most of the names that manufacturers put on their products, business. In general, the paper can be divided into two main categories based on their application to:

Printed papers do not use as wall paper, tissue paper, industrial paper plant are used in various products.

Use of printed papers is divided into three main categories: 1 paper 2 paper for printing newspapers and magazine covers of books and magazines, vol 3 papers.

Low-grade paper such as paper straw, to drink plenty of transient and papers quality, glossy printing such books are valuable and lasting. (Foundations of book publishing, Abdul Azarang, pp 141, 142).

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