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**The Palace Armoury
of Valletta**

January-February 1969

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THE PALACE ARMOURY OF VALLETTA

January - February 1969

A. Czerwinski and Z. ~~Sy~~gulski

U N E S C O

CONTENTS

- A. Introduction
- B. Historical tradition of the Palace Armoury of Valletta
- C. Present condition of the Armoury
- D. The present state of conservation and recommendations to preserve the objects of arms and armour
- E. Plan for the reorganization of the Armoury

Illustrations :

- Plate 1 : Palace Armoury, Valletta, about 1850
- Plate 2 : Palace Armoury, Valletta, arranged under Sir Gaspard le Merchant, Governor, 1858-1864
- Plate 3 : Palace Armoury, Valletta, arranged under Sir Gaspard le Merchant, Governor, 1858-1864
- Plate 4 : Palace Armoury, Valletta, arranged by Guy F. Laking in 1900
- Plate 5 : Palace Armoury, Valletta, arranged by Guy F. Laking in 1900
- Plate 6.: Palace Armoury, Valletta, state from 1948-1969
- Plate 7 : Palace Armoury, Valletta, state from 1948-1969

A. INTRODUCTION

We arrived to Malta on the 23 January 1969 and were met at the Valletta airport by Mr. C.G. Zammit, Director of the National Museum. The following day we called on Mr. G.E. Yates, UNDP Representative in Malta, and met the staff of the National Museum and shown the problems of the Palace Armoury (hereinafter called in this report "the Armoury").

The basic catalogue of the Armoury was published just after 1900 (without exact date) by Guy Francis Laking, under the title : "A Catalogue of the Armour and Arms in the Armoury of the Knights of St. John of Jerusalem, now in the Palace, Valletta, Malta, London, Bradbury, Agnew & Co., LD, pp. XVII and 52, pl. XXXII.

It was a topographical catalogue: the sequence of items corresponded to the 464 objects chosen as the most outstanding and displayed on screens, racks, in show-cases and on floor. There were described in the catalogue and marked with white paint numbers. The lion's part of the objects which were shown on walls and on dummies in the Gallery and in the corridors of the Palace were simply counted by the author, without classification, and recorded as "helmet", "breastplate", "gun", "pistol", "pike", etc.. without further identification. There were, according to Laking's calculation, 4822 pieces, which added to the former group, totals 5286 objects.

Laking's record was repeated with small alterations in the "Inventory of the arms and armour in the Palace Armoury" which was probably printed in 1927. Since that time many changes took place, the major one during World War II when the exhibition was dismantled and the collection placed elsewhere for safety.

The present arrangement of the Armoury differs from the one made by Laking. The objects have been shuffled, inventory numbers are faded or have vanished. The old catalogue, valuable as it is, cannot be used as a scientific document. For example, a count of objects has yielded figures different from those stated by Laking.

In this situation we considered that our primary task was to take stock of all objects which may belong to the Armoury whether they were in the Gallery or outside of it. As there is no trained curator of the Armoury and no documentalist to be instructed in cataloguing procedure, we had to accomplish the work by ourselves helped only by the staff of the Armoury conservation workshop and museum labourers. Taking into account the amount of time available and technical circumstances we decided to establish the inventory upon the following principles :

1. Basically, retain the topographical system.
2. To apply to every object a registration number, marking it with white or red paint : PA (Palace Armoury)-Np.

3. To check, if possible, the items of Laking's catalogue with the entries of the new inventory.

As it proved impossible to pick objects from the walls we proposed a full photographic documentation and the introducing of inventory numbers upon the photographs, to be marked later on by the museum labourers on the exhibits. Thanks to understanding and energy of Director Zammit the necessary installations were at once prepared and photographs made.

In the new inventory the following groups of objects were introduced :

- A. Objects in the show-cases, on dummies and racks, as well as those standing on the floor of the Gallery (I.E. the main hall of the Armoury).
- B. Objects exposed in the main staircase leading to the Gallery.
- C. Armour on dummies in the Palace corridors.
- D. Objects, at the moment, in the conservation workshop.
- E. Objects outside the Palace.
- F. Objects on the walls of the Gallery.
- G. Objects on the walls of the Palace corridors.

We realize that the inventory is still far from perfect, but even in its present stage, it could not have been done, without the assistance of the museum staff. This operation took the most of the time at our disposal. In the process of inventoring objects were identified and classified. All the next steps, especially those concerning the reorganization of display, were based upon this experience. Most of Laking's attributions proved to be valid, nevertheless according to the present state of knowledge many important alterations have been introduced. Examination also gave rise to statements on conservation of the objects which will be summarized below.

On the 6th of February plans for the reorganization of the Armoury were discussed with Mr. V.J. Castillo, Permanent Secretary of Ministry of Education, Culture and Tourism, at the presence of Director C.G. Zammit and Dr. J. Cauchi, museum curator of fine arts, who is also in charge of the Armoury.

B. HISTORICAL TRADITION OF THE PALACE ARMOURY OF VALLETTA

The Armoury of Valletta ranks among the most valuable historic monuments of European culture. This eminence is founded upon a rare uniformity of the Armoury room and its exceedingly rich contents. There are many arms and armour collections in the world; most of them located in museums not older than the second half of the 19th century. Only a very few such as the Armouries of the Tower of London, the Copenhagen Arsenal or the Landes Zeughaus at Graz (Austria) boast of having collections housed in original buildings.

The Maltese Armoury in its present architectural structure dates from the 18th century, from the time of important rebuilding of the Palace under the rule of Grand Master Manuel Pinto de Fonseca (1741-1773). It forms a magnificent rectangular gallery (255 f. long, 38 f. wide and 35 f; high), one of the biggest single halls for housing armoury in existence. The immense scale of architecture is one of the most striking features of Valletta.

The main entrance to the Armoury was originally straight from the Palace corridor. Today it is located at its western corner. All around the Gallery are a row of windows (18 together), between which portions of the wall form natural panels to show arms. The floor is made of square blocks of local grey limestone. It has a flat roof bared originally one painted wooden beams.

It is most probable that the Gallery, from the very beginning, was designed as the Armoury of Honours (Armeria di Rispetto) to expose the signs of past glories of the Knights. In fact there are only a few parade suits of armour which are traditionally identified with some outstanding Master or Commander. The prevailing mass of the material are regular war armament. This double character of the collection involved problems which we face even today. The most important data concerning the history of the Armoury have been noted by Laking, who carried out his research in the Valletta archival records. We suppose, however, that some sources have been neglected or misinterpreted. We can hardly believe, in Laking's opinion, that the Armoury was started in 1531 by the generosity of Henry VIII. The Knights always had armament and must have brought weapons by themselves when arriving in Malta. The statutes of the Order contained stringent rules for the care and maintenance of arms. There were arsenals in many places in Malta under the Order notably : at Citta Notabile (M'dina), Vittoriosa, Senglea, and Cospicua. The Armoury of the Falconry and "Armeria di Rispetto" are also mentioned in the records. As early as the year 1555 Grand Master Claude de la Sengle decreed that all arms and armour included in the estate of a deceased Knight should be deposited in the armoury of the Order. In this regulation one can see not only military objectives but also a commemorative purpose. There was also the ever recurring problem of old and new weapons. The tendency of sentimental approach towards the ancient trophies interfered with the urgent necessity of modernizing arms and of keeping them in combat readiness.

Even during the time of Grand Master Pinto an order was passed for cleaning the Palace Armoury of all old arms "as the armoury must only contain all the new arms which have already arrived from France and which are continually arriving". Fortunately, the order was not rigourously executed.

We do not possess any detailed description of the Armoury from the second half of the 18th century, the more valuable is a short note in "Malte, par un Voyageur Français", published in 1791, it reads : "The Armoury presents an attractive sight from the tasteful manner in which the trophies are arranged on its walls. At one extremity of the gallery is the beautiful cuirass damascened in gold, which belonged to the Grand Master Aloff de Wignacourt".

The invasion of Bonaparte in 1798 put an end to the glorious period of Malta dominated by the Order. Modern warfare as applied by Bonaparte included the organised robbery of art treasures and historic relics. No exact data are available but it may be taken for granted that many outstanding objects of the Armoury were taken to France.

The first 50 years of British rule were also unfavourable for the Armoury, Once again the idea of transforming the old armoury into a modern arsenal prevailed. Thousands of muskets with bayonets, pistols and boarding pikes manufactured in the Tower were sent by the British Government to Malta and deposited in the Palace Armoury while old pieces of arms were thrown aside. This stage of the Armoury is documented by a unique print, a lithograph of about 1850. The outlook of the Gallery was changed by adding a row of column-like supports of the ancient roof. They were designed in "Egyptian" style, which was popular in the late Romantic period. Some suits of old armour are visible (see Plate 1) (even the famous Wignacourt armour can be recognized), there are helmets and separate pieces of armour hanging high on walls, but all around the Gallery there stand racks with muskets, and the columns are covered with bundles of cavalry lances. Fortunately they were removed from the Armoury in 1855, to be shipped back to England.

A new period of the Armoury was opened by the activity of Sir Gaspard de Marchant, Governor from 1858-1864, a great amateur and connoisseur of antiquities. Under his personal direction arms were restored, classified and displayed. The system of arranging of panoplies and trophies was applied and fully developed. Dummies of wood were designed and built for the suit of armour, round shields of papier-maché with emblems of the Eight "Langues" and arms of the Grand Masters were made. Armour was attractively distributed against walls and columns, pikes and halberds were added to the "hands", cannon put on floor and small arms in the table show-cases. Ornamental iron chandeliers lighted the Gallery. He achieved clarity and stylistic uniformity of the exhibition which limited by the conventions of his time, showed moderation and good taste (see Plates II and III).

At the end of the century as historical and critical studies increased, the romantic appearance of the Armoury irritated to some people. Lord Genwell, Governor from 1898-1903 initiated changes, entrusted the task to Guy F. Laking, Keeper of the King's Armoury in the Royal Household. No better man could have been chosen for the purpose. Laking spent some time in Malta, studied the Armoury and made the first catalogue. He considered that the exhibition prepared under Merchant misleading and grotesque, that it was for the "edification of the few and amusement of the many". The gallery was rebuilt. The slender columns which proved to be too weak were removed, and a new ceiling of steel girders filled in with flat blocks of stone was constructed. After scrupulous selection Laking chose nearly 500 specimens of arms and armour, which were, in his opinion, worthy of being placed in the middle of the Gallery, hung on big wooden screens or placed in the show-cases. Those objects were fully described in his catalogue. Willy-nilly he had to put the rest of the vast collection in the panoplies as they were. Even the old dummies were saved. Laking displayed some portraits of Grand Masters on the screen among the armours, giving a

strong historical accent. The objects of great interest were really much closer to the visitors, and correct labels were added. On the whole, however, the new exposition was far from perfect, its cardinal sin being the clumsiness of both gigantic wooden screens (see Plates IV and V).

It may be noted that each stage of the Armoury's history lasted about 50 years. In fact, the work of Laking, with small additions and alterations survived until World War II.

On the 7th April 1942, almost two years after the entry of Italy into the war, bombs dropped by enemy aircraft damaged the Gallery in which the exhibits were still displayed. All the specimens which could be easily moved were then hurriedly transferred to the basement of the Magisterial Palace and to the Inquisitor's Palace at Ghajn il Kbir. Owing to the unfavourable conditions while in storage, some of the material sustained damage.

After the cessation of hostilities the Gallery wall (facing the Merchant str.) was repaired and a new exhibition opened in 1948. The screens installed by Laking were not returned to the Gallery. Outstanding pieces of arms were put in the show-cases, some were new, which were imported from England in 1957.

C. THE PRESENT CONDITION OF THE ARMOURY

Locale

The characteristic features of the Gallery have not been altered. The limestone floor has remained as it was, the ceiling of steel and stone is exposed. Large iron chandeliers are still the source of artificial light.

The major part of the specimens belonging to the Armoury are distributed in show-cases, on the old dummies and racks, on the floor and on the walls.

It should be mentioned, however, that some objects of the Armoury are located outside the Gallery, in the :

- (a) modern staircase leading to the Armoury,
 - (b) three corridors of the Magisterial Palace,
 - (c) Verdala Palace,
 - (d) San Anton Palace
- and in the (e) Auberge d'Aragon.

There are also brass cannons belonging to the Armoury :

- (a) Palace Square (4 pieces),
 - (b) in front of St. John Co-Cathedral (2 pieces),
 - (c) in front of the Auberge de Castille (2 pieces),
 - (d) in the Great Siege Place (2 pieces)
- and (e) in front of the Maglia Gardens (1 piece).

Objects

The objects which have been included in a complete inventory may be divided into the following groups :

1. Representative and complete suits of armour (from about 1550-1650), of greatest historic and artistic value, traditionally identified with Grand Masters or Grand Commanders of the Order including :
 - (a) suit of armour, German, about 1550, supposed to be for Grand Master Martin Garzes (1596-1601),
 - (b) suit of armour, Milanese, about 1580, which belonged to Grand Commander Jean-Jacques de Verdelain (1590-1673),
 - (c) suit of halfarmour, Milanese (Pompeo della Chiesa style), about 1580, traditionally but erroneously identified with Grand Master Jean de la Valette,
 - (d) suit of armour, Milanese, about 1610, which belonged to Grand Master Alof de Wignacourt (1601-1622),
 - (e) portions of fortress armour, French (?), about 1610, identified with Grand Master Alof de Wignacourt.
2. Suits of regular battle half-armour and cuirassier armour, and helmets, chiefly Italian, but also French, Spanish and German (from about 1550-1650)
3. Various pieces of armour and helmets with conventional etched decorations chiefly Italian style (from about 1550-1650).
4. Fortress or siege pieces of armour and helmets, extremely heavy, probably of Maltese manufacture (from about 1560-1630).
5. Swords, rapiers, daggers, staff-weapons, guns and powder flasks, of various origins -from about 1550-1650-.
6. Small swords, bayonets, staff-weapons and guns, of various origins (from about 1700-1760).
7. Pieces of ordnance (from the 15th-18th centuries).
8. Turkish and Arab arms and armour, shields, sabres, fire-arms and cannon balls (chiefly from the 16th century), possibly trophies.
9. Modern armament from World War I and World War II, cannons, torpedos, car, aircraft.
10. Various pieces of short series or single pieces, decorative objects completing the display (painted shields of papier-maché, etc..).

Display

The present display, as arranged about 1948, has been based upon traditional elements, and ideas of the previous history of the Armoury. Using Laking's system

the most remarkable suits of armour and the most precious separate pieces have been placed in the show-cases in the middle of the Gallery, but some of them were also distributed among the show-cases standing against the walls. Armoured dummies, still holding round papier-maché shields are on display. The system of panoplies survived, but display is based on decorative motifs. Many pieces of arms are used as architectural decoration : such grouping rapier blades in Maltese crosses, dentiform friezes round the window openings made of bayonets, portal friezes of morions? Used in ornamental assemblies the weapons lose their primary meaning and character. The panoplies are composed of very different and peculiar weapons set side by side mixing rare and exciting specimens with the most common and uninteresting pieces. Strange maces of cavemen, fakes constructed by an unknown contributor, are also to be seen. At the same time the most superb suits of armour suffer from being cramped together in the cases, their unmatched grandeur impalpable to the visitor.

Labels, guide-books, attendance and guide service

The quantity and the form of explanatory labels leave much to be desired. Some of them are in the same shape as written by Laking almost 70 years ago. Whole groups of objects lack any label. A solitary visitor can be easily misled or even lost in the jungle of mixed objects. During their work in the Armoury, visitors often asked consultants questions and they had the opportunity to test public opinion in loco.

The catalogue by Laking is not available (its second hand bookshop price amounts to £15). Some general remarks on the Armoury, based largely on Laking's opinions, are to be found in the guide-book by Edward Sammut: "The palace of the Grand Masters in Valletta and its Art Treasures", Malta 1951 (reprinted 1952, 1959, 1960 and 1967). The same author published an article entitled "The Valletta Armoury and a letter from Sir Guy Laking" in "Scientia", vol. XXV, no.1, 1959, pp.3-16.

A few slides and post cards of views of the Armoury and particular objects are for sale in the museum shop. There are some references to the Valletta Armoury collection in basic books concerning ancient arms and armour (e.g. in G.F. Laking, A Record of European Arms and Armour through Seven Centuries, London 1922, and in James Mann, European Arms and Armour, Wallace Collection Catalogues, two volumes, London 1962), but in fact the Armoury is not adequately described in the world literature.

The attendance of visitors amounts 30,000 a year, the admission being 2 sh. Children 1 sh., school-pupils - free. A regular guide service is at the disposal of visitors.

D. THE PRESENT STATE OF CONSERVATION AND RECOMMENDATIONS TO PRESERVE THE
ARMS AND ARMOUR IN THE COLLECTION

Objects

All objects, except for those hanging on the walls or studied by photographic means, have had their condition examined. Observations were made about the environment surrounding the objects. The conclusions may be summarized as follows :

The Armoury is situated in the first floor of a separate wing of the Magisterial Palace. The Gallery has a rather dry microclimate but it is not isolated from external atmospheric influences. The huge windows are not airtight enough to prevent the invasion of dust and humidity. Another source of dust is the limestone floor. The blocks of stone do not fit closely, the mortar which filled the joints has crumbled away. Dust accumulates in the cracks and, disturbed by visitors subsequently settles on the surface of exhibits together with dust coming from outside. Dust on metal surfaces facilitates condensation of humidity and gives rise to corrosion. On the other hand, frequent dusting of the objects damages the protective coat of varnish.

The marine climate of Valletta are not favourable for the preservation of metallic objects. Humidity and salt in the air, differences of diurnal temperatures, winds, especially the hot sirocco from the coast of Africa coming laden with moist vapours - the condensation on the cool metal surfaces, in the presence of salt (Na Cl) as an electrolyte leads to corrosion. The summer maximum temperature reaches 71.6°F., high enough to crack non-elastic types of varnishes which cannot adapt to the expansion of warmed metal.

In spite of this difficult situation the state of exhibits in the Armoury is on the whole good, in many cases - very good. It is undoubtedly due to the armourers in charge, who had chosen a method effective enough against metal corrosion : by coating all objects with a thick layer of boat varnish. It should be stressed that the coat was laid as a rule on the entire object : its metallic and non-metallic parts. It has been proved that the varnish put on the correctly cleaned metal surface really prevented any destruction. Unfortunately, sometimes it has been applied on rusty surfaces. In some instances when the film was too thin it has cracked and gave rise to rust. Many pieces have never been dismantled and many old and new sites of rust remain under separate plates and their junctions. The inner sides of many objects, especially of the helmets, breastplates, backplates and of the other parts of armour were not cleaned and they show thick layers of rust, old fat and dust.

Traces of old repairs and preservation treatments may be found in some specimens. We know that during the 15th-18th centuries, sand, oil and organic fat were used for that purpose. While battle damages were corrected by skilled armourers. There are also some striking examples of 19th

century conservation methods. The extremely interesting "fortress" armour of Aloy de Wignacourt has been preserved partly in browned and gilded steel (helmet, shoulderpieces and collar) and partly in bright steel (breastplate, backplate, buff, shield), the latter portions being radically cleaned by an ignorant but hard working armourer.

According to the state of conservation the stock of the Armoury may be divided in several groups :

1. Objects in excellent state, e.g. suit of armour attributed to Grand Commander J.J. de Verdelain, most of the helmets of the morion type, most of the etched pieces of armour, also swords, rapiers, daggers and staff-weapons, dated chiefly on the second half of the 16th century. They do not show any traces of rust, but their inner sides should be cleaned.
2. Objects with browned and gilded surfaces covered with layers of old rust mixed with layers of protective film. They make the most difficult problem for conservation as the corrosion must be removed very carefully, saving the original brown tint and gilt decoration.
3. Objects of bright steel totally covered by layers of old rust and protective films causing a complete change of their appearance. Radical treatment is advisable in order to return them to their original state. This is a small group of specimens.
4. Objects of bright steel partly attacked by rust. They need cleaning with usual methods indicated below. This is the largest group, especially from among the exhibits hanging on walls.

As has been mentioned above, boat varnish had saved most of the specimens of the Armoury, nevertheless this kind of coating cannot be recommended. The aesthetic value of the objects is changed by its unpleasant luster and unnatural yellowish tint. Besides, the varnished surface can be easily scratched causing ugly white streaks.

The objects combined of metal and wood, with some leather or textile parts, as fire-arms, sabres with scabbards, staff-weapons, were also examined. In many cases the wooden parts showed traces of woodworm (coleoptera) attacks. Those insects seek food in wooden parts of show-cases, and of the racks and planks forming the base of panoplies as well. The destruction caused by woodworms is very considerable.

There is also a small group of textile exhibits, namely the banners coming from the 19th century. Most of them are damaged with the silk broken and with large portions missing. The remainder, however, are properly preserved by putting them between two layers of tulle and delicately sewn. Some reservations may be made about the system of displaying banners : they are hanged diagonally which causes the drapery to fold which is not very favourable for preservation.

There is a small group of armour with textile and leather lining in very poor condition. This include portions of the brigantine of the 16th century, and the garde-rein (rump defence) of the gilded Wignacourt armour (early 17th century). They are extremely rare items with high historic and artistic values. It would be advisable to send them abroad to one of the more specialised workshops for treatment.

Conservation workshop

The workshop is located close to the Gallery, in three small rooms. Day and electric lights, electricity, water and gas heating are available. The locale is good enough to continue serving as a conservation workshop providing some necessary equipment can be added. There are two technical labourers in the workshop. They have no professional training but long experience in their work. Mr. Carmel Azzopardi has been busy in that workshop for 24 years, passing successively from the status of pupil, assistant, and to the armourer. Mr. Joseph Kuereb, assistant armourer has been working for 10 years, formerly busy as an armourer at small Arms Section Dockyard Naval Base. The equipment of the workshop is considered to be highly unsatisfactory.

Consultant's activities in the conservation

Workshop

The improvement of methods applied in the workshop was started by fitting it with indispensable tools and materials. The local situation of supply and the normal efficiency of a two man crew were taken into consideration.

A list of the basic equipment and materials for the conservation workshop has been presented to the Director:

A. Equipment and materials for cleaning, rust-removing and repairing:

1. Two speed (1500 and 3000 r.p.m.) pedestal polisher 8" with two long spindels for a wire scratch brush and a calico polishing wheel with brushes of fine wire, bristle and cloth polishing wheels.
2. Distilled water apparatus.
3. Small electric bench grinder for preparing and sharpening of tools.
4. Bench drill stand, complete with 2-speed drill, chuck 1/2".
5. Equipment for soldering (3 sizes of soldering irons).
6. Bench vises (4 of medium size, rotational, 1 of large size).
7. Bench tinner's shears.
8. Drawing lamps with the 250 W.I.R. bulbs (2 pieces).

9. Plastic tanks (buckets, tubs, etc..)
10. Metalworker's tools.
11. Hand brushes of fine steel and brass wire.
12. Hand bristle brushes, hard and soft.
13. Hand goat's hair brushes.
14. Steel wool.
15. Abrasive cloth no. 000 and no. 00.
16. Metallurgical polishing powder (extra fine emery or carborundum).
17. Brass, copper and iron wire, different gauges.
18. Brass, copper and iron rivets.
19. Brass and copper sheet (1 mm thick).
20. Very thin zinc or aluminium sheet.
21. Caustic soda.
22. Rust remover (based upon phosphoric acid) in liquid.
23. Rust remover (jelly - Holt Ltd, New Addington, Surrey).
24. Toluene.
25. White spirit.
26. Pure gasoline.
27. Acetone.
28. Denatured alcohol.
29. Paraffine oil.

B. Materials for protective finishing:

1. Bleached beeswax.
2. Paraffine wax.

3. Acrylic varnish, Acryloid B 72, crystalline or in liquid (Ienning chemicals Ltd, 26 Bedford Row, London W.C. 1).

C. Other equipment :

1. Hygrometer
2. Carbon-dioxide extinguishers (3)
3. Balance.

Some tools and materials have been purchased in shops in Valletta shops on the consultant's advice, some orders have been sent to London. Costs of distillation and buffing machines appear so high that they will have to be bought in the future. The wire brushes used up to now in the workshop are much too hard and must be replaced by soft ones.

Abrasive cloth (n0.3) which is now in use, is too coarse and can be very dangerous for metal surfaces.

The methods applied in the workshop were fully investigated. In brief, they were as follows : no attempt is made at dismantling, external surfaces are cleaned, old lacquer removed with white spirit or denatured alcohol, and the surface covered with machine oil and kept under it for one or two weeks. Then the oil was removed and rusty spots taken out with abrasive cloth no.3. Finally the object was covered by brushing on a thick layer of boat varnish "Duresco Aspinall", London. They also used crystal paper varnish, a product of British Paints, Ltd, but it proved to be very hard to remove for the second time, and was rejected. They tried also "Lacquer for metal antiquities (celulose nitrate), Frigelen", but it was found nonresistant and discarded.

The following instructions for the reorganization of the workshop were given in order to improve the processing and to ensure careful of work.

Room no.1 of the workshop will be for receiving objects. They are to be disassembled here and cleaned of dust and old layers of protective materials removed by means of white spirit, acetone, denatured alcohol, toluene or white gasoline. Rust will also be removed here. In the future the buffing machine, electric drill, grinder and equipment for soldering should be installed here.

Room no.2 is intended to dry objects under infra red lamps, after they have been washed. When warm and dry, they will be covered with protective film.

Room no.3 is equipped with running water and a gas heater. The distillation apparatus should be located here. After reduction with zinc and caustic soda an object is to be washed in distilled water. Final assembly of parts of an object after treatment will take place in this room.

A large workshop table with two bench vises with their jaws covered with copper sheet is needed.

Note : The stone floors in all three rooms of the workshop must be covered with rubber tile, all unnecessary equipment (as marble shelves, refrigerators, etc..) must be removed.

Both armourers have been shown how to carry out the following typical treatment :

1. Removing of old protective layers by brushes and such solvents as acetone, denatured alcohol, toluene and white gasoline.
2. Cleaning of tin gilded or undecorated object with liquid rust remover, steel wool and fine wire brushes.
3. Removing of separate rust spots on an well preserved objects by means of jellied rust remover.
4. Reduction in zinc and caustic soda of an object without ornaments or gilt, covered with thick layers of old old rust.
5. Washing in distilled water after the reduction in zinc and caustic soda to remove soluble chlorides.
6. Drying of an object with infra red lamps.
7. Mechanical finishing of a cleaned object : brushing, polishing with fine abrasive cloth no. 00 or emery powder and oil.
8. Mechanical removal of rust from blued or russeted (browned) surfaces of steel, or from gilded surfaces. Careful picking out the seats of rust with hard wooden sticks, brushing with bristle brush, polishing with cloth.
9. Covering steel surfaces with a film of bleached wax with 10 % addition of paraffine wax. Warming wax and paraffine under an infra red lamp and dissolving them in pure gasoline to obtain a jelly. Applying the wax with a brush on an object warmed under the lamp ; cooling of the object ; polishing with soft cloth to obtain a smooth and dry coat.
10. Covering with a protective film of the synthetic varnish, Acryloid B 72. Application of varnish, dissolved in toluene, with a flat brush in a thin layer on a carefully cleaned (without traces of grease) object ; drying the object in a dust free place.

Remarks concerning the recommended protective coatings :

Two protective coatings have been recommended, beeswax with small addition of paraffine wax, and synthetic varnish from the acryloid group.

Beeswax is used as one of the most effective protective coats for metal objects in many of the world's outstanding museums, as the Metropolitan Museum of Art, New York, Musée de l'Armée, Paris, and Polish Army Museum, Warsaw. The material is easy to handle and available everywhere. The addition of 10 % of paraffine wax hardens it and increases resistance in summer seasons. It may also be used to impregnate and strengthen wooden portions of objects damaged by worms.

Impregnation may be carried out by simply placing pieces of wax on the surface of the wood and heating it with an infra red lamp, the surplus is removed with white spirit.

Acryloid B 72 is a copolymer of ethyl methacrylate and methyl acrylate with an extremely low tendency to cross-link. It is soluble in toluene and forms films which remain strong, colourless, and soluble for very long periods of time. This varnish has been used in conservation in many museum laboratories.

Further information on kinds of protective coats may be found in the following publications :

1. H.J. Plenderleith, The Conservation of Antiquities and Works of Art, London, 1957.
2. The International Institute for Conservation of Historic and Artistic Works, Journal: "Studies in Conservation" and "Abstracts of the Rome Conference", September 1961.
3. The Conservation of Cultural Property, Unesco, 1968, pp.237-249;305-335.

It was impossible to carry out necessary tests to prove which coating would be better for local use within the duration of the mission. Such tests should last at least half a year and include hot summer and rainy winter seasons. In this connection testing of two similar specimens (for example of two breastplates of the same period and make) is recommended, by applying on one beeswax and on the other - acryloid B 72, and to hang them side by side on one of the Armoury walls. Both exhibits should be carefully observed (no touching allowed), and the results written down monthly. This experiment will permit choosing the best medium for local treatment

Final recommendations

All windows in the Gallery should be checked and fitted to stop infiltration of dust and moisture. The limestone floor should be repaired: the joints between stones filled with new cement, and the surface of the floor impregnated with boiled oil. According to Director Zammit such impregnation was used during the time of the Knights. Floor should be cleaned daily by industrial models of vacuum cleaners on wheels. Two such cleaners should be bought for the Armoury. For dusting the exhibits, hand brushes of goat's hair should be used.

The objects protected by the new methods (with beeswax or synthetic varnish) may be touched or handled in cotton gloves. Pairs of such gloves should always be at the disposal of the armourers.

The armourers should start with cleaning and protecting the specimens as soon as possible. It is obvious that the work will take several years, and it must be carried out irrespective of any changes to be made in display. It would be wise to begin with typical and simple objects, such as battle morions and regular suits of half-armour. After experience is gained in the new methods the more complicated problems with the ornamental and composite pieces can then be tackled.

Well cleaned and protected objects in the dust free Gallery may be exposed without show-cases which will enhance the attraction of the Armoury.

E. PLAN FOR THE REORGANIZATION OF THE ARMOURY

This plan was not included in the consultants' contracts but it has been taken into consideration and enclosed herewith at the request of the local Authorities.

The consultants consider that the reorganization of the Armoury should be based upon following principles :

1. Gallery architecture

No substantial alterations of appearance of the Gallery's architecture are recommended. A general improvement would include : plastering and painting (white colour) of the roof, painting the panels but changing the tint for a cream-yellow and the borders to a simple brown band ; repairing the floor. Retain the old iron chandeliers, but introduce some hidden spotlights.

2. Display

The most important historical aspects should be picked out, sustained or transformed according to contemporary historical knowledge and vision, current ideas and prevailing artistic canons. The close relation of the Armoury with the history of the Order of St. John of Jerusalem should be stressed. National Maltese aspects of the collection, so far neglected, should also be high lighted. For example, a large group of arms and armour, especially of the fortress type, made locally possibly by Maltese armourers and black smiths can be featured.

The time span of the exhibition should cover the period between 1530-1798, hence scrupulous selection of objects will be necessary. All weapons of the 19th and 20th century must be excluded, as well as all fakes and old complementary materials, such as the papier maché shields.

The objects which have been removed must not be destroyed but stored under suitable conditions. The armaments of both World Wars should be placed in a special War Memorial in Malta, for which St. James' Cavalier, Valletta, is proposed.

General plan for the rearrangement of the Armoury

According to the opinion of conservation specialists, well protected (varnished) arms and armours may be displayed in the most attractive and modern way without show-cases. Thus in new displays the show-cases will be restricted to a minimum.

The new exhibition should accentuate the power and glory of the Order, and at the same time to show original groups of arms and armours to be found only in this place in such quantities. In other words, the key problem of rearranging lies in a fortunate combination of "armeria di rispetto" and arsenal.

A large platform about 16" high of wood, covered with crimson textile, should be constructed in the middle of the Gallery (crimson being the symbol of nobility). A detachment of about 100 soldiers in morion and half-armour, staff-weapons and guns at hand, rapiers attached, is to be placed in marching order on the platform. The detachment will be preceded by suits of armour of the Grand Masters and Grand Commanders. It would be desirable to put the Wignacourt armour on a model horse with the chanfron piece attached. In front of him an armoured page should carry the shield of the Grand Master and a sword. The setting of the central group should be based on illustrations dating from the time of the Grand Siege (1565) and the following decades. First of all the murals of Mateo Perez de Alesio in the halls of the Magisterial Palace may be studied and compared.

The basic problem of the success in the setting of the armoured group lies in the correct design and setting of the dummies. They should be given a naturalistic style but in modern sense. Their faces (possibly two or three types, i.e. of a younger and of an older man, bearded and beardless) must be modelled and painted, based on ancient pictures and portraits. The visible portions of the dummies, necks, hands and legs should be also formed and painted in imitation of historic costumes from about 1565-1580, the legs in marching position, arms movable, heads detachable.

It is worth mentioning that in the very attractive next exposition of the Musée de l'Armée in Paris many naturalistic dummies have been used.

The narrow front wall (from the South-West) should be reserved exclusively for Turkish arms and armour. This idea lay behind the former exhibition but was never carried out logically, one of its reflections being the painting with the Dragut's death, a dramatic episode of the Great Siege, which is unfortunately a painting of very mediocre artistic value. Two special dummies should be designed for Turkish helmets and armours. They are to be put on the small platform covered with green (conventional sacred colour of Islam), and between them the cannon balls preserved from the Great Siege, Turkish and Arab scimitars and guns, and other oriental weapons, shields and pieces of armour may be also hanged on the wall.

The narrow back wall (from the North-East) will represent the idea of defense. Here the collection of the heavy fortress helmets and armours of Maltese make must be fully displayed. Also a small podium should be constructed covered in cream-yellow colour cloth symbolizing the Malta limestone, the material of all forts, auberges and other edifices of the island. Cannon, guns and balls will be put on the platform. The painted emblems of the Eight Langues of the Order should be hanged on the wall.

On the long walls of the Gallery, at the both sides, a few carefully chosen new panoplies womm be assembled. Among them should be the coat-of-arms of all (28) Grand Masters, from 1530 until 1798, to be painted on wooden shields. The entire mass of regular arms and armour, in homogeneous groups, such as helmets, breast-plates, swords, rapiers, pikes, guns, are to be placed on racks and stands of wood against the lower parts of the wall, at both sides. Possibly, but not necessarily, some chosen exhibits of small size can be placed in flat show-cases along the wall.

New labels based on the revised identification and attributions should be printed in brown ink on creamy white paper.

A new comprehensive and illustrated catalogue should be prepared, as well as a brief guidebook for the use of visitors.



1. Palace Armoury, Valletta, about 1850.

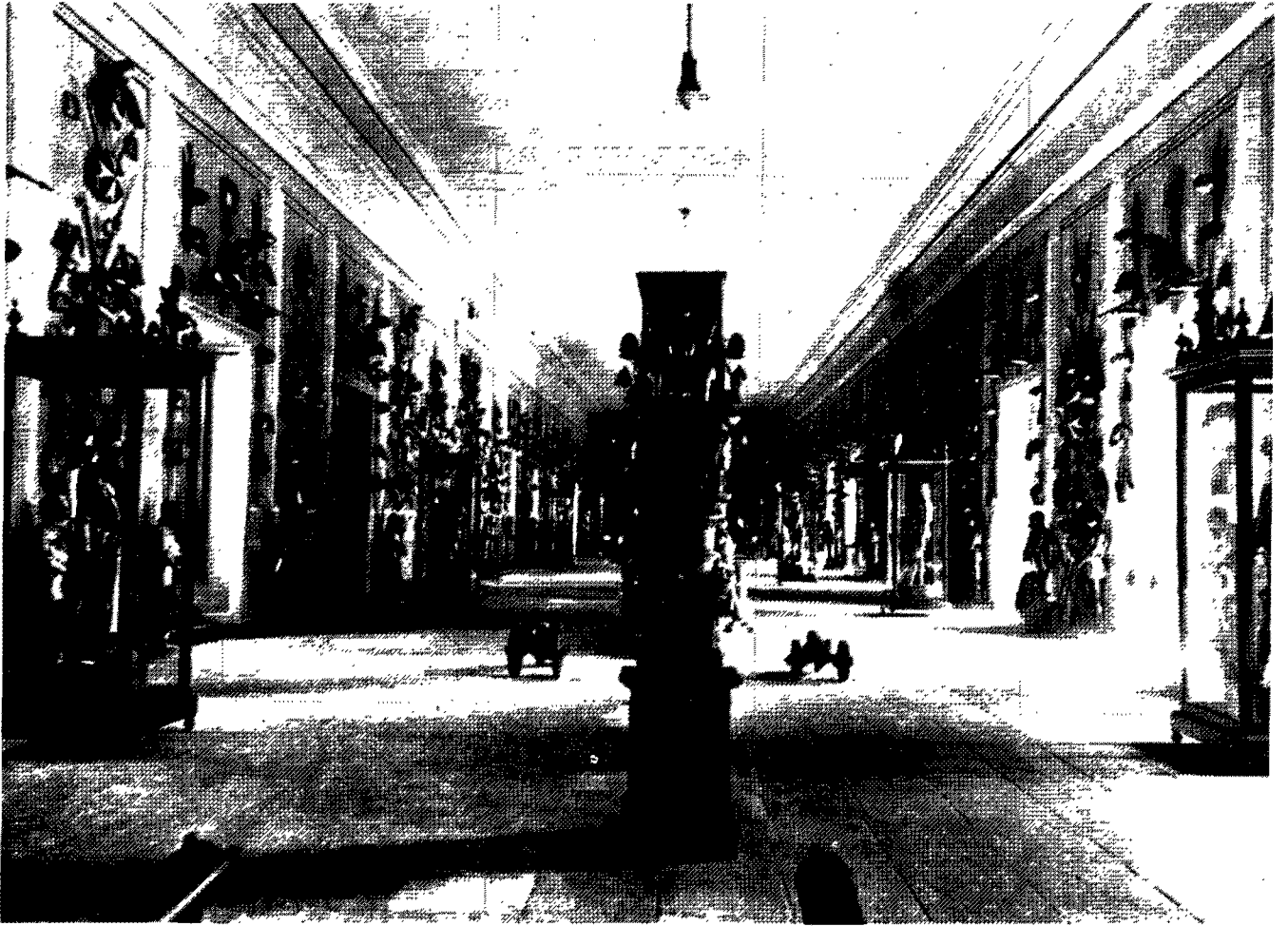


2. Palace Armoury, Valletta, arranged under
Sir Gaspard Le Merchant, Governor, 1858-1864.

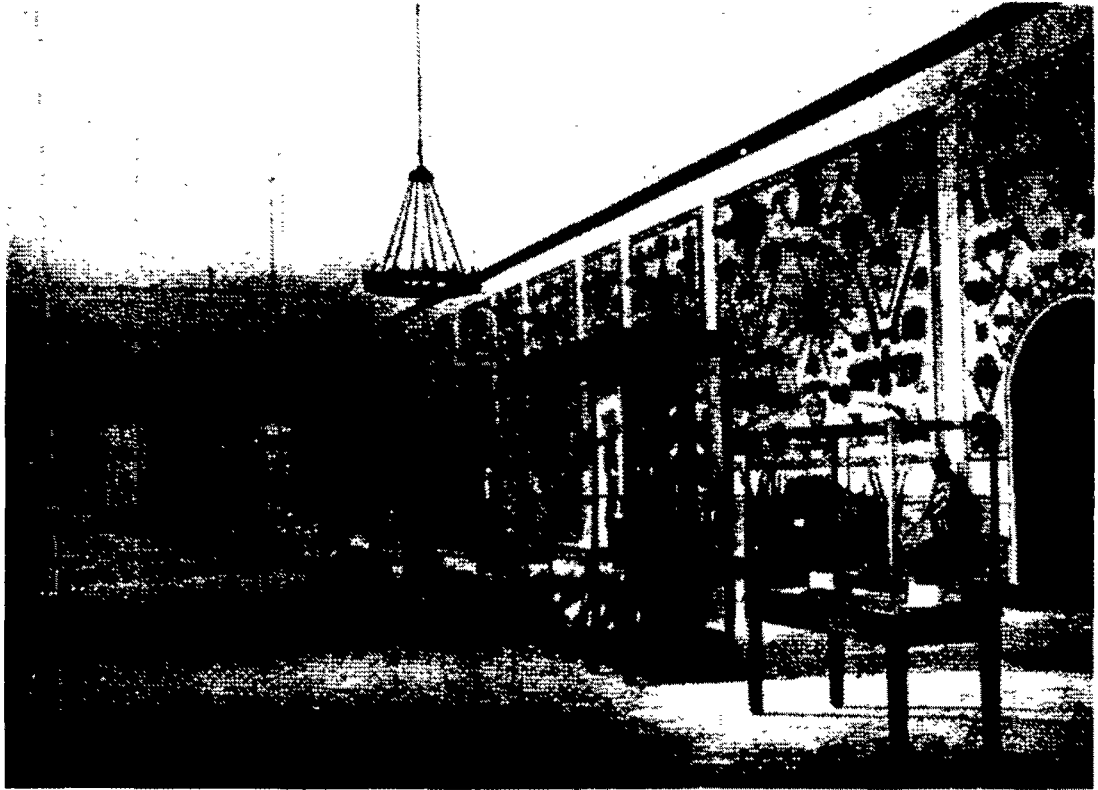
3. Palace Armoury, Valletta, arranged under
Sir Gaspard Le Merchant, Governor, 1858-1864.



4. Palace Armoury, Valletta, arranged by
Guy F. Laking, in 1900.



5. Palace Armoury, Valletta, arranged by
Guy F. Laking, in 1900.



6. Palace Armoury, Valletta state from 1948-1969.

7. Palace Armoury, Valletta state from 1948-1969.

