

PROBLEMS REGARDING
THE RE-MOUNTING AND RESTORATION
OF CHINESE HANGING SCROLLS –
Local Traditions *versus* Globalisation

Our times highlight the need for determining which values concerning heritage protection would be appropriate for different cultures. International documents of great importance, like the Nara Document of Authenticity (1994),¹⁾ UNESCO Universal Declaration on Cultural Diversity (2001)²⁾ and the Convention for the Safeguarding of the Intangible Cultural Heritage (2003),³⁾ all drew attention to the importance of maintaining the local traditions and local attitude to the issues of safeguarding and conservation, including cultural differences in the perception of authenticity. The end of the twentieth century saw an increase in understanding of the problems related to the protection of the cultural wealth of humanity, as well as a general appreciation of the importance of the role of world heritage conservation, in its immense complexity. However, on the other hand the tendencies of globalisation within the area of heritage protection could be observed in terms of the unification of techniques, materials and aesthetics. The problems connected with the re-mounting and restoration of Chinese hanging scrolls are a perfect example, in which local tradition clashes with global standards of heritage safeguarding.⁴⁾

¹⁾ Nara Document (1994).

²⁾ UNESCO Declaration (2001).

³⁾ Convention (2003).

⁴⁾ Liszewska (2011: 110).

The craft of mounting paintings on silk and paper has a long history. A form of scroll probably developed at the same time and independently in China and India. Probably the oldest representation of a hand scroll was carved on a stone gate in the 2nd century in Sanchi in India⁵⁾. *Pata*, Indian banner painting, was widely used and adapted in Asia. In China there is evidence of mountings in “soul-calling banners” from the 3rd century BC, excavated from a tomb in the state of Chu in Changsha.⁶⁾ Both forms are considered a prototype for a form of vertical hanging scroll. Paul Wills notes the first description of scroll mounting in the Chinese treatise *Qimin Yaoshu*, which was written by Jia Sixie in the 5th century AD.⁷⁾ In the treatise *Lidai Minghua Ji*, dated 847 AD, Zhang Yanyuan discusses the backing and mounting of hanging scrolls: “...Mountings prior to the Qin dynasty (265–420) are not very good, and backings only started with Fan Ye (398–445) of the Song (420–479)...”.⁸⁾ In the beginning the paintings and the specimens of calligraphy on silk or paper were lined and mounted just for reinforcement and the scrolls were not used to decorate interiors.⁹⁾ When the owner wanted to view the scroll he unrolled it onto a low table. In the early Tang dynasty, the mounting of paintings and calligraphy was still considered to be artistic activity. For example, the famous calligrapher Chu Suiliang also mounted some paintings himself.¹⁰⁾ Van Gulik confirms that in China this craft was not technically skilled before the period of Tang dynasty (618–907), when the aesthetic form and technical structure of the hanging scroll had been eventually determined in details.¹¹⁾ But Liu Fang-ju claims that it only truly evolved during the Northern Song period (960–1127).¹²⁾

Both the proportions and the construction of the hanging scroll are strictly defined, representing basic formats which differ in style and colour: single – (*yi se biao*), dual – (*er se biao*), tri-colour (*san se biao*) and Song dynasty style (*xuan he Huang*)¹³⁾. However, relative freedom is allowed in the selection of silk design for mounting, as long as the style and colour are in harmony with

⁵⁾ Wills (1985:9).

⁶⁾ An-chih (1986: 50–51).

⁷⁾ Wills (1987:36).

⁸⁾ An-lan (1983: 40).

⁹⁾ Gulik (1958: 135).

¹⁰⁾ Fang-ju (2008a: 25).

¹¹⁾ Gulik (1958: 139).

¹²⁾ Fang-ju (2008a: 26).

¹³⁾ Lee, Gu, Hou (2003: 465).

the painting¹⁴). The form of a Chinese scroll is quite fragile and perishable. The structure consists of several layers: the backing of the painting, the margins and lining papers. Both the materials and the technique applied can be defective and eventually lead to the destruction of the scroll.¹⁵ In the traditional techniques of scroll mounting only natural materials are used – paper, silk and mostly starch paste as an adhesive. It is quite obvious that all these materials undergo a natural ageing process. The basic reasons for the scrolls deterioration (internal and the external factors) include: deterioration of the materials, changes caused by inappropriate technology, damages through wear and tear as well as unprofessional conservation and degradation caused by the careless handling and storage. The deterioration is accelerated by certain factors – light, changing humidity and temperature as well as air pollution. Gradual changes on the molecular level eventually lower the mechanical strength and optical properties of the materials.¹⁶

The usage of the scroll, determined by its form and function, is the important factor of its deterioration. Far Eastern scrolls are of a mobile construction and their function implies movement. Old scrolls are very prone to mechanical stress and changes in humidity. Typical mechanical damages can be defined as either reversible or irreversible. While the object is in use, stress occurs inside the structure. When the scroll is rolled the interior part is more stressed. When unrolled, the forces are quite opposite. Very slowly, the planar distortions and horizontal deformations occur (Ill.1). At first they are reversible. If the scroll is tightly rolled or weighted, characteristic vertical creases appear. Some kinds of damage are typical for hanging scrolls. When hung, they deform in vertical directions as well. At first, these changes are not significant and also are reversible. However, when the scroll has been hanging for a long time more distortions appear; the deformations become more serious and the whole structure breaks.

The Chinese have always made efforts to preserve and to take care of the scrolls. Their conservation treatment usually included dismounting and replacing with new mounting. Some scrolls have been remounted several times in their history during the sequence of re-mountings. This craft is connected with probably the oldest paper conservation practice in the world. Some Chinese treatises include information about the choice of the correct materials for conservation, proper humidity for the exposure, the exclusion of sunlight and

¹⁴) Fang-ju (2008a: 28).

¹⁵) Winter (1985: 259).

¹⁶) Winter (1980:28); Winter (1985: 259).

care in the handling of paintings and calligraphy. For example, quite professional advice, concerning the conservation and restoration of the scrolls is included in the treatise *Zhuang mo zhi* by Zhou Jiazhou (1582 – ca. 1661)¹⁷⁾. Stages of the traditional conservation and reconstruction of the scroll can be described as follows: removing of the lining papers (usually three layers), detaching the painting and the mounting, strengthening the painting layer, filling in the lost areas and strengthening the weak parts, inpainting (or retouching), reconstruction – applying new mounting, and attaching new backing papers. Replacing the lining papers is considered a necessary part of this treatment. In the traditional practice new mounting margins, silk or paper, were always added. The re-mounting and conservation is potentially dangerous for the artistic and material substance of the paintings, which could be easily damaged during this treatment. Old Chinese treatises indicated that the repair of the scroll requires an experienced and talented craftsman.¹⁸⁾

In our times, a growing interest in the documentation of the mounting techniques and the development of more professional conservation techniques began in China in the 80ties and still grows.¹⁹⁾ In 2008, the National Palace Museum in Taipei prepared a special exhibition entitled “The Art of Mounting the Chinese Painting and Calligraphy”, which also displayed examples of conservation. Liu Fang-Liu mentions that in the remounting of ancient works at the National Palace Museum, not only the traditional techniques are followed nowadays.²⁰⁾ It is worth mentioning that some materials, techniques and tools from Japan, the United States and Europe also are used. Furthermore there are some differences in working techniques between those used in different institutions in China as well as in “Chinese conservation workshops” around the world. The conservation of hanging scrolls in China is now more and more professional, on the one hand – with the use of traditional materials and techniques, on the other hand – preceded by thorough analysis and documentation. Chinese conservators consistently work on new methods of conservation of paintings, also developing scientific documentation of the re-mounted artwork with the use of new methods. For example EDX-ray fluorescence is used to record the precise condition of the crack damage, old retouching and underlying

¹⁷⁾ Fang-ju (2008a:26).

¹⁸⁾ Ping-chuang, Tzu-hsiung (1999: 386).

¹⁹⁾ Tzu-hsiung (1989); P’eng-sheng (2003).

²⁰⁾ Fang-ju (2008a: 42).

silk patches²¹). The science of the mounting restoration process is also included in university programmes nowadays.²²

The growing Polish interest in this Chinese art dates back to the 18th and 19th century, but the issues of care and conservation of Far Eastern scrolls are relatively new topics.²³ There are distinctive collections of Chinese historical paintings in some major museums in Poland,²⁴ some examples in special collections,²⁵ or in minor museums and some scrolls are also in private hands. Most of the Far Eastern scrolls came to Poland during 19th and 20th century. Some of them are in a greater or lesser state of damage and are in dire need of conservation treatment. All the reasons for the damage of the Chinese scrolls are even more relevant in the climate of Europe, where humidity is much lower than in the Far East. The materials and the layers of adhesives usually become drier. Furthermore, most of the Far Eastern scrolls in Europe were usually kept rolled for a long time and were not regularly unrolled, or the reverse – they were hanging for a very long time and treated as a stationary decoration. Because the form of a hanging scroll was not common in Europe, the margins were sometimes cut off and the painting was glued onto a rigid support to facilitate its exhibition. The examples of Chinese scrolls gathered in Poland are serve as typical for Western collections in terms of damage and condition. The strengthening of the margins with the use of different materials is not so common, yet there are in fact some examples of such treatment, such as in “The birds on a blooming branch of plum-tree”²⁶ from the collection of the National Museum of Cracow, which was partly strengthened with synthetic oil-cloth, matching the colour of the damaged silk mounting. That treatment caused a total destruction of the mounting and some damage of the painting itself. In this scroll unprofessional repairs to the reverse side could also be observed, making the whole scroll rigid and difficult to roll up, causing additional creases. Such damage is common. The good example of it was the painting of “Three Gods of Good Fortune”²⁷ (Ills. 2, 3) from the Asia and Pacific Museum in Warsaw, whose reverse side had been partly strengthened with Western paper. The initial were manifested in terms

²¹) Fang-ju (2008b: 182).

²²) Ting-fu (2004).

²³) Wojtczak (1996: 35); Liszewska, Gajewska-Brodowska (2009: 196).

²⁴) Such as: National Museum in Cracow and National Museum in Warsaw.

²⁵) Such as: Asia and Pacific Museum in Warsaw.

²⁶) Inv. no: MNK VI-9214.

²⁷) Inv. no: MAiP 15814.

of waving and small creases, as in “God of longevity with a boy on a deer”²⁸⁾ and “*Fenghuang* bird”²⁹⁾ from the collection of the National Museum in Cracow, as well as in the painting of “Bodhisattwa of Compassion”³⁰⁾ from the Asia and Pacific Museum (Ills. 4, 5). Advanced damage could be observed in the large-scale scroll from the collection of the Asia and Pacific Museum in Warsaw, with a sacral picture of “Buddhist-Taoistic and Confucianistic Pantheon”³¹⁾ from the 19th century (Ills. 6, 7). The cockling and cracking was enhanced by the size and weight of this scroll. The scrolls from the Asia and Pacific Museum underwent professional conservation treatment to prevent their further deterioration.³²⁾

The painting of “Arhat Nakula with a pupil” (19th/20th c.) from the collection of the National Museum in Warsaw is also a good example of severe damage. It was mounted in paper margins in the end of 19th or the beginning of 20th century and in the beginning of 21st century it had already been extremely damaged. It underwent conservation and restoration treatment, as part of M.A. project at the Academy of Fine Arts in Warsaw.³³⁾ This hanging scroll was destroyed partly as a result of inappropriate storage and handling and partly because the backing papers were of poor quality. The upper part was particularly soiled – dirty and stained, with the top bar nearly detached – a fairly typical form of damage. The characteristic “waves” and a lot of creases could be seen, both horizontally and vertically. The creases tend to become longer as the scroll was rolled and unrolled. The detachment of the bars, due to the cracking of the upper and bottom part of the scroll, is a typical form of damage. A good example of such damage was the painting “The Portraits of the Ancestors” (19th/20th c.) from the private collection in Warsaw (Ills. 8,9). Staining is also very frequent, as these objects had been transported and kept in poor conditions. Stains usually occur in a regular form, penetrating the whole structure of the rolled up scroll (Ill. 1).

The rolling and unrolling of the scrolls causes specific problems that occur in pigment-media-support relation. The details of 19th century “Landscape with architecture”³⁴⁾ from the Asia and Pacific Museum in Warsaw, show dif-

²⁸⁾ Inv. no: MNK VI-9136.

²⁹⁾ Inv. no: MNK VI-9219.

³⁰⁾ Inv. no: MAiP 9896.

³¹⁾ Inv. no: MAiP 4399

³²⁾ The illustrations show the scrolls before and after the conservation treatment: Liszewska, Tomaszewski 2009.

³³⁾ Liszewska, Gajewska-Brodowska (2009: 196).

³⁴⁾ Inv. no: MAiP 5394.

ferences between the painting layers in this respect (Ills. 10, 11). The red colour in stable areas was identified as mercuric sulphide – natural mineral cinnabar or its manufactured version (vermillion). Unfortunately it is difficult to distinguish these pigments microscopically. Both red pigments were widely used in China and they had good reputation for their depth of colour and stability.³⁵⁾ Indeed, it was observed by the author that the layers of red cinnabar/vermillion in Chinese paintings are usually very stable, with the good adhesion to the backing paper. But the condition of the neighbouring blue colour in “Landscape with architecture” was appalling (Ill. 12). In this painting, losses in the blue areas were retouching during the previous conservation treatment, probably in China (Ills. 13, 14). Historical in-paintings could be observed quite often in Chinese scrolls, because many of them had been already re-mounted and restored several times. In this case the blue colour was identified as azurite. This pigment, together with malachite, is included in the most traditional Chinese palette and has a long history of usage in China.³⁶⁾ In scroll paintings their coarse, thick layers are often unstable and need additional consolidation due to the lack of medium (Ills. 15, 16, 17).

The flaking of azurite and malachite is quite common in Chinese paintings and was also observed in the previously mentioned “Buddhist-Taoist and Confucian Pantheon” from the collection of the Asia and Pacific Museum, where the areas of missing pigment were located along the cracks. Additionally, the author observed some examples of serious destruction of the paper by azurite. That was the case of “The Portraits of the Ancestors” (19th/20th c., private collection, Warsaw), where the severe damage could be observed only in the areas covered with azurite (Ills. 18, 19). Although copper ions catalyses the degradation of paper, this kind of damage is not typical for azurite and can rarely be seen. The damages in “The Portraits of the Ancestors” are visible on the reverse side of the painting as dark “shadows” of the figures (Ill. 20). Such damage requires additional care during conservation. The careful identification and examination of the pigments should be always undertaken as a part of the conservation project because many questions still remain concerning the techniques and models of deterioration of Chinese paintings.³⁷⁾

The conservation of the scrolls has been conducted in a professional way in Poland for about 20 years now. Although it is included in academic education in paper conservation, it is still not particularly widespread among conservators

³⁵⁾ Wise, Wise (1997: 126–127).

³⁶⁾ Wise, Wise (1997: 127); Winter (1984: 12).

³⁷⁾ Winter (1974: 207); Winter, Gaiccai, Leona (2003: 157).

and collectors. This is due to the fact that forms of scrolls from the Far East differ from Western art – something is not commonly understood in Europe. Although hand scrolls are very ancient and well known in the Mediterranean region of Europe, Near East and North Africa, the form of hanging scrolls never really existed there. In fact there were some vertical scrolls, mostly in regions dominated by the Byzantine culture. Some of these scrolls could be even hung for a short time, as for example Ethiopian magic scrolls, but that was not their main function. A form of codex developed around the 4th century and the form of scroll was abandoned little by little in Europe. For a long time conservation workshops have no idea how to preserve these objects in a professional way. Due to the lack of knowledge about the Chinese mounting techniques the conservation treatments were often performed according to methods developed for western art. As previously mentioned, the mounting was sometimes cut off and the picture was glued onto a rigid, card-board support. As a result, some scrolls lost their original form, appearance and character. This type of conservation refers to the Western cultural tradition, and not the culture in which these objects had been created.

These scrolls are now restored in Poland with attention to their function and form, with respect for this traditional Chinese craft (Ill. 21). But even today Polish conservators, responsible for the care of Chinese collections, face some difficult problems. Cooperation in this matter with specialists from the Far East sometimes yields no useful answers. Undoubtedly, the elementary differences in the understanding of certain issues related to the protection of heritage and the concept of authenticity still exist. Conservation treatment in Poland is always preceded by a thorough analysis of the technology and condition of the work of art, following the standard documentation for paintings on paper and silk. Efforts are also made to preserve the silk or paper margins of the mounting, as they are considered to be a part of historical substance. This seems to be quite different from the attitude in Asia, where the mounting is usually changed for a new one during restoration, at best being reconstructed in its original format and mounting style.³⁸⁾ Quite often we can notice some changes in the mounting materials, comparing to the original³⁹⁾. Also the lining papers seem to be always replaced during the re-mounting of the scrolls in China. In the author's opinion, the lining papers of the scrolls should also be preserved whenever it is possible or saved as a record. Although there is growing interest in the studies of paper

³⁸⁾ Fang-ju (2008a: 42).

³⁹⁾ See for example: Fang-ju (2008b: 182–183).

history and some researchers in China undertake the studies in this matter concerning the backings of painting and calligraphy,⁴⁰⁾ the problem of saving the backing papers of the scrolls is still not mentioned.

The local strengthening, old filling in and retouching, if they still function, are often left during the conservation treatment in Poland – and this is considered to be the “Western” way of thinking. Obviously additional strips and patches of new paper for local repairs are used as well. The usage of some Japanese materials for the conservation of Chinese scrolls is very common, especially the thin and strong *kozo* paper, which is considered to be a much better material than Chinese lining paper.⁴¹⁾ The adhesives used for conservation in Poland are usually natural and connected with the Chinese tradition of scroll mounting – mostly starch paste, seaweeds and animal glue. Synthetic adhesives have almost been abandoned and restricted to cellulose derivatives for local strengthening. The de-acidification treatment of paper is now restricted as well. Certainly, one of the most discussed stages of conservation treatment is “retouching”. Most of the ancient Chinese paintings were to a greater or lesser extent retouched in the past, often on the original backing. In the museum conservation studios in China this treatment is now restricted to the retouching of blank areas in the filling-in.⁴²⁾ This is much closer to the attitude in Europe and United States, where modern retouching is rather not recommended and more likely carried out in special cases. Anyway, there are still many points for discussion between specialists.

A lot of problems are connected with the storage and exhibition of the scrolls.⁴³⁾ The question concerning the conditions in which the scrolls should be stored in European museum is still open. Scrolls that were mounted in China should be stored in more humid condition (about 70% RH) and those re-mounted in Europe – probably in drier conditions, comparable to the climate of their seasoning (about 55–60% RH). Most of the materials are sensitive to the light (both colours and paper or silk) and they should not be exposed or more than two weeks in 50 lux lighting conditions. Due to mechanical stress, the scrolls should not hung more than twice a year for a period of one month. In private collections the scrolls are often hung much longer, even several months,

⁴⁰⁾ Hung-sheng 2004.

⁴¹⁾ The usage of different materials, not only traditional is also common attitude in Chinese scroll conservation workshops.

⁴²⁾ Fang-ju (2008a: 42).

⁴³⁾ Liszewska (2014: 318).

because they are still treated as a stationary decoration. For the large scrolls, the brackets for the lower bar should be mounted on the wall. In some cases the bar is detached and the flat painting with the margins is mounted in a frame. For the rolled scrolls, wooden boxes are the traditional solution for storage, because they retain a form of microclimate inside. They are not used in Polish museums, because they are expensive and difficult to handle. The cardboard boxes, made of archival quality material, are used. A good solution for Chinese scrolls is a construction that allows the diameter of the scroll to be increased (Ill. 22).

Zhou Jiazhou wrote in *The book on mounting*: "... Works of painting and calligraphy of previous ages passed down to the present that are damaged or falling apart are in need of remounting. Like seeing a doctor when ill, appropriate treatment can save you, but improper care might lead to death..."⁴⁴⁾ The author of *Unraveling Painting and Calligraphy*, Lu Shihua followed this sentiment: "... If a work of painting or calligraphy does not encounter a master remounter, though severely damaged, it would be better to store it away in a case and not damage it further. If in a rush and given to a clumsy craftsman, it would mean the end of the work..."⁴⁵⁾ The interest in Chinese culture in Europe and the United States is followed by a more global awareness of the role, which the form of the scroll plays in it. The difference in historical and cultural background within a country or a region requires special care for local traditions, often quite incompatible with globalised tendencies within conservation standards, materials and techniques. The technology of the hanging scroll can be adapted to a certain extent during the conservation process. Greater and more specific attention should be focused on identification, recordkeeping and the preservation of original materials in this respect.

Acknowledgements:

The author would like to thank Dr Jacek Tomaszewski, who is co-author of the project of the conservation of Chinese scrolls from the collection of Asia and Pacific Museum in Warsaw.

BIBLIOGRAPHY

An-chih (1986) = Chang An-chih (ed.), *Chung-kuo mei-shu ch'uan-chi, hui-hua pien I* (Chinese Art Series: Painting, vol. I), Peking, 1986.

⁴⁴⁾ Ping-chuang, Tzu-hsiung (1999: 193).

⁴⁵⁾ Ping-chuang, Tzu-hsiung (1999: 386).

- An-lan (1983) = Yü An-lan (ed), *Hua-shih ts'ung-shu* (Series on Art History), Taipei, 1983.
- Convention (2003) = "Convention for the Safeguarding of the Intangible Cultural Heritage 2003", <http://www.unesco.org/culture/ich/index.php?pg=00006>.
- Fang-ju (2008a) = Liu Fang-ju, "The mounting formats, conservation and remounting of Chinese painting and Calligraphy", *The Art of Mounting Chinese Painting and Calligraphy*, Liu Fang-ju (ed.), Taipei, 2008: 24–44.
- Fang-ju (2008b) = Liu Fang-ju (ed.), *The Art of Mounting Chinese Painting and Calligraphy*, Taipei, 2008.
- Gulik (1958) = Robert Hans van Gulik, *Chinese pictorial art as viewed by the connoisseur*, Instituto per il Medio ed Estremo Oriente, Roma, 1958.
- Hung-sheng (2004) = T'ien Hung-sheng (ed.), *Chih-chien—Chung-kuo ku-tai shu-hua, wen-hsien yung chih chien-shang* (Connoisseurship of Paper: An Appreciation of Paper used in Ancient Chinese Documents and Painting and Calligraphy), T'ai-yuan, 2004.
- Lee, Gu, Hou (2003) = Valerie Lee, Xiangmei Gu, Yuan-li Hou, "The treatment of Chinese ancestor portraits: an introduction to Chinese painting conservation techniques", *Journal of American Institute for Conservation*, 2003, 42 (3): 463–477.
- Liszewska (2011) = Weronika Liszewska, "The safeguarding of Asian and European heritage in regard to the conservation standards". In: *Poland-China. Art and Cultural Heritage*, Joanna Wasilewska (ed.), Kraków, 2011: 107–114.
- Liszewska (2014) = Weronika Liszewska, "Care and Conservation of Chinese hanging scrolls in Polish collections". In: *Proceedings of the Second International Conference of Polish and Chinese Art – China-Poland, Art and Cultural Heritage*, Tainan, 2014: 311–318.
- Liszewska, Gajewska-Brodowska (2009) = Weronika Liszewska, Katarzyna Gajewska-Brodowska, "Techniki montażu chińskich zwojów pionowych z punktu widzenia konserwatora". In: Joanna Wasilewska (ed.), *Sztuka Chin*, Warszawa, 2009: 191–200.
- Liszewska, Tomaszewski (2009) = Weronika Liszewska, Jacek Tomaszewski, *Dokumentacja prac konserwatorskich chińskich zwojów pionowych z kolekcji Muzeum Azji i Pacyfiku w Warszawie* [Report on the conservation treatment of Chinese hanging scrolls from the collection of Asia and Pacific Museum in Warsaw], unpublished report, Warszawa 2009.
- Nara Document (1994) = *Nara Document of Authenticity*. In: *Report of the Experts Meeting. 1994 Convention Concerning the Protection of the World Cultural and Natural Heritage*, Nov. 1994, <http://www.unesco.org/who/archive/nara94/html>.
- P'eng-sheng (2003) = Feng P'eng-sheng, *Chung-kuo shu-hua chuang-piao chi-fa* (Methods in Mounting Chinese Painting and Calligraphy), Peking 2003.
- Ping-chuang, Tzu-hsiung (1999) = Tu Ping-chuang and Tu Tzu-hsiung, *Shu-hua chang-piao chi-I chi-shih* (Compilation and Explanation on the Art and Craft of Painting and Calligraphy Mounting), Shanghai 1999.
- Ting-fu (2004) = Fan Ting-fu, *Shu-hua chieh-piao hsiu-fu chih yen-chiu: I chan-shih-hsing chia-ku fang-fa yu ts'ai-liao wei chu* (Research on the Remounting and Restoration of Painting and Calligraphy: Focusing on Methods and materials of Temporary

- Reinforcement), Master's thesis, Tainan National University of the Arts, Graduate Institute of Conservation of Cultural Relics, 2004.
- Tzu-hsiung (1989) = Tu Tzu-hsiung, *Shu-hua chuang-huang hsueh* (Studies in Mounting Painting and Calligraphy, Shanghai 1989).
- UNESCO Declaration (2001) = *UNESCO Universal Declaration on Cultural Diversity 2001*, <http://unesdoc.unesco.org/images/0012/001271/127160m.pdf>.
- Wills (1985) = Paul Wills, "Far Eastern pictorial art – form and function", *The Paper Conservator*, 1985, 9: 5–12.
- Wills (1987) = Paul Wills, "New directions of the ancient kind: conservation traditions in the Far East", *The Paper Conservator*, 1987, 11: 36–38.
- Winter (1974) = John Winter, "Preliminary investigations on Chinese ink in Far Eastern paintings," *Archeological Chemistry, Advances in Chemistry Series 138*, 1974: 207–25.
- Winter (1980) = John Winter, "Deterioration mechanisms in East Asian paintings, some considerations of microscopic structure and mechanical failure models". In: *Proceedings of the International Symposium on the Conservation and Restoration of Cultural Property – Conservation of Far Eastern Objects – 26–29 November 1979, Tokyo National Research Institute of Cultural Properties*, Tokyo 1980: 27–48.
- Winter (1984) = John Winter, "Pigments in China – a preliminary bibliography of identifications". In: *Proceedings of 7th Triennial Meeting ICOM CC*, Copenhagen, 1984: 11–12.
- Winter (1985) = John Winter, "Some material points in the Care of East Asian Paintings", *The International Journal of Museum Management and Curatorship*, 1985, 4: 251–264.
- Winter, Gaiccai, Leona (2003) = John Winter, Jennifer Gaiccai, Marco Leona, "East Asian Painting Pigments: Progress and Remaining Problems", in: *Scientific Research in the Field of Asian Art, Proceedings of the First Forbes Symposium at the Freer Gallery of Art*, 2003: 157–163.
- Wise, Wise (1997) = David Wise, Andrea Wise, "Observations on Nineteenth-century Chinese Pigments with Special Reference to Copper Greens". In: *IPC Conference Proceedings*, London 1997: 125–136.
- Wojtczak (1996) = Mirosława Wojtczak, "Problemy konserwacji zabytków Dalekiego Wschodu na papierze i tkaninie-malarstwo na zwojach pionowych", *Ochrona Zabytków*, 1996, 3: 35–44.



Ill. 1. "Buddhist-Taoist and Confucian Pantheon", 19th c., Asia and Pacific Museum in Warsaw, inv. no: MAiP 4399. Condition before the conservation treatment. The scroll being unrolled on the table, showing horizontal deformations and staining



Ill. 2. "Three Gods of Good Fortune", 19th c., Asia and Pacific Museum in Warsaw, inv. no: MAiP 15814. Condition before the conservation treatment. The scroll in the ranking light



Ill. 3. "Three Gods of Good Fortune", 19th c., Asia and Pacific Museum in Warsaw, inv. no: MAiP 15814. Condition after the conservation treatment



Ill. 4. "Bodhisattva of Compassion", 19th c., Asia and Pacific Museum in Warsaw, inv. no: MAiP 15814. Condition before the conservation treatment. The scroll in the ranking light



Ill. 5. "Bodhisattva of Compassion", 19th c., Asia and Pacific Museum in Warsaw, inv. no: MAiP 15814. Condition after the conservation treatment



Ill. 6. “Buddhist – Taoist and Confucian Pantheon”, 19th c., Asia and Pacific Museum in Warsaw, inv. no: MAiP 4399. Condition before the conservation treatment



Ill. 7. “Buddhist – Taoist and Confucian Pantheon”, 19th c., Asia and Pacific Museum in Warsaw, inv. no: MAiP 4399. Condition after the conservation treatment



Ill. 8. "The Portraits of the Ancestors", 19th/20th c., private collection in Warsaw. Condition before the conservation treatment



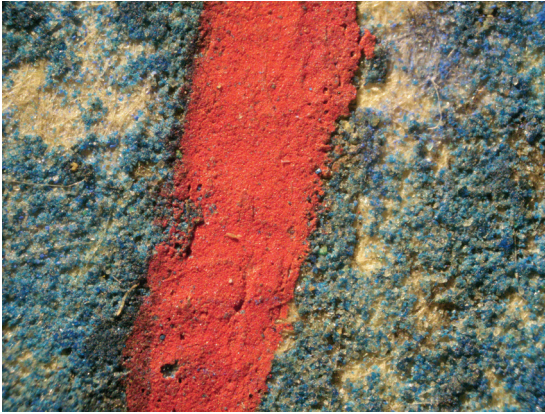
Ill. 9. "The Portraits of the Ancestors", 19th/20th c., private collection in Warsaw. Condition after the conservation treatment



Ill. 10. "Landscape with architecture", 19th c., Asia and Pacific Museum in Warsaw, inv. no: MAiP 5394. Condition before the conservation treatment



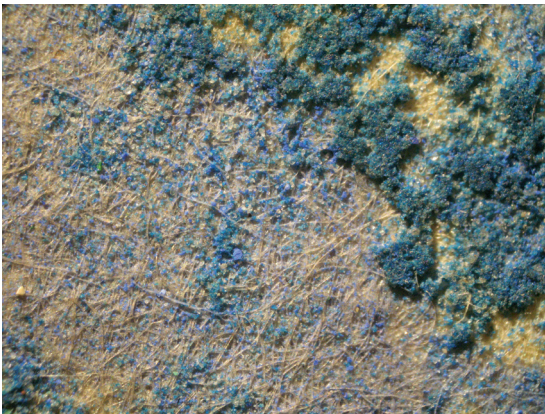
Ill. 11. "Landscape with architecture", 19th c., Asia and Pacific Museum in Warsaw, inv. no: MAiP 5394. Condition after the conservation treatment



Ill. 12. "Landscape with architecture", 19th c., Asia and Pacific Museum in Warsaw, inv. no: MAiP 5394. Microscopic magnification of the layers of azurite and cinnabar/vermillion



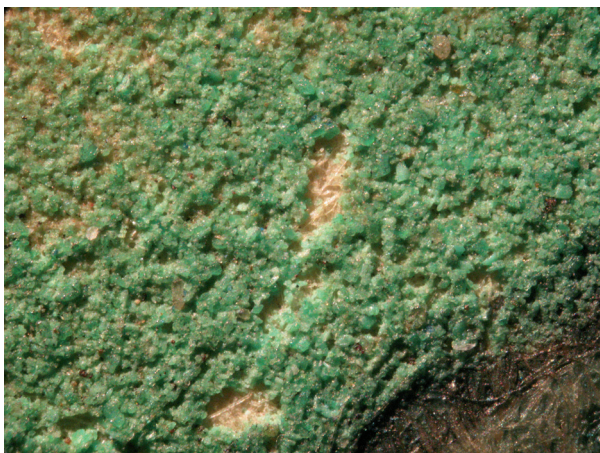
Ill. 13. "Landscape with architecture", 19th c., Asia and Pacific Museum in Warsaw, inv. no: MAiP 5394. A detail of the painting with parts of historic retouching within the blue areas



Ill. 14. "Landscape with architecture", 19th c., Asia and Pacific Museum in Warsaw, inv. no: MAiP 5394. Microscopic magnification showing the parts of original azurite blue and retouching



Ill. 15. "Landscape with architecture", 19th c., Asia and Pacific Museum in Warsaw, inv. no: MAiP 5394. The detail with painting layers of the red cinnabar/vermillion, blue azurite and green malachite, showing the good condition of red colours compared with others



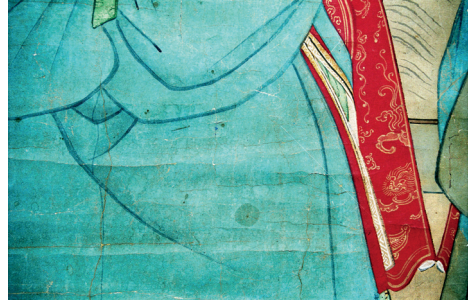
Ill. 16. "Landscape with architecture", 19th c., Asia and Pacific Museum in Warsaw, inv. no: MAiP 5394. Microscopic magnification of the layer of malachite showing the poor adhesion and the loose parts of the pigment



Ill. 17. "Landscape with architecture", 19th c., Asia and Pacific Museum in Warsaw, inv. no: MAiP 5394. The detail of the painting, shown on the ill. 15, during the procedure of facing in course of the conservation treatment



Ill. 18. "The Portraits of the Ancestors", 19th/20th c., private collection in Warsaw. The detail showing the poor condition of the parts painted with azurite and malachite



Ill. 19. "The Portraits of the Ancestors", 19th/20th c., private collection in Warsaw. The detail showing the poor condition of azurite and relatively good condition of cinnabar/vermillion parts



Ill. 20. "The Portraits of the Ancestors", 19th/20th c., private collection in Warsaw. The back side of the scroll showing the "shadows" in the parts painted with azurite and malachite



Ill. 21. "The Portraits of the Ancestors", 19th/20th c., private collection in Warsaw. The painting during the conservation treatment, stretched on the drying board after the procedure of lining



Ill. 22. Such constructions have been made for Chinese scrolls in Asia and Pacific Museum and the scrolls have preserved in good condition