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Curative Conservation Of The Metal Collection At Museum Benteng Vredeburg Yogyakarta

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ABSTRACT

Museum Benteng Vredeburg Yogyakarta (MBVY) serves as evidence of prehistoric remnants and commemorates Indonesia's pre-independence struggle. Its diverse collection includes metals possessing historical and artistic value. Metal, prone to corrosion through oxidation, requires preventive measures against various damage agents. This study explores curative conservation practices for corroded metal collections at MBVY. Utilizing a descriptive-qualitative approach, data from observation, interviews, and documentation inform the analysis. Following standards like A Practical Guide to the Care and Conservation of Metal, the research outlines the curative conservation process—proposals, identification, documentation, repetition, monitoring, and evaluation. Challenges, including limited human resources, underscore the importance of adhering to standard operational procedures.

Keywords: Curative Conservation, Metal, Museum Benteng Vredeburg Yogyakarta

INTRODUCTION

Indonesia, with a rich pre-independence history shaped by the colonization of more than three countries, has a wealth of metal artifacts as remnants of its colonial past. These artifacts not only serve as tangible reminders of historical periods but also reflect the progress of civilization. Even though UNESCO only recognized 12 objects of Indonesian cultural heritage, such as keris in 2008 and batik in 2009 (Ministry of Education and Culture, 2022), this country has a much more diverse cultural wealth. This commitment to maintaining cultural heritage can be seen through the designation of 1,635 cultural heritage sites at various levels by the Ministry of Education and Culture (Kemendikbud, 2022). Museums, which function as repositories for these artifacts, play an important role in preserving the nation's cultural heritage.Among the museums in Indonesia, the one in the Special Region of Yogyakarta stands out, with 35 diverse institutions. Museum Benteng Vredeburg Yogyakarta (MBVY) is evidence of pre-independence artifacts and has been transformed into a special repository of evidence of Indonesia's struggle for independence. With more than 7,604 items categorized into 14 groups, the MBVY collection covers the colonial period through the Japanese occupation to the independence revolution (Erlianti, 2019:26). Conservation efforts for this extensive collection involve specialists called conservators, who work with a variety of materials such as metal, wood, textiles, ceramics, and more. Metal artifacts, an important component of the MBVY collection, symbolize the evolution of civilization. The challenge lies in preserving these metal items, which are susceptible to damage due to fluctuations in temperature and humidity levels (Setiawan & Mesuari, 2012:81).

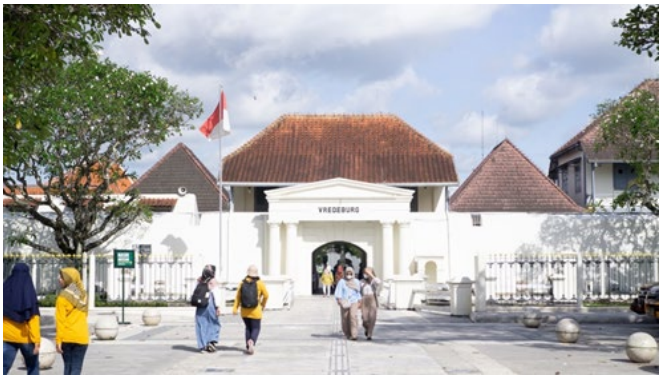

Figure 1: Front Gate of Museum Benteng Vredeburg Yogyakarta, July 25, 2022 Doc. Hariny Puspadewi Sekarlatih

Preventive conservation practices are important, especially considering Yogyakarta's tropical climate, where increased humidity poses a risk to the stability of metal collections. Conservators, who are responsible for preventive and curative conservation, closely monitor conditions and carry out regular inspections to assess the need for further conservation.However, challenges remain, with the potential for mishandling during curative conservation. This study emphasizes the importance of a careful approach to avoid further damage during the curative conservation process. Observations of curative conservation practices at MBVY mainly stem from the selection of appropriate methods. As a non-profit organization, MBVY faces obstacles to preserving its collections, and conservators play an important role despite these challenges. MBVY conservation has been going on for more than 27 years. This thus provides insight into the complexity of curative conservation practices for metal collections at MBVY. This research also highlights the complex role of conservators in curative conservation practices and emphasizes the need for further research in this area.

METHOD

This research uses various data collection methods, including direct observation in the field, interviews with key and related sources, and documentation studies. Curative conservation is an integral part of data collection and analysis in this qualitative research, where this activity is carried out simultaneously with data analysis. Observations were carried out in a participatory manner to obtain objective information about the activities of MBVY conservators, while structured interviews with sources involved, such as conservators and cultural officials, provided an in-depth perspective. Documentation studies include various data sources, such as field notes, photos, and documents related to the process of handling metal collections. Data collection instruments involve cell phones with WhatsApp and Zoom applications for communication, voice recorders for recording interviews, cameras for photo and video documentation, and notebooks for recording important points during the data collection process. The triangulation method is used to combine data from various techniques and sources, ensuring the validity and accuracy of research results. This research uses various data collection methods, including direct observation in the field, interviews with key and related sources, and documentation studies. Curative conservation is an integral part of data collection and analysis in this qualitative research, where this activity is carried out simultaneously with data analysis. Observations were carried out in a participatory manner to obtain objective information about the activities of MBVY conservators, while structured interviews with sources involved, such as conservators, provided an in-depth perspective (Raco, 2020:12). Documentation studies include various data sources, such as field notes, photos, and documents related to the process of handling metal collections. Data collection instruments include cell phones with WhatsApp and Zoom applications for communication, voice recorders for recording interviews, cameras for photo and video documentation, and notebooks for recording important points during the data collection process. The triangulation method is used to combine data from various techniques and sources, ensuring the validity and accuracy of research results (Sugiyono, 2019:241).

THEORETICAL BASIS

This research examines the curative conservation of metal collections at the Museum Benteng Vredeburg Yogyakarta (MBVY). MBVY is a museum protected by the government and has structured procedures for curative conservation activities, regulated by a number of museum-related laws, regulations, and government policies.

The main legal basis involves Republic of Indonesia Government Regulation Number 19 of 1995, which regulates the preservation and use of cultural heritage objects in museums, as well as Law No. 11 of 2010, which explains the function of museums in protecting, developing, and utilizing collections. MBVY also refers to other regulations, including the Minister of Education and Culture Regulation as well as Government Regulation Number 66 of 2015 concerning museums.

Curative conservation at MBVY is carried out using various theories and concepts, including conservation as a curative, restoration, and preventive measure. Museums involve conservators who have in-depth knowledge of art materials, manufacturing techniques, conservation methods, and conservation ethics.

Curative conservation activities involve several stages, such as cleaning, corrosion removal, surface protection, and the repair of physical damage. This process is carried out using a scientific approach, and the results are recorded systematically.

Research shows that the metal collection at MBVY plays an important role in preserving history and cultural identity. The metal collection consists of various types, including iron, bronze, and brass. Curative conservation is crucial in maintaining the sustainability of collections, considering that metal can experience corrosion and physical damage.

Museums are described as non-profit institutions that serve the public with primary functions involving research, collecting, interpretation, preservation, and exhibition. Museums in Indonesia have SOPs and play an important role in preserving culture and as a source of authentic cultural information for the community.

In conclusion, this research highlights the practice of curative conservation of metal collections at MBVY, emphasizing the importance of legal foundations, theories, and scientific procedures in preserving collections and involving the museum as a critical cultural preservation forum.

RESULT AND DISCUSSION

Museum Benteng Vredeburg Yogyakarta (MBVY)

MBVY is a historical building that is a museum of the Indonesian national struggle. Located in the center of Yogyakarta, MBVY has functioned as a museum ince 1984. With an area of 46,574 m2 and 28 buildings after restoration, MBVY has a diverse collection related to the history of the struggle in Yogyakarta. In the performance report, there is a legal basis, duties, functions, and organizational structure of MBVY, which includes management, assessment, maintenance, presentation, and education. MBVY's vision and mission are to preserve historical values as a medium for character education for the younger generation.

MBVY aims to protect collections with a focus on various materials such as wood, metal, and fiber. The MBVY collection has unique characteristics, and changing conditions over time require appropriate conservation. POS-AP as a conservation guide has been prepared, with conservators carrying out curative conservation on 80 collections, especially metals that have been exposed to pollutants, oxidized, rusted, or even warped. Conservation involves conservators, technicians, interns, and research students, with knowledge obtained from various sources such as ancient books, training, and information exchange with other conservation institutions. Curative conservation measures are crucial to maintaining the stability of the collection, starting with a thorough observation of the condition, materials, history, and value of the collection. In particular, curative conservation of metals involves regular inspection, temperature and humidity monitoring, and data collection for collections that require more intensive care.

The conservatory team follows the work flow regulated by POS-AP, with the aim of maintaining the integrity and historical value of MBVY collection objects. The flow of implementing MBVY curative conservation will take approximately one month, assuming the time required is 547 hours. This is maximized in the maintenance of the MBVY collection, considering that the collection owned by MBVY is very large and requires maintenance as a treatment (curative) in the nature of dealing with damage or degradation of the collection.

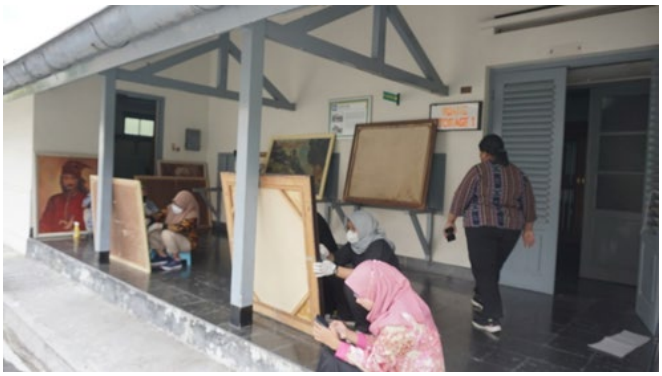

Figure 2: Curative conservation activities carried out by MBVY conservators and intern students from SMKN 1 Yogyakarta on September 16, 2022. Doc. Hariny Puspadewi Sekarlatih

10 Damage Agents

MBVY is a historical building that is a museum of the Indonesian national struggle. Located in the center of Yogyakarta, MBVY has functioned as a museum since 1984. With an area of 46,574 m2 and 28 buildings after restoration, MBVY has various collections related to the history of the struggle in Yogyakarta. In the performance report, there is a legal basis, duties, functions, and organizational structure of MBVY, which includes management, assessment, maintenance, presentation, and education. MBVY's vision and mission are to preserve historical values as a medium for character education for the younger generation.MBVY aims to protect collections with a focus on various materials such as wood, metal, and fiber. The MBVY collection has unique characteristics, and changing conditions over time require appropriate conservation. POS-AP as a conservation guide has been prepared, where conservators carry out curative conservation of 80 collections, especially metals that are exposed to pollutants, oxidized, rusty, or even warped. Conservation involves conservators, technicians, interns, and research students, with knowledge gained from various sources such as ancient books, training, and information exchange with other conservation institutions. Curative conservation measures are essential to maintaining the stability of a collection, starting with a thorough observation of the condition, materials, history, and value of the collection. Specifically, curative conservation of metals involves regular inspections, temperature and humidity monitoring, and data collection for collections that require more intensive care.The conservatory team follows the work flow regulated by POS-AP, with the aim of maintaining the integrity and historical value of MBVY collection objects. The flow of implementing MBVY curative conservation will take approximately one month, assuming the time required is 547 hours. This is maximized in maintaining the MBVY collection, considering that the collection owned by MBVY is very

large and requires maintenance as a treatment (curative), which is to overcome damage or degradation of the collection.10 Agents of DamageAgents destroying museum collections can be divided into 10 main categories that are important to understand so that preventive measures can be planned. The ten causes of damage include physical force, theft, vandalism, neglect or dissociation, fire, water, pests, pollutants, light, inappropriate humidity, and inappropriate temperature (Asiarto, 2008:22–39). Physical forces, such as impact and pressure, can permanently damage collections, especially fragile materials such as ceramics and glass. Theft and vandalism are serious threats, and valuable collections such as jewelry and historical artifacts are vulnerable to permanent loss. Negligence in the documentation process can result in the loss of important information about the collection. Fire, water, and pests are natural threats that can cause serious damage, and pollutants such as dust and gas can leave scars on collections. Improper light can cause permanent discoloration, while improper humidity and temperature can damage metal collections and organic materials. Prevention through environmental monitoring, protection, and maintenance is key to maintaining the integrity of museum collections.

Metal Collection Damage Problems and Their Handling

Metal collection at MBVY experienced major problems such as corrosion of iron and bronze materials. Physical signs such as spots, color, and changes in shape indicate damage. High-humidity environments, especially in airtight rooms, can trigger the growth of corrosion before signs of damage are visible. MBVY's metal collection includes numismatics, sofas, cooking utensils, cannons, and brass statues. MBVY conservators carry out curative treatment of iron-based collections that are experiencing corrosion. This process involves using lime as a corrosion remover, removing acid using tipol, washing with distilled water, and finally using singer oil as a coating after drying the collection.In bronze collection, corrosion is treated using citric acid and alcohol. The stages include cleaning dust, removing corrosion using citric acid, washing with Tipol, rinsing with distilled water, and using Singer oil as a coating. This process involves repeated observation and maintenance if corrosion is still visible. Collection objects that have been detected to contain rust need to be removed using citric acid mixed with distilled water, with the following notes:

(1) If the corrosion area is <60%, use 3% citric acid and soak for 2 hours.
(2) If the corrosion area is >60%, use 6% citric acid and soak for 24 hours.

It is important to create a stable environment and perform routine monitoring and preventative maintenance to maintain the integrity of metal collection at MBVY. One of the preventive conservation activities carried out by MBVY is monitoring and cleaning the area around the collection to remove existing dust. Curative conservation activities that are routinely carried out include cleaning collections every Monday while observing other collections as a preventive measure against damage.

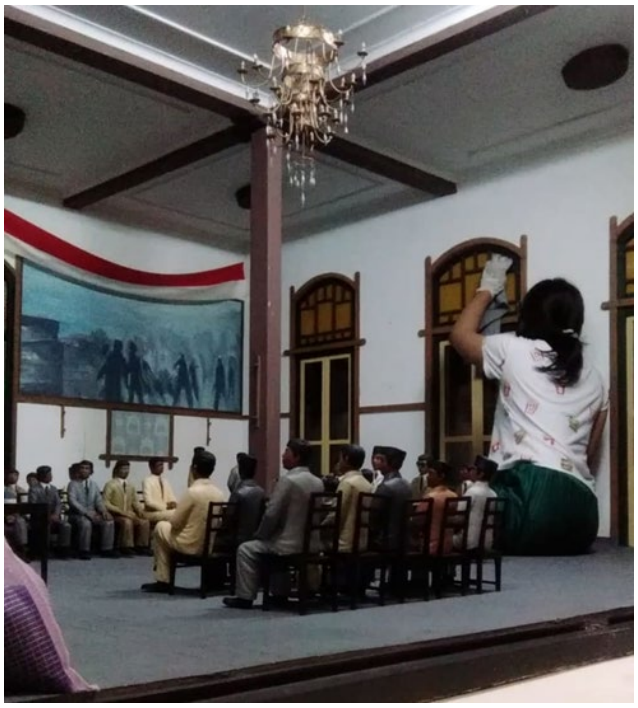

Figure 3: Dom cleaning every Monday, July 25, 2022, Doc. Hariny Puspadewi Sekarlatih

Curative Conservation Method

Curative conservation methods in the care of metal collections can be divided into two categories: traditional and modern. MBVY adopts traditional conservation methods and selects methods based on metal collection base materials. Traditional methods include using organic ingredients to protect the collection, such as lime, tamarind, starfruit, and maja fruit. In particular, lime is the main choice because it is considered safe and effective (Rochmah, Ch.R., & Lestari, 2014: 79). Traditional methods focus on using natural ingredients as corrosion removers and cleaners. For example, tamarind contains corrosion-protecting compounds called inhibitors, and star fruit and maja fruit are used to clean metal from corrosion. Apart from that, lime, with its citric acid content, has been used by the Balinese people to care for inscriptions and prevent corrosion (Titasari, Zuraidah, & Laksmi, 2014: 14).

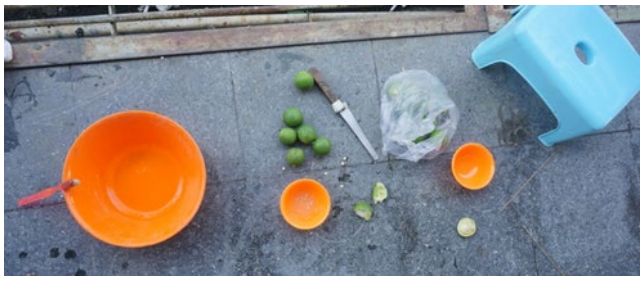

Figure 4: Limes, knives, bowls, nylon toothbrushes, clean cloths, and plastic seats are some of the tools and materials used for curative conservation of iron-based collections. 6 September 2022, Doc. Hariny Puspadewi Sekarlatih

On the other hand, modern conservation methods use chemicals such as alcohol, rochella alkali salt, sodium sesquicarbonate, and glycerol alkali. These chemicals can speed up the conservation process, but you need to pay attention to the right dosage to avoid new damage to the collection. MBVY currently still uses a mixture of citric acid with a concentration of 3-5% with distilled water as a solvent to remove corrosion, while to remove dirt, it uses 3-5% alcohol. However, this mixture is only used when the corrosion is considered to be thick and has limits according to the corrosion zone experienced by the metal collection (Novita, 2023). Currently, MBVY still chooses the traditional method of using lime juice as a corrosion remover for iron and bronze metal collections. A mixture of citric acid and distilled water is used to treat corrosion, while alcohol is used to clean dirt from thick corrosion. Although traditional methods take longer, MBVY considers them a safe and effective option for caring for metal collections.

Curative Conservation Process

Curative conservation of metal materials at MBVY is carried out as an effort to care for metal collections, especially to overcome corrosion in metals such as iron, brass, and bronze. Conservation activities in 2022 include several stages described by Turner (2008), including documentation, identification, dust removal, corrosion removal, washing, rinsing, repeating, coating, and continued monitoring.

Documentation is the first step, which aims to record the condition of the collection before and after treatment. Collection identification is carried out by filling out a treatment card, which records the type of damage and the materials or drugs used. Dust cleaning is the initial stage to remove potential causes of corrosion using a feather duster or soft cloth.

Corrosion removal can be carried out in the traditional way using 5% citric acid, although chemical compounds can be mixed if necessary in small quantities. Washing using tipol and rinsing is carried out to remove acid from the metal collection by choosing a place that has good air circulation so that the conservator avoids exposure to tipol vapor.

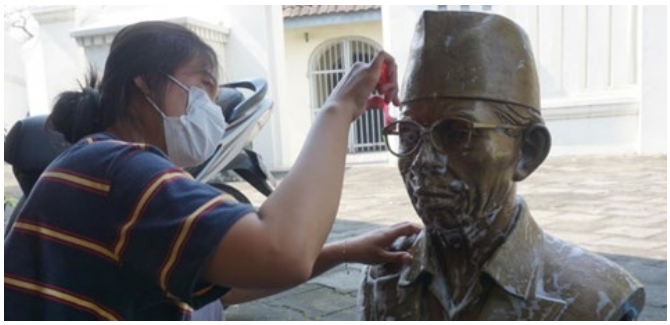

Figure 5: Process of washing Prince Diponegoro's metal collection using tipol on all parts of the collection, September 6, 2022, Doc. Hariny Puspadewi Sekarlatih

Repetition is a step that is taken if the corrosion has not disappeared in one treatment; this is adjusted to the level of degradation and thickness of the corrosion in the batch. The coating stage using singer oil aims to prevent corrosion again. Further monitoring is carried out as a preventive measure to determine the condition of the collection after curative conservation. This monitoring is carried out by the conservator and reviewed by the head of the museum. This entire conservation process helps extend the life of metal collections and prevents further damage due to corrosion.

Results and Comparison of Curative Conservation

Metal-based curative conservation methods can be carried out using traditional and modern methods, each of which has advantages and disadvantages that need to be considered according to the needs of the collection. MBVY uses traditional methods, and the results are recorded in a comparison table with modern methods based on interviews.The traditional MBVY method involves tools and materials such as a clean cloth, soft toothbrush, nylon brush, gloves, knife, cotton wool, bowl, feather duster, and tub. For iron-corrosive materials, lime liquid, tipol, distilled water, and singer oil are used. Meanwhile, bronze, tamarind, distilled water, and singer's oil are used.Modern methods involve tools and materials such as clean cloths, soft toothbrushes, nylon brushes, gloves, cotton balls, bowls, feather dusters, and tubs. The materials used for iron are 5% citric acid and distilled water, while for bronze and brass, the alkali Greceryl 120 cc, distilled water, and sodium hydroxide (NaOH) are used.The curative conservation process consists of stages such as cleaning dust, removing corrosion, washing, rinsing, drying, observing the results, and applying sunflower oil. Follow-up monitoring is carried out to ensure the condition of the collection after treatment.The advantages of traditional methods include lower risk of damage, cheaper prices, easily available materials, safety for conservators, and a tendency to corrosion in collections in the long term.

Meanwhile, the advantages of modern methods include the shorter duration of the conservator's work. However, modern methods have disadvantages, such as higher costs, potential danger to conservators, and collections that tend to be more susceptible to corrosion due to the use of chemicals that make the surface of the collection thinner. The traditional method has a weakness, namely that the work duration is longer for the conservator because the stages are carried out repeatedly.

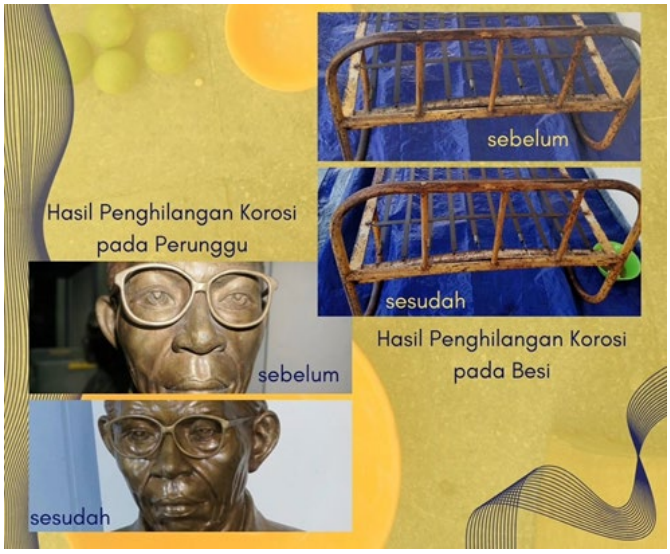

Figure 6: Results and Comparison of Curative Conservation. September 6, 2022, Doc. Hariny Puspadewi Sekarlatih

CONCLUSIONS

Based on the research results obtained, it was concluded that curative conservation practices at MBVY had been implemented well in accordance with the POS-AP flow. Conservation practices are supported by human resources, laboratory facilities, and other program support as part of collection care measures. Curative conservation activities carried out, especially for metal collections, go through a fairly long process. POS-AP is an important basis for guiding curative conservation activities at MBVY. The flow of activities carried out starts with making proposals, identifying collections that have been observed, documentation, conservation processes, repetition, monitoring, and evaluation, which must be carried out by the conservator team. Curative conservation practices are an important part of metals collection at MBVY.This is based on metal materials that are easily corroded, thus allowing the metal to be degraded. After conducting research in the field, the types of damage found in metal collections were corrosion and physical changes due to human negligence (falls, etc.). The curative conservation methods used by MBVY conservators are traditional and modern methods, referring to the Borobudur Conservation Center's proposal that conservation be directed using traditional methods because they are considered safer and do not damage the collection. MBVY conservators also choose traditional curative conservation methods to apply to the metal collection.The difference between traditional and modern methods lies in the acid obtained as a corrosion remover for metal collections. Citric acid, which is made from lime juice, is able to remove corrosion slowly and is safe for repeated use. Meanwhile, citric acid, which comes from a chemical compound as a metal corrosion remover, is a modern method that can remove corrosion more quickly, but it is recommended not to use it excessively because it will trigger damage to the metal collection. Traditional methods are predominantly used by MBVY as a treatment option for metal collections, and in reality, in the field, modern methods are applied to metal collections that are deemed to be in need (corrosion is too thick).

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