

THE ART OF DYEING IN THE CONTEXT OF CRAFTS, DESIGN AND AESTHETICS

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ABSTRACT:

Colors have long been one of the important elements which constitute our daily life, and dyeing is one of the key players in the discourses of colors. Recorded 5000 or 6000 years ago, the earliest application of dyeing in Chinese history shows that the substance ochre was applied on human faces to frighten beasts, and to distinguish from other tribes. Later, various dyes were created and applied in daily life.

This research focuses on the art of dyeing and its evolving process in China through extensive search and research on old documents. And the Conclusions of this research are :(**1**). **Dyeing is representation of contemporary culture:** And dyeing craft reflects social culture of the time. Take Wei-Jin, Southern and Northern Dynasties as an example, there were constant wars and people advocated Philosophy of Lao Zi and Zhuang Zi, and thus sought for a bland life, so they

expressed such feelings on dyeing craft. All colors dyed during Wei-Jin, Southern and Northern Dynasties were mainly elegant and simple. We can deduce social trends from dyeing colors of that time, which was representation of culture of the time. **(2). Dyeing is some spiritual symbol:** From substance ocher discovered in New Stone Age, through Zhou Dynasty to Qing Dynasty, we can see that colors were constantly developed and researched. Generally, warm color series prevailed in the Spring-Autumn dynasty, while light color series derived from pursuit of Philosophy of Lao Zi and Zhuang Zi in Wei-Jin dynasty. As late as integration of five nationalities and acceptance of exotic culture in Sui and Tang Dynasties, more colors were developed. We can observe that colors had existed everywhere in our society before emergence of dynasties. While as creator of these colors, dyeing had always played the important role. It can be seen that dyeing reflected people's hopes in early days. Without dyeing technique, there would be no colors. And without colors, there would be no such colors reflecting people's hopes due to social phenomenon. This shows that, for our early ancestors, dyeing craft is some spiritual belief. They expect social stability from the colors they dyed. **(3). Environmental friendly craft art:** The applied dyes are made mostly from plants, such as blue grass, madder and dioscorea, and some from minerals. Some plants are even medicines listed in *Compendium of Materia Medica* (本草綱目). Traditional dyeing are the most environmental friendly craft art, and it best practices and interprets the Nature Philosophy. **(4). Resource of design education:** Traditional dyeing currently is an art which only belongs to limited artists. However, it could be an excellent material for design education. Young students have indulged themselves in the internet and online games, and do not know a thing about traditional crafts, let alone the creating processes and details. However, they may experience traditional crafts through the art of dyeing, and furthermore carry the seeds of traditional crafts.

Key word: Dyeing, Nature, Craft

1. WHAT IS CRAFT

In original human society, people were self sufficient, and made and created all utility tools by hand for their life demands, for which utility functions were most important. Thus came what we call craft. Craft came up in the world as humans came into existence, and emerges wherever there are humans. Craft is always regarded as window of contemporary civilization and maturity of

workmanship as better records of cultural involvement of that time instead of literature. The craft was once mentioned in the craft culture's book by famous Japanese folk-art theoretical esthetician Yanagi Soetsu, who said that the so-called craft generally refers to all kinds of arts in early days. After William Morris, craft was gradually distinguished from art. According to exposition by Yanagi Soetsu, the craft generally refers to practical arts of life, which differs with the art. Thus we can deduce that craft emerged after human beings came up in the world, which existed for practical functions at first, then became artificial products integrated with aesthetic sense. For instance, garments have evolved from its practical nature as mentioned by Yanagi Soetsu to its present esthetic existence integrated with colors.

Take early human beings as an example. Their early wearing apparels were originally skin of animals hunted from the Nature, or branches and leaves from trees, which were only used to keep warm. The products were made only for some living demand, but rendered with aesthetic conceptions as time elapsed. Then, integrated with aesthetic feelings, they became beautiful garments with utility functions. As early as Zhou Dynasty, social status were distinguished in colors of garments. Garment dyeing craft represents intelligence of our ancestors, which pays attention to functionality. Craft products were designed with some practical faith in early days, which were by no means crafts only for delight at the expense of time and energy. Thus we know that craft products were not only a product, but also spirit of the designer. All design focusing on utility functions also for common people's design.

2. ORIGIN OF DYEING

Since craft exists for practical nature, craft products were covered with flowery colors due to discovery of dyeing agent. Craft products have everything with people's basic necessities of life. The craft products are provided with luxury colors, well then, how did colors get on in the world?

This research is to view dyeing art from an angle of craft design aesthetics. Colors are found everywhere in our daily life, which can never exist independently escaping from life though not necessary for people's livelihood. Origin of colors dates back to five or six thousand years ago. According to literature records, our ancestors discovered substance ocher from the mine, which was found to generate difference colors in shade. So they applied the ground powder as dyeing agents on face as marks of different tribes.

According to literature records, our early ancestors applied dyeing agents to their faces, and also painted various mineral powder or plant juice on architecture, stone wall or vessels etc. For example, stone mortars and pestles were found to be used in the New Stone Age, which had red mineral paint. Thus it is deduced that our ancestors already knew to use natural things in their daily life as early as the New Stone Age. With vicissitude of social structure of that time, our ancestors used more and more mineral dyeing agents. This shows that colors were discovered by our ancestors in early days and widely used in daily life. It can be seen that practical age of craft turned to tasting age of art in early days. Our ancestors didn't make products for demands, but used colors to add to the bland life and in garments. The dyeing craft was exported and highly praised overseas as the Chinese art.

2-1 Zhou Dynasty (About 11th century BC to B.C. 771)

There were special departments to manage dyeing agents, dyeing, mineral dyeing agents etc. In Zhou Dynasty, which shows that dyeing craft started from the New Stone Age, and was passed on to Xia, Shang, Zhou Dynasties? With social development, dyeing had become a technique. According to literature records, the so-called dyeing was some art to dye cotton, gunny cloth, silk etc. in dye liquor. It was causally found that juice extract from plants, mineral powders could be used for dyeing at first. Later on, dyeing craft had become a prevailing handicraft industry in those days. It is obvious that dyeing craft was so popular among civilians in famous cities and towns at that time.

According to literature records, there were special dyeing jobs mainly responsible for management of cotton dyeing in Zhou Dynasty. There are detailed records on the 8 classified organs special for management of dyeing in Zhou Dynasty, as in (Table 1). From these classified responsibilities of in Zhou Dynasty, there are special persons to manage collection of dyeing materials, marking of colors, production of plant dyeing agents and management and dyeing process of mineral dyeing agents, which shows that there are abundant demands for dyed products. Also, producing process of dyeing craft consumes a lot of labor and materials recourses, which can't be operated separately but by team cooperation.

Table1 Departments managing dyeing in Zhou Dynasty

| | |
|------------------------|---|
| Feather human | Responsible for collection of features and marking colors |
| Manage leather | Manage collection and production of leather |
| Manage kudzur | Collect arrowroot fabric |
| Manage dyeing plant | Manage collection and production of plant dyeing agents |
| Needlework | Manage women's spinning and needlework |
| Manage silk | Manage collection and production of cocoon fiber silk |
| Dyeing human | Responsible for refining and dyeing silk |
| Manage substance human | Manage mineral dyeing agents |

2-2 The Spring- Autumn Dynasty (B.C.770 to B.C.221)

Till the Spring-Autumn dynasty, dyeing developed so fast. During the Spring-Autumn dynasty, it is more common to crop indigo plants. According to literature records, in the Spring-Autumn dynasty, dyeing developed locally as it was in Zhou Dynasty. In terms of colors produced, there were no complete records on colors dyed over a history of thousands of years, which can be only gradually deduced from literature records. From silk textile in the middle of the Warring-States period, there were dark brown red, yellow, red yellow, red, and brown silk luster, yellow silk luster, amethyst silk luster etc. in the Spring-Autumn dynasty as induced in (Table 2). During the Spring-Autumn dynasty, dyeing agents for silk were mainly plants from the Great Nature. While it can be deduced that in dyeing craft during the Spring-Autumn dynasty, there were more dyeing agents of warm color series.

Table2 Unearthed dyeing colors during the S Spring-Autumn dynasty

| Period | Unearthed colors |
|---------------------------|---|
| The Spring-Autumn Dynasty | dark red, yellow, red, brown, amethyst, dark brown, light brown |

2-3 Han Dynasty (B.C.202 to A.D.8)

Based on achievements in the Spring-Autumn dynasty, dyeing technique of Han Dynasty followed enhanced comparatively. According to records, there were official dyeing departments in Han Dynasty. And according to civilian legend, there are servants could spin and dye independently. This shows that dyeing and spinning business was operated both officially and privately in Han Dynasty. While till Han Dynasty, what influenced did the so widely operated dyeing technique both officially and privately bring to the society?

According to records, there were various dyeing skills in dyeing craft in Han Dynasty. People once unearthed two pieces of blue and white print cloth and golden silver printed cloth of Han Dynasty. The so-called golden and silver of that time were not real, but colors dyed with mineral dyeing agents. This technique was a combination of stamp printing and colored drawing technique. This also explains that our ancestors had successfully mastered color match of dyeing agents and topping printing technique as early as over 2100 years ago. While Han Dynasty is the earliest dynasty where .Colorful topping on physical goods was used, which shows that dyeing and printing became more consummate in Han Dynasty.

The same as Zhou Dynasty, there were also special organs to manage dyeing in Han Dynasty. Colors dyed on textures in Han Dynasty were green ,red, bright red, light red, red yellow, amethyst etc. as in the following (Table 3), where as constantly required by social demands for dyeing agents, people who made a living by crop dyeing plants emerged in Han Dynasty. Who processed dyeing plants of thousands of mu was as rich as a leud in Han Dynasty. This shows how high demands for dyeing agents were at that time. According to records, someone once passed a town in Han Dynasty, and saw all people here cropped dyeing plants. It is obvious that dying plants were more valuable than rice corn. And social demands for dyeing plants being so high, colors dyed by dyeing and printing craft of Han Dynasty began to differ in shades, and dyeing and printing craft of that time became mature in this way.

Table3 Unearthed colors dyed in Han Dynasty

| Dynasty | Dyed colors |
|-------------|---|
| Han Dynasty | Green ,red, bright red, light red, red yellow, amethyst |

2-4 Wei-Jin, Southern and Northern Dynasties (220 to 589)

People in Wei-Jin, Southern and Northern Dynasties followed Philosophy of Lao Zi and Zhuang Zi, and were particular about freedom and broad mind during life. There were special organs managing dyeing and spinning production in the Southern Dynasty. According to literature records, there were various colors such as cyan, white, yellow, green and amethyst etc. Also there are special organs managing dyeing production in the Northern Dynasty. From unearthed relics, we see bright red, pink, yellow, light yellow, amethyst, ultramarine, cerulean, light blue, phyllo-green, white etc., as in (Table 4). In terms of colors dyed by dyeing craft of Wei-Jin, Southern and Northern Dynasties, simple and elegant colors prevailed, which might be

presumably related to the society. While among wars and disputed in Wei-Jin, Southern and Northern Dynasty, people hoped to be free in life, so their desire for a bland life was represented in colors by the dyeing craft. That's why most colors in Wei-Jin, Southern and Northern Dynasties were light.

Table4 Unearthed colors dyed in Wei-Jin, Southern and Northern Dynasties

| Dynasty | Dyed colors |
|------------------|--|
| Southern Dynasty | Cyan, white, yellow, green ,amethyst |
| Northern Dynasty | Bright red, pink, yellow, light yellow, amethyst, ultramarine, cerulean, light blue, phyllo-green, white |

2-5 Sui and Tang Dynasties (581 to 907)

Sui and Tang Dynasties was a period integrating five nationalities. Would this bring different style and features to dyeing of Sui and Tang Dynasties? There were special organs to manage dyeing production officially in Sui Dynasty. In Sui Dynasty, people carved patterns onto woodblock, then clipped cloth between carved woodblocks to dye it, which was called clipping dyeing. As for textile of Sui Dynasty unearthed, there were blue one printed with small flowers, and bright red, amethyst and jasper ones. While according to records of Tang Dynasty, there were cyan, red, yellow, white and amethyst. It is obvious that dyeing of Tang Dynasty was quite elaborate and complicated.

According to records of Tang Dynasty, as for annual production of dyeing textiles, there were 7,400,000 pieces of silk, over tons of 1,850,000, and 16,050,000 pieces of cloth. It is obvious how large the production was. And colors of textiles in Tang Dynasty unearthed were so rich. Take red as an example. There were silver red, light red, maroon etc. And take yellow as an example, there were yellow, bright yellow, golden yellow, apricot, yellowish brown etc. And for blue, there were cerulean, ultramarine. While for green, there were light green, jasper, phyllo-green, as well as black and white, amethyst etc. While there were various kinds of printing and dyeing methods in Tang Dynasty as clipping dyeing, batik, bundle dyeing etc., where clipping dyeing, batik and bundle dyeing were called as the 3 dyeing and printing methods of Tang Dynasty.

Dyeing and printing reached the height of power and splendor in Sui and Tang Dynasties because various new dyeing agents were imported into China, and planted and applied here during Wei-Jin, Southern and Northern Dynasties. In terms of dyeing technique, various kinds of dyeing

agents resulted in innovation and improvement of new printing technique, which put clipping dyeing, batik and bundle dyeing of Tang Dynasty to the height, boasting of the 3 dyeing and printing methods, and somehow allowed Wei-jin and Sui and Tang Dynasties developed and reached the height of power and splendor on the turning point. There were at least over 20 kinds of colors dyed in Sui and Tang Dynasties, as set forth in (Table 5).

Table 5 Unearthed colors dyed in Sui and Tang Dynasties

| Period | Dyed colors |
|------------------------|--|
| Sui and Tang Dynasties | Azur, bright red, purple amethyst, jasper, cyan, deep red, yellow, white, amethyst, silver red, light red, maroon, yellow, bright yellow, golden yellow, apricot, yellowish brown, cerulean, ultramarine, light green, jasper, phyllo-green, black and white, amethyst |

After Han Dynasty, silk printing and dyeing developed very fast. Dyeing craft technique fell into handcraft and stenciling. The former indicates drawing batik, while the latter indicates to paint with stamp or gravure. Dyeing craft has a long history as one of Chinese features. Thus we can see that Chinese dyeing craft was most developed during Sui and Tang Dynasties. And colors were more flamboyant due to integration of five nationalities. And the 3 dyeing and printing methods of Tang Dynasty were most representative dyeing craft, which began to extend out during Sui and Tang Dynasties. Export of craft products not only showed the features of our inward culture, but also absorbed foreign features, accelerating height of dyeing and printing technique of that time.

2-6 Song, Yuan and Ming Dynasties (960 to 1644)

Based on Tang Dynasty, people in Song Dynasty also produce printing and dyeing products. And due to flourishing of engraving printing technique, printing and dyeing technique prevailed, too. According to records, there were also special dyeing organs in Yuan Dynasty. While for dyeing and spinning craft, there was even a color office to manage colors in Ming Dynasty. There were over 20 kinds of color spectrums and dyeing methods in Ming Dynasty according to records, which shows that people had great achievements in selection of dyeing materials and mastering dyeing techniques in those days.

Work division in dyeing and spinning of Ming Dynasty was quite concrete, and all dye houses had their own responsibilities. For instance, the Blue House would only dye azur, light cyan, bluish white. Red House would dye peach red, bright red. Miscellaneous House would dye yellow, green,

black, amethyst, bronze, ink, brown etc. So dyeing and spinning craft of Ming Dynasty developed in local work divisions. It can be seen that dyeing differs with local features.

In Ming Dynasty, dyeing agents had rich resources and dyeing fastness was much better than mineral paint. Therefore, in textile dyeing and printing craft, old mineral paint was gradually replaced. And in technique, increase in textile production resulted in utilization of drugs to take off dyeing colors. Besides the natural colors, dyeing materials also had calm, soft and stable characters of plants. And many dyeing plants also had medicinal or evil-avoiding effects, rendering special charms to colors dyed from plants. For example, blue dyeing plants had effects of sterilization, disintoxication, haemostasia and detumescence. While tarragon to dye yellow color was the churinga to gain blessings and avoid evils among civilians. Other dyeing plants such as safflower, amethyst and onion etc. were also common herb among civilians. These plants acting as both herb and dyeing materials would render special curative effects such as sterilization, anti-dermatitis, avoiding snakes and insects and refreshment etc. to dyeing agents. Also because raw materials came from the land, craftsmen cared nothing for tasting dyeing liquor by themselves. From the above we can see that dyeing agents used in dyeing craft had developed various effects in early society, and dyeing and printing craft was a natural craft technique before invention of chemical dyeing agents.

Table6 Unearthed colors dyed in Song, Yuan and Ming Dynasties

| Period | Dyed colors |
|-----------------------------|--|
| Song, Yuan and Ming Dynasty | Azur, light cyan, bluish white, peach red, bright red, yellow, green, black, amethyst, bronze, ink, ivory, brown |

2-7 Qing Dynasty (1644 to 1840)

In Qing Dynasty, colors were used as official status differed. For instance, the highest status would use bright red, blue cyan, bright yellow, glossy dark green, golden yellow, deep blue, gravel green, beige, gravel blue, cerulean etc. While official colors were bluish white, brown, deep cyan, bright yellow, jasper, golden yellow, cardinal etc.

Dyeing and spinning methods of Qing Dynasty differed in all places, while printing and dyeing methods of Qing Dynasty were much diverse, with boosting development in dyeing agents, as induced in (Table 7). Dyeing materials varied in nature and were as many as hundreds of kinds, which were exported in large scale other than satisfying domestic demands. However, after the

Opium War, artificial printing and dyeing was gradually replaced by machine work, causing the printing and dyeing technique gradually declined. Thus we can see that dyeing and printing craft became mature when dyeing technique involved till Qing Dynasty. All towns are acknowledged for their special colors, which remained the same was that dyeing craft still cost a lot of labor and materials. Also under western influence, dyeing and printing craft mainly by handcraft was replaced by chemical dyeing agents and machines after the Opium War, and gradually disappeared, which; to the contrary, convenience of machines and chemical dyeing agents brought us environmental pollution and harmful chemical dyeing agents to human bodies.

Table7 unearthed colors dyed in Qing Dynasty

| Period | Dyed colors |
|--------------|---|
| Qing Dynasty | bright red, blue cyan, bright yellow, glossy dark green, golden yellow, deep blue, gravel green, beige, gravel blue, cerulean, bluish white, brown, deep cyan, bright yellow, jasper, golden yellow, cardinal |

3. Conclusion

3-1. Dyeing is representation of contemporary culture

With practicality as premises, from making to production, dyeing craft was all by manpower, which put out unique finished products. Dyeing craft is a technique combining practicality and aesthetic feelings, which cost much labor from planting dyeing plants, collecting dyeing agent, mixing due liquor etc. During the process of dyeing craft, it is possible to fall short of success for a slight inattention to processing of dyeing agent or steeping time even if we use the same craftsmen, materials and time. For example, there may be extraneous matter or bud in dyed cloth, colors not dense enough etc. This shows that dyeing craft is an exquisite craft that needs efforts of all craftsmen and may not be treated causally. And dyeing craft reflects social culture of the time. Take Wei-Jin, Southern and Northern Dynasties as an example, there were constant wars and people advocated Philosophy of Lao Zi and Zhuang Zi, and thus sought for a bland life, so they expressed such feelings on dyeing craft. All colors dyed during Wei-Jin, Southern and Northern Dynasties were mainly elegant and simple. We can deduce social trends from dyeing colors of that time, which was representation of culture of the time.

3-2. Dyeing is some spiritual symbol

From substance ocher discovered in New Stone Age, through Zhou Dynasty to Qing Dynasty, we can see that colors were constantly developed and researched. Generally, warm color series prevailed in the Spring-Autumn dynasty, while light color series derived from pursuit of Philosophy of Lao Zi and Zhuang Zi in Wei-Jin dynasty. As late as integration of five nationalities and acceptance of exotic culture in Sui and Tang Dynasties, more colors were developed. We can observe that colors had existed everywhere in our society before emergence of dynasties. While as creator of these colors, dyeing had always played the important role. It can be seen that dyeing reflected people's hopes in early days. Without dyeing technique, there would be no colors. And without colors, there would be no such colors reflecting people's hopes due to social phenomenon. This shows that, for our early ancestors, dyeing craft is some spiritual belief. They expect social stability from the colors they dyed.

3-3. Environmental friendly craft art

Dyeing agent used in dyeing were mainly plants grown in the nature, while some were mineral materials. All dyeing process applied plants by manpower. Dyeing materials such as indigo plant, madder, dioscorea matsudae etc. all grew in the nature; and some were even drugs listed in Compendium of Materia Medica. The mugwort, sapanwood, safflower, amethyst, onion etc. that grow all over hills and wild fields were important dyeing agents at all times and in all over the world. Also due to savageness of dyeing agents, dyeing and printing craftsman would taste the dye liquor for himself to check whether it is in its optima. It is in its optima if tastes alkalic and appreciably acrid; while if it tastes light, it needs more baking powder in the primary dye liquor to make beautiful colors. Since purely natural, dyeing agents are harmless to human body, and dyeing and printing could co-exist with the nature. After the above analysis, we can deduce that dyeing and printing craft is a most safe production technique as an optimal interpretation of the philosophy to take from nature and apply in nature.

3-4. Resource of design education:

From context we know that dyeing craft needs lots of patience. It takes a long time to finish a piece of printed cloth. However after the Opium War, for the sake of convenience, machines

replaced manpower, causing decline of traditional dyeing technique, which becomes a creative art for a few artists. But dyeing is in fact a best teaching material for design education. Nowadays students just know net surf and on-line games, but have no idea on creative process of craft art. Dyeing art renders them an experience in traditional art, and the handicraft process of dyeing and printing cultivates their patience, and makes them understand that it takes such a long time and so much attention to produce a craft product. And only a small neglect will ruin all preparations made before. Education in dyeing has the students experience the process of creative art, and get into a good habit, thus passing on this art.

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