

CONSERVATION OF MURAL PAINTINGS IN THAILAND: AN OUTLINE OF A COMPREHENSIVE APPROACH TO THE PROBLEM

by

MICAELA DU GUERNY*

In Thailand, the purely technical elements of the conservation of murals are documented to a certain extent (see "References", items 9 and 4). This is not to say that no technical problems remain, but that many of these are already perceived, identified and partly analyzed. Occasionally partial solutions are laid out. It is important to note that these technical questions have also been identified in their environmental context: "murals form part of the building; they are not an entity in themselves and are accordingly affected by changes that occur in the structure of the building" (9). Coremans (4) has a broader view; taking into account climatological data, he concentrates on the technique of mural painting, the buildings and possible remedies, and finally passes on to specific monuments and programmes related to museums. Such an approach is logical in the context of discussion of Coremans, Lal and Agrawal, who concentrate on the technical aspects of the few monuments which receive all their attention. The conclusions are therefore focused on the solutions for these monuments through the strengthening of the staff of the museums. It also leads the authors to be rather pessimistic: "many of these beautiful wall paintings have now been totally destroyed due to the effect of time, climate, vandalism and neglect, but there are a few which still remain. The problem today is to find out ways and means of how to save them" (9). "I visited the temples of Bangkok and Thon Buri in 1956; I know therefore what has been lost in six years. I know that in a few years there will be nothing left to save" (4). Since this was written in 1961, 18 years ago, is there anything left to worry about?

The classical, purely technical approach leads to the constant focusing of the literature on the same temples in the Bangkok-Thon Buri area, giving a priority to the technical problems of these temples over the more general aspects which could be taken into consideration.

The objective of this article is to show that if one chooses a somewhat different, perhaps slightly wider framework, solutions to problems of conservation appear in a manageable perspective. In this article attention is drawn to cultural factors, and to some of the constraints under which conservation has to be carried out in Thailand. This broader perspective encourages consideration of actions which can be taken by untrained staff,¹ and attempts to capitalize in a positive manner on the existing constraints. It is from a very pragmatic, non-spectacular point of view that some of the problems are reviewed here. Therefore, if one can be pessimistic

*The author is a diplomate of the International Centre for Conservation (ICC), Rome, and, presently is technical advisor to the Committee for the Survival of Thai Murals, in Bangkok.

1. The role of untrained staff must however remain limited to maintenance activities, the importance of which should not be underestimated.

mistic about the fate of some of the famous *wat* (temples) quoted as examples in most papers, there still remains a number of murals which could be saved. Such a contention, of course, cannot be as well-documented here as in a purely technical paper. However, if the purpose of raising questions on some possible approaches to the problem of conservation is achieved, this article may be justified.

We shall examine the following questions:

- (a) The general context and, in particular, the location of murals.
- (b) Problems due to environment, both physical and cultural.
- (c) Problems due to architecture.
- (d) Problems due to the murals themselves, in terms of style and materials.

The general context

It is with some surprise that we note after a review of the available literature (see "References") that the issue of the location of murals is generally neglected. Factors concerning location can be subdivided as general location of murals, and location of murals inside temples.

Murals inside prang and caves. Only very few cases of a mural in a *prang* are cited. Some of the oldest murals known in Thailand, however, are in *prang*: those of Wat Rajburana in Ayutthaya, built by King Paramaraya II in 1424 (24, 21). These murals are located in a crypt and were discovered in 1957. There is also a mural in a Khmer *prang* in Wat Maha That in Ratchaburi, but although its date is not known it is among the oldest ever found. There are a few murals cited in caves, for example those of Wat Umong Thera Jan (26) in the north of Thailand, and those of Tham Silpa, discovered in 1966, in the south (1, 15). These are also quite old, dating between the thirteenth and sixteenth centuries A.D.²

Two questions can be raised here: was there really nothing before the Ayutthaya period? Is there really so little remaining?

"Thai painting for religious purposes has existed since the Sukhotai period. Some traces of painting still exist in the town of Sukhotai, but they might have been added during the Ayudhya period" (24). This implies that there are no murals from the Dvaravati (sixth to eleventh centuries) or Srivijaya (eighth to thirteenth centuries) periods. It is known that both these cultures were greatly influenced by Indian culture, which produced many murals. It would be strange if sculpture, architecture, etc., were transmitted by the Indian settlers, but not painting. There are numerous caves in the country, some of which are still used as temples and many of which have provided rich finds in prehistoric pottery or more recent religious artifacts. It is quite safe to assume that there remains a considerable number of caves of possible archeological and other value to be discovered. Some may contain murals.

As to *prang* (or *stupa*), the problem is slightly different because paintings which may have been in them could have been destroyed by natural causes or vandalism. To date there is no

2. Boisselier states the oldest of these paintings do not seem to date prior to the 13th century, whereas Vallibhotama reports that Silpa Bhirasri and Khien Yimsiri classify them as "Srivijaya", which could therefore be older.

systematic inventory of such constructions in the country, and even those which are known have not been systematically explored, except perhaps by robbers who, by opening *prang* in search of precious artifacts, must have ruined murals in many cases by exposing them to environmental attacks from which they had been protected before. The particular value in a search of *prang* and caves is that those which might contain murals would contain ancient ones.

Two points need to be mentioned: although it is impossible to give figures with any precision, the population of Thailand at various periods of history—such as during the Sukhothai and Khmer periods—was probably on the same scale as it was during the Ayutthaya period, but its geographic distribution was different from the present, which is concentrated in the Central Plain. This is not only obvious from the size of the ruins of Sukhothai, but also from the evidence of the scale of organization which existed.³ As a result there exists an enormous amount of archeological evidence spread throughout the country, but it is often in highly inaccessible places (i.e. jungle, mountains), and this is only beginning to be uncovered: for example, the new sites mentioned in the *Muang Boran Journal* (15). The advanced organization adapted both Indian and Khmer techniques of building such as the frequent use of narrow vaults which are basically solid constructions. Such vaults could have been decorated with stucco and murals. Therefore if it seems unlikely that nothing existed, it is quite possible that little has survived, and that this little has yet to be found. This could be explained by the building techniques of the period; according to Boisselier the most hope lies with the discovery of caves or through particularly careful archeological digging. Such archeological excavations should be conducted simultaneously with appropriate conservation activities in order to save the remains once they have been cleared.

The chance that some murals have survived is not negligible. Without going too far back, in 1976, a temple was found near Bangkok with Ayutthaya-period murals: Wat Chong Non Si. In ideal conditions the question is therefore whether a national conservation plan should take into account, in an organized manner, future probable discoveries and prepare for them in order to avoid their destruction, or to just continue in a haphazard way.

Murals inside temples. Inside the complex of buildings which form a *wat*, with a few exceptions, the murals are situated in the *bot* which contains the images of the Buddha.

It is generally accepted that the role of murals was to educate people, since the level of literacy was low (2, 13). Such education is one of the basic aims of Buddhism because "ignorance together with greed and hatred, is the cause of suffering" which Buddhism precisely seeks to eliminate. In order to achieve this role the paintings tell the story of the Buddha's life, the stories of his previous lives in the *jātaka* tales, and, in more recent times, under King Rama III, they constitute encyclopedias of knowledge for such fields as astrology and medicine (16).

This educational function also explains why new murals were rarely painted in more modern times, once secular education became more widespread, especially after King Rama VI

3. For example, if the size of the armies necessary to invade the kingdoms of Pagan and Pegu in Burma might have been overemphasized (22), they still must have required a considerable amount of complex organization.

Cultural environment

Here we would like to limit ourselves to pointing out some important cultural factors which have created conservation problems. It will be enough to enumerate some of them, since their study would require considerable detail.

(a) *Lack of concern about the conservation of murals.* Many lamentations are written or heard on this question. Considering that many countries are currently very interested in preserving existing testimonials of their past, and that Thais are generally proud of their own history and cultural heritage, it is baffling to note the "extreme negligence shown in the preservation of this national heritage" (i.e. murals; 27). Several explanations have been advanced, but they only seem to be partial ones:

(i) *The role of the painter and the role of the murals:* Wenck (27) has stressed that the painter was only considered a craftsman and the murals a teaching medium, therefore both the craftsman and the medium were replaceable. This explanation even implies that once the murals are in a poor state, there is a direct incentive to either replace them or simply to whitewash over them, as often happens. Replacement is justified in order for their medium function to be maintained, but since this educational role is no longer so important whitewashing is also justified. Wenck also states that the painter is appreciated for his skill and not for the artistic value of his work. This attitude would result in there being little hesitation in replacing a mural of artistic value with one which is skilfully done and corresponds better to the taste of the day.

(ii) *The role of Buddhism:* Several authors have stressed that "in a Buddhist context everything is 'impermanent' and subject to destruction for the very reason that it is 'made' or 'just put together', and, since detachment is a virtue, there is really no reason to trouble about the preservation of works of art" (1). To verify the extent to which this statement is correct would require answering several questions, such as is this lack of concern greater in Buddhist countries than in non-Buddhist countries? And among Buddhist countries, are there considerable variations, in which case is the Thai variation due to a specific interpretation and application of Buddhism or to other Thai cultural factors?

In this respect one could tentatively suggest a slightly broader explanation: the Buddhist notion of impermanence and detachment have been blended with others resulting in a general acceptance of the course of nature. Therefore there is not only a detachment as pointed out by Boisselier but also a reluctance to interfere. Finally, besides these general religious questions, it would be necessary to study the attitudes of the Buddhist clergy itself towards conservation and the rules which guide it in everyday practice.

(b) *The secondary role of murals.* Besides the direct educational function mentioned, the general purpose of murals in a *wat* is to contribute to the enhancement of the images of the Buddha. The murals are also less important than the structures they are part of. This is why most of the restoration efforts, especially ancient ones, centered on the buildings. For example,

King Rama I "built or restored twelve monasteries", King Rama II continued this work, and King Rama III "built three new monasteries and restored thirty-five monasteries" (16). Considering that many of the murals in Bangkok-Thon Buri area are from the Rama III period, it is probable that this "restoration" concerned the buildings, but that the murals were often entirely redone. It is also sure that the restored temples were selected by other criteria than the needs of the murals! However, the practice of selective restoration of murals is probably quite old, and concentrated on the restoration of specific parts of the murals such as reinserting new golden parts or repairing certain important figures, thus changing the balance of the murals.

Another indication of the secondary role of murals is that although "half a century ago a few distinguished figures of the intellectual elite of Thailand including Prince Naritsaranuwatiwong and Prince Damrong called attention to the significance of Thai painting" (27), the major effort in restoration has focused on bronze since most images of the Buddha are made of this material. An illustration of this fact is that the first major publication on conservation and systematic conservation effort (study, training, research, planning, etc.) is on bronze (7).⁵

(c) Thai historians agree (e.g. 24) that Chinese and European influences were partly responsible for this decline in quality of the Thai murals which lost their specificity. Interest is notably lacking in the preservation of some murals which are under these influences, which is not the case with those more authentically Thai. However, some effort should be made for their conservation since they are part of Thai art, and translate a perception in which Thais might one day rediscover some value.

(d) One point cannot be overemphasized: Thailand is a country in which change has occurred at a tremendous rate in the last few decades. Furthermore this rate of change and its relative problems are amplified by the growth of population. Thai culture was developed by a population which reached roughly 4 million during the Ayutthaya period. It had grown to over 8 million by the 1911 census, and has multiplied over five times since then. Such growth is bound to bring considerable stress to the social structure and cultural values. Under such conditions, it would be very surprising if conservation were considered a priority. It is remarkable that one finds at all groups of people and authorities concerned with conservation, but it is to be expected that their resources are limited.

However, one should not conclude this section with only negative aspects, since there has always been a group of Thais most concerned about the fate of the mural paintings. In recent years this has developed considerably, and the subject is an emerging one. One can therefore expect that more systematic measures will be taken in the future to protect this aspect of the Thai heritage; see for example the attention given to murals in a recent periodical, the *Muang Boran Journal* (15), which is directed at affluent Thais and in which attention often turns towards mural paintings.

5. The need for inventories should be stressed again, and the efforts started in 1959 by the Fine Arts Department should be continued. In the case of bronze the project started with a preliminary, partial inventory limited to the collections in the national and provincial museums of the Fine Arts Department. Thus artifacts in the provinces were also protected.

Problems due to architecture

Here again Coremans's report (4) has analyzed the issues in some detail, especially the problems due to the curvature of the roof and the way it is set on the walls. He has also summarized the problems in a few succinct sentences: "murals in the Thai plains are disintegrating very rapidly, mainly:

- along a horizontal band at intersection of wall and floor (cause: capillary water).
- along a horizontal band at intersection of wall and ceiling (cause: rainwater).
- all over the surface of the walls along vertical streaks (causes: rainwater getting through near ceiling, salt efflorescence)."

To this should be added the wall sockets holding the beams, where humidity often accumulates, eating away the wall and endangering the entire structure.

It should be noted that the most endangered part of the mural paintings is the lower part, which is the one of the greatest value. To the dangers mentioned by Coremans should be added the damages caused by human vandalism or accidental interventions (touching the murals out of curiosity, installing electric wiring, etc.).

Other causes of damage due to Thai architecture also unfortunately exist:

(a) The lack of foundations results in the walls of the temple moving considerably; big cracks may appear (as one part of the wall sinks faster than another), and the walls may also lean. When drainage is undertaken in order to avoid capillary action, one should see to it that it is equally distributed in order to avoid unsettling the wall! However, many *wat* are beyond repair (21).

(b) The desire to build wider temples: the original Khmer vaults were not adapted to form spacious halls. The Thais considered it essential that congregations of people could assemble, and therefore solved the technical problem by using timber beams which are easily destroyed by insects or humidity. The desire for space, coupled with the heaviness of the roofs, introduced a fragility into the entire structure (18). Such building techniques require constant engineering surveillance of the *wat*.

(c) In older *wat*, there were often very small windows, very "narrow vertical openings, a reminiscence of the fine windows of Khmer temples" (18). However, in many cases there were no windows, the interior being lighted only from an entrance door (21), the subdued light being a way to intensify the mystical atmosphere and to enhance the gilded image of the Buddha placed just opposite the entrance door. In these old-style *wat* the murals were painted on a light background, whereas in later periods coloured backgrounds were used. In these old temples the problem of ventilation was often solved by small openings in the rear wall.⁶

6. Nowadays many temples are usually kept closed in an effort to protect them. However, a certain amount of regular ventilation is indispensable in order to hinder the development of fungi and other decay.

Coremans's report and others (e.g. 23) give technical solutions to some of these problems described; such as digging ditches, isolating the wall under the roof, or at its lower section, and piercing ventilation holes, among others.

However, it should be noted that the major problem is the one of daily upkeep and surveillance of the roof for leaks. This can be done to a large extent by having the religious communities and the local population remove leaves, maintaining the drains, and other chores. Most useful would be an effort at education in association with the religious authorities.

In particular, temples which are being abandoned fall into ruin very quickly. A special effort should be oriented towards them. It seems that the building of new *wat* leads to the neglect of older ones in many cases. Finally, educational efforts should inform monks of the dangers of some of the measures in "beautification", such as placing marble slabs against the bottoms of walls in order to hide the damaged parts, which actually aggravates the effects of capillarity.

Problems due to the murals themselves

Stylistic problems

These problems do have certain implications for conservation, and also for restoration problems even if one agrees with Coremans that restoration should be considered only after conservation. We will enumerate just a few.

(a) *Distribution of the murals in the bot* (24). Behind the Buddha image is normally represented the Buddhist cosmology; in front there are scenes of the Enlightenment; whereas on the sides there are, on the top horizontal layer, representations of celestial beings and, at window level, scenes from the Buddha's life or his previous incarnations.

The mode of construction of the roof increases the exposure of the lateral walls to leakages (due to the curvature resting on the wall, mostly in between the windows; see 4). Therefore the scenes of the cosmology and the Enlightenment tend to be better preserved. The rows of celestial beings are high enough to escape capillary action. However, these are less interesting artistically. One cannot insist too much on the fact that the most vulnerable murals are often those representing the common scenes of Thai life at window level.

If it is not possible to restore the temple as a whole, great care must be taken so that its esthetic balance is not disturbed by fragmentary interventions which do not blend into the rest. In this connection esthetic considerations are of greatest importance. Restoration practices which result in repairs which strike the eye and become more visible than the original should be avoided; for example, the colouring of lacunae should be adjusted very carefully to the general background.

(b) As has been stated previously, the ancient Thai murals (early Ayutthaya period) are influenced by Khmer art and tend to the use of very few colours: "the colour is in black, white

and red with only a few spots covered in gold, e.g. Wat Rajburana, 1424" (24). More recent Thai murals use many more colours and gold, and are more complex in their structure. This is mostly due to Chinese and later European influence (use of foreign colours; see 8).

It would be advisable to organize a systematic chemical analysis of the murals taking into account the discontinuity introduced in the style and materials between the old and more recent murals. Such a chemical analysis would provide considerable insight into the best techniques of conservation, although the interpretation of the analysis is complex (9: Lal).

Problems due to materials and painting techniques

These have been well documented by Coremans (4) and Agrawal (9): (a) destruction of the plaster (lime/sand softening, crumbling, blistering, clay plaster disintegrating by crystallization of salts and loss of organic binding matter); (b) alteration and destruction of the paint: change of colour, blistering and flaking, disintegration of binding medium, chemical alteration of pigments, crystal formation, discoloured patches, cryptogamic growth.

Unfortunately the literature is much less abundant in suggesting solutions. Most of the knowledge in the field has been elaborated for temperate or dry climatic zones, and is accumulated in and for Western countries. As noted above there is both a lack of analysis and of experiments of treatment. Little analysis has been done (8) and it has not been done on representative samples. As to experiments in conservation they have not been systematically organized (21, 25).

As we have already mentioned many of the problems, here we limit ourselves, in view of the lack of material, to adding remarks on Henau's analysis (8).

(a) *Chemical problems.* The mortar contains a high proportion of lime (40 to 50 per cent of the volume), and this mortar is therefore fragile, soluble and easily attacked by acidic elements in rainwater. There are also some hygroscopic elements in the mortar which increase the capillarity.

(b) *Chromatographic problems.* Henau's analysis was not able to find traces of organic elements, however Lal (9) has stressed that in tempera the "pigments used with an organic water-soluble adhesive . . . may not be detectable on account of its chemical decomposition". The fact that the mediums used were water-soluble (generally based on gums; see 12) creates a complex technical problem which is not yet resolved.

(c) *The layers of paint.* Each layer is extremely thin, generally under 0.01 millimetre. Due to the tempera technique, these layers are very fragile, and the problem of flaking is particularly acute.

It seems from experience in India and Thailand that two products are quite suitable for temporary conservation of the murals in such tropical countries.

1. Soluble nylon (N-hydroxy methyl nylon). This was used successfully on Coremans's suggestion in Thailand (Wat Yai Suvannaram, Phetchaburi) in 1962. According to Agrawal (9) who visited the temple in 1969, it "has worked very satisfactorily". It also has the advantage of being easy to apply, and therefore one can rapidly cover many murals. It should have the advantage of providing an interim solution while more suitable and thorough methods are searched for. The ease of application should be stressed, since staff with little training could be fruitfully utilized in this respect.

2. Polyvinyl acetate. This has also proved satisfactory according to Lal (9) as a fixative, an impregnant for painted surfaces, a consolidant and an adhesive for securing loose pigment layers. However, the previous application has to be removed occasionally and fresh solution applied. Lal (9) considers it the "most effective and harmless preservative for Indian murals" after having shown the drawbacks of other adhesives such as natural resins (e.g. shellac), which tend to become discoloured and brittle; beeswax, which produces chalkiness and attracts dust; etc. We can only join Lal's plea to experiment systematically with new preservatives and observe the results over time in order to select those most suitable.

For cases in which the structure cannot be saved, we should eventually take into consideration a solution similar to the "strappo and stacco" methods. However, such radical methods might be unacceptable for Thais since they involve the removal of parts of a temple. Also, the techniques of strappo and stacco are not directly applicable to tempera murals. Research and experimentation are necessary to find ways of adapting them to tempera, taking into account the fact that the humidity of the ambience and in the walls constitutes a complicating factor. Finally, one also has to bear in mind that the conservation of the murals once removed would present a major problem.

Conclusion

This brief review of some of the major problems involved in the conservation of mural paintings in Thailand has revealed:

(a) The complexity of the question, the fact that "conservation ... in the hot and humid climate, remains an only partially solved problem" (15), and that more questions can be raised than solutions offered.

(b) The corollary insufficiency of a narrow technical approach to solve the problems in view of both the urgency of the problems (because of the rapidity of the destruction) and the quantity of murals in need of conservation measures for which there are neither sufficient staff nor resources. Most of the presently known murals were painted less than 200 years ago. Considering their present state and the foreseeable effects of climate, negligence and wilful destruction, one can estimate that their present life expectancy is very short indeed; for many of them it can be counted in years rather than in decades. It is thus important to understand

that the existing number of murals does not affect their life expectancy; created at more or less the same time, most will probably disappear together over the next few years. Although such a loss would be grievous not only for Thailand, Thailand alone can decide whether they are to survive.

(c) The necessity of a dual approach : (i) the training and support for technicians with international assistance (e.g. for systematic chemical analysis).⁷ These technicians can assist the authorities in preparing appropriate policies, determining priorities, and preserving selected, particularly important murals; (ii) organizing mass-approach actions through education of the religious authorities and the public for the upkeep of temples and the search for simple and cheap methods which can serve as a temporary solution. This would give some time to search for solutions to technical problems and train a supplementary staff.

Finally, it should be emphasized that there are also positive elements in prospect. We have already indicated the increasing interest of the educated Thai public, and we would like to mention two interesting developments at both the technical and specialized levels. In 1970 the Association of Siamese Architects set up a restoration project for the murals of Wat Rakang, some of the finest in the country (26). This project was made possible after the architects had previously organized an art conservation committee in 1968. And concerning education of the monks, museum galleries have been opened especially for monks for two days during the Phansa period (Rains Retreat) in order to interest the monastic authorities in their artistic heritage and motivate them to conserve objects under their care. "It has encouraged them to give more attention and care to the murals and objects in their monasteries" (10).

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*N.B. 1. Following custom, Thai names are classified here under the first name and not under the family name, e.g. Dhanit Yupho and not Yupho, Dhanit.

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