

COLORS, GILDING AND PAINTED MOTIFS IN PERSEPOLIS:
APPROACHING THE POLYCHROMY OF ACHAEMENID PERSIAN
ARCHITECTURAL SCULPTURE, C. 520-330 BCE

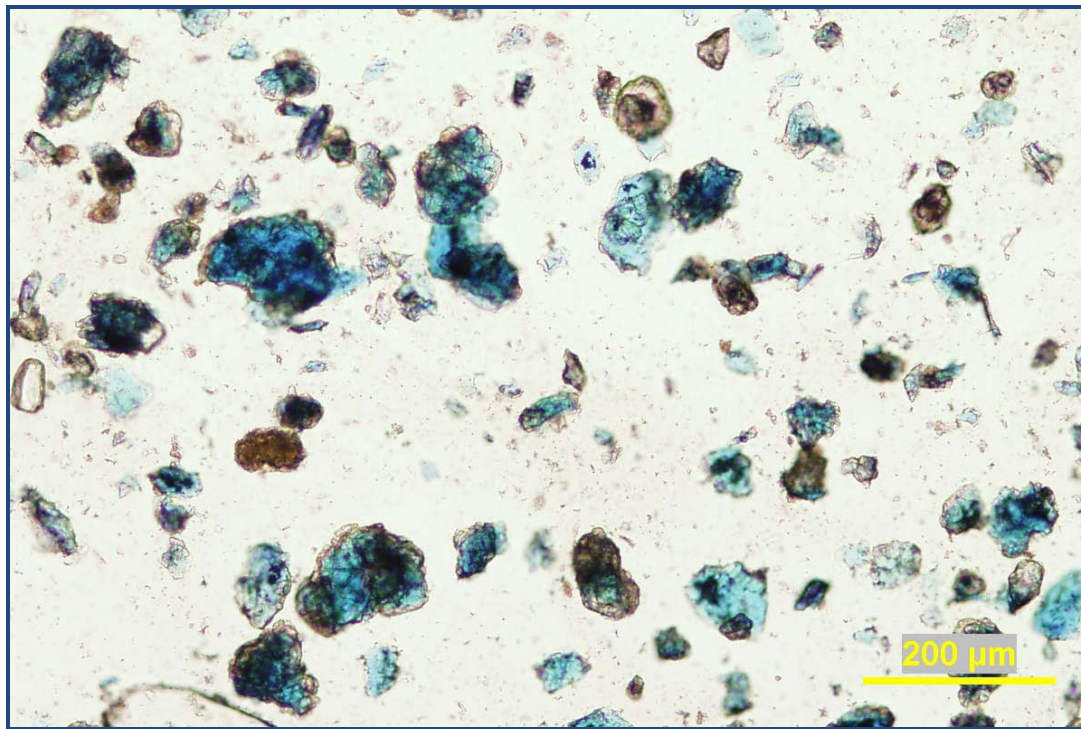
by

Alexander Nagel

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Doctoral Committee:

Professor Margaret C. Root, Co-Chair
Professor Elaine K. Gazda, Co-Chair
Professor Carla M. Sinopoli
Professor Christopher J. Ratté
Professor Kamyar Abdi



Through the Lens:
Blue Pigment from a Squeeze of the Cuneiform Inscriptions on the Façade
of the Tomb of Darius I († 486 BCE) at Naqsh-e Rostam in Iran
(Ernst Herzfeld Archives, Freer Gallery of Art and Arthur M. Sackler Gallery,
Smithsonian Institution, Washington, DC)

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For I., L. and W. Nagel

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*

* *

PREFACE

I met David Batchelor, author of *Chromophobia* (2000) on a rainy Saturday afternoon in London, November 2008. This is not where my journey to Iran started, but it was an important stop on the way to finishing this dissertation. We met at an optician's office, funnily enough, and afterward we went for coffee. That evening Batchelor spoke about his idea of writing a book about the *Shining*, and while moving his car – due to the expensive parking costs in Central London – he told me about his experience during a recent stay in Hong Kong and Shanghai, two cities, where the colorful neon advertisements on the skyline of skyscrapers face Communist China. This conversation caused me to remember my own experience of first being able to see the colorful Western advertisements in the western parts of Berlin, post-wall in 1989. I had grown up in Berlin; myself being born on the other, gray side of the curtain, as they would say. Colors, politics and communications are intimately connected, and as one reviewer of *Chromophobia* had put it, “today ... grey, black and off-white are the colors of seriousness. ... If you travel the world over you will never find another culture that immediately looks as dull as Western culture. Can you imagine a Mexican celebration or an Indian temple interior rendered in almond? The thought is as crazy as an American bank whose color is pink. Because of deep-rooted cultural color biases, these things will never happen.” *Chromophobia* became one tremendous source of inspiration for writing this dissertation.

Around the same time, I discovered for myself that the interface of archaeology, anthropology, science and conservation studies is a truly exciting place. If I was able to leave the sometimes dull business territory of the grey, black and white in the academic

world, and I would break down academic boundaries, it was due to a number of very supportive colleagues from the University of Michigan, in Iran and from nearly all over the globe, some of these referred to above. A wonderfully diverse group, they had in common a desire to help to reconstruct aspects of the history of approaching a polychrome Persepolis. Knowledge about ancient sculptural polychromy is still imperfect, much more so about Persepolis and the polychromy of Achaemenid sculpture, and those who have parts of this knowledge are found in widely dispersed fields and institutions. When I began to look through the microscope at the monuments at Persepolis, I realized that pigments are only one aspect of a larger set that needs to be discussed in the relationship with the polychromy of the site.

In the opening of his history the eighth century writer Nennius claimed to “have made a heap of all (he) could find.” One could never do justice in any thesis or book to a site so breathtaking and rich in monuments and cultural memory like Persepolis, but I hope that through these pages the reader will at least get an idea of the significance of the embellishments that once hold sway through the palaces of Persepolis. Or as Friedrich Krefter (1898-1995), who excavated at Persepolis would have phrased it: “And yet there is no doubt that a sea of colors once waved through the palaces of Persepolis.” (Krefter 1966: 440). It is my hope that this thesis will serve as a source of inspiration for yet another center of the world, both ancient and modern, and raise lines of inquiry to a still largely undiscovered aspect of the ancient Near East. I also hope that this dissertation will be of some use for those interested and will perhaps seen as an invitation to enter into the discourse of polychromy in Persepolis, to provide some guidance for more work on the role of polychromy in Achaemenid Persia in years to come. One day we may prove the

words of Bernard of Clairvaux (1090-1153) wrong: “It was religion who formed the colors. It was from religion that wiped the colors away.”

At first glance, the endless repetitions of tribute bearers and soldiers depicted on the monumental reliefs in Persepolis looked the same; an endless repetition of gray stone carvings. I realized much later that the monuments on the site including the façades must have been a visual bombshell. Over the course of my study I became aware that pigments and colorants must have played a significant role in the ancient environment. At the end of the day, there was the sunset, there were flowers and gardens that filled Persepolis, Susa and all the other Achaemenid residences and, there were perhaps parrots, as the ancient authors have described it, and shouting peacocks with beautiful plumage, flying birds and butterflies too, helping to shade the individual colors already applied to the buildings, inside and outside. As in all other Achaemenid residences, all polychrome embellishments were brought together for one aim, to form a shining palace complex and a site with colors that would become, as I hope to prove in my dissertation, not only an impressive monument of outstanding character and visual seductiveness.

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ABSTRACT

COLORS, GILDING AND PAINTED MOTIFS IN PERSEPOLIS: APPROACHING THE POLYCHROMY OF ACHAEMENID PERSIAN ARCHITECTURAL SCULPTURE, C. 520-330 BCE

Alexander Nagel

Co-Chairs: Margaret Cool Root and Elaine K. Gazda

This dissertation is about aspects of polychromy preserved on the monuments of the Achaemenid palaces at Persepolis and Susa, in Iran. It first offers an historiographical study of modern engagements with aspects of colors and gilding in the ancient Near East, especially from the nineteenth century onward. It then provides a documentary and interpretive analysis of the originally intended motifs in applied paints and embellishments on the stone monuments of the imperial centers of Persepolis and Susa. My research incorporates data based on three study seasons at the site of Persepolis (from 2007 to 2009), one study season on the site of Susa (2008), work in museum collections (including the National Museum of Iran, Tehran; the Vorderasiatisches Museum, Berlin; Oriental Institute Museum, University of Chicago) and archives (especially those of the Freer Gallery of Art and Arthur M. Sackler Gallery of Art, Washington DC, and the Oriental Institute, Chicago).

The monuments of Persepolis have been designated a UNESCO world cultural heritage site since 1979. The history of its excavations and of restoration/conservation on its monuments reveals how well-intended efforts have often eliminated traces of the paint on

the surface of the monuments. The empirical physical data assembled here (combined with substantial integration of archival documents previously undiscovered) allow Persepolis to emerge as an important type-site for issues in polychromies of empire—created in this instance in an international age of travelling artisans working on projects imbued with high programmatic intent as conveyors of ideological messages. This dissertation is, then, ultimately about materialities and visual values at the Achaemenid court. Achaemenid imperial texts carved on rock reliefs, palaces, and structural walls were “animated” by luminous colors. So too, the sculptural renderings of palatial installations, with complex metaphorically charged iconographies, must now be understood as intimately enhanced in meaning by color and gilding.

The project of this dissertation opens up possibilities for a new collaborative era of an archaeology of polychromy. It also serves as a call for increased international efforts to pursue strategies of documentation, preservation, and conservation that can adequately address the significance of an important aspect of the material record.

CHAPTER 1

COLORS FIRST: AN INTRODUCTION

Polychromy Studies and Achaemenid Persia: Preliminary Remarks

The past two decades of scholarship have seen major multi-disciplinary breakthroughs in integrating studies of color in ancient architectural and sculptural environments as an inseparable element of appearance and meaning. It has been accepted that color is an important dimension to consider in material culture studies. Color is part of the sensation of things: color and its material components evoke agency (see, e.g., Bille and Flohr Sørensen 2007). Within the last decade alone, the *Cambridge Archaeological Journal* devoted a special section of one issue to the subject of color (Gage et al. 1999), and in 2002, a major anthology on color in anthropological research appeared, offering analyses of great relevance to studies of the role of color in pre-modern societies (Jones and MacGregor 2002 ; Review: Fridell Anter 2008). At the same time, David Batchelor's inspiring *Chromophobia* (2000) focused attention on historiographic issues critical to the project here, by contemplating the complex Orientalizing trends that have shaped current western approaches to a "white" antiquity in which color was a sign of eastern degeneracy.

This scholarship has occurred within and built upon a fertile environment of empirical research on vestigial color on ancient North African, Greek, and Italian architectural and sculptural finishes, with far less systematic and wide-ranging exploration of the abundance of material available for the ancient Middle East (see below

for more discussion of these trends). Lately, cross-cultural symposia and workshops on paint on pre-modern sculptures and architecture have intensified the energy of this field of inquiry (e.g., Davies 2001; Brinkmann et al. 2010; Jockey, forthcoming). Where do we go from here?

This dissertation offers a case study in an approach to the challenges and opportunities of exploring polychromy in ancient Near Eastern architecture and architectural sculpture. It focuses on the site of Persepolis in southwestern Iran—a ceremonial and administrative center in the very heart of the Achaemenid Persian Empire between 520 and 330 BCE (**Figures 1.1-2, 1.4**), and also includes (where the limitations of evidence permit) notions of polychromy at Achaemenid Naqsh-e Rostam, and Achaemenid Susa (**Figures 1.3, 1.5**). Monumental building on the palatial complex at Persepolis – the Takht-e Jamshid – began with the reign of Darius I (the Great) in c. 520 BCE. Since 1979, Persepolis has been designated a UNESCO world cultural heritage site. Archaeological and epigraphic evidence confirms that Susa (Šuš) in Khuzestan, already a millennia old citadel of a vast number of empires, including the Elamite Empire was considerably rebuilt and furnished by Darius I and his successors (for detailed descriptions of the sites see Chapter 3 below).

Although it has been known for a long time that Achaemenid Persian architectural sculpture was painted, as was ancient Near Eastern sculpture in general, my dissertation aims to provide material with which to view practices of polychromy at these two specific, fairly well-preserved sites within the ancient Near Eastern cultural arena in a more systematic and organized way. While it is not an exhaustive treatment and not a survey of all remnants of painting in situ, and also not aimed to reconstruct the basic

character of Achaemenid Persian sculptural polychromy, it provides an opportunity to explore polychromy in a specifically *imperial* Near Eastern setting. It is a first step and attempt to promote an archaeology of paint at Persepolis, that would ultimately allow us to understand aspects of painting and gilding on Achaemenid Persian sculpture and architecture.

This research can be contextualized within the framework of the extensive research conducted over the last decades on the ideology of this empire. Scholarship by Root (1979) and others has used the program of Achaemenid palatial structures, as well as the royal textual rhetoric, as a major historical source that had efficacy as a tool shaping and reinforcing the imperial project itself. Additionally, Persepolis is now understood better and better as a *social place*, not least owing to ongoing work on the texts of the Persepolis Fortification archive tablets and the seals that ratified these imperial disbursement records in the reign of Darius I (e.g., Garrison and Root 2001; Briant, Henkelman, and Stolper eds., 2008; Root 1997; 2008b; see also below, Chapters 3 and 6). Among the many aspects revealed by the archives excavated on the Takht is the clear evidence of work crews from around the empire (and not least from Egypt) that contributed significantly to the technical background that ultimately informed the implementation of imperial designs. Thus, a study of issues and approaches to polychromy in Persepolis and Susa engages us in a interconnected world of labor traditions that inform the case at hand and also work to increase our understanding of the practices of other ancient imperial settings. Persepolis and Susa occupy a unique position as the heartland bases of the Achaemenid rulers, who were so reviled as the quintessential *barbarian* enemy in ancient classical literature and in modern Eurocentric traditions

based upon them. In this discourse, color (like many other elements of an imaginatively re-invented “Persia”) becomes a surrogate for effeminacy and degeneracy; for despotic luxury and dissolute hedonism (viz., Hall 1989, Miller 1997). Thus, approaching the polychromy in the Achaemenid Persian Empire can bring us full circle from documentary projects on the actual material remains to issues of modern (and ancient) reception.

In this dissertation I first aim to wed results from ongoing analysis of empirical data on polychromy in Persepolis with contemplations of the significance and meanings of color historically, socially/anthropologically, and within discourses of Orientalist bias and site documentation in the nineteenth and twentieth centuries. I also aim to provide a call for consideration of ways we may move forward to expand upon the evidence. For ultimately new types of investigation demand collaborative programming of the goals and methods of humanists, social scientists, and conservation scientists—of field archaeologists, anthropologists and art historians, text-based historians, museum-based professionals, and cultural heritage specialists.

Today all surviving Achaemenid monuments on the sites of Persepolis and Susa appear in shades of gray; this is the color of the stone elements of structures that were originally fleshed out with a brick superstructure which was often finished with colorful decorative glazed brick façades. Originally, the stone elements of the architecture were also embellished with bright colors as well as with gilding and applied ornamentation. Additionally, painted wood, stucco and clay were used abundantly in both sites. But such material has been poorly preserved. Vestiges of the palettes of their decorations and of the pigments that produced them are rare. Nonetheless, polychromy was a critical factor in how the monuments were meant to be perceived: it was the embellishments of

architectural surfaces, carved reliefs, and incised inscriptions that initially captured the visual attention. These features of color were apprehended from a distance and they were a considerable element of the iconography of the built environment at closer range as well. As a result of aging, weathering, the ravages of war and site-pilfering over the centuries, and of dubious methods of site documentation in the past, most of the added color is no longer visible, originally attached metal and precious stone applications are lost, and gilding is preserved in only tiny traces.

The time is ripe for this effort to continue and move forward with comprehensive investigations of Achaemenid Persian polychromy. As noted above, such a analysis is much needed to complement and enhance work on the representational iconography of the architectural sculpture that began with Root's seminal 1979 book and has proceeded in many directions since then (e.g., Root 1990a, 2003, 2007, 2008a, in press—all with rich bibliographies). Similarly, and particularly for Persepolis, important projects undertaken at the site in the 1970s to analyze the building protocols and production techniques of the architecture and sculpture of the site (e.g., Nylander 1970, 2006; Tilia 1968, 1978; Roaf 1983) now beg for attention to the issue of polychromy. It comes almost as a surprise that the polychromy of the Achaemenid environment has never been studied in relation to its impact on the iconography of the sites—be this an impact by virtue of an intended strategy for conveying ideological message or an impact born of the range of diverse receptivities to the apparition of this polychromy brought by visitors from near and far. Furthermore, the polychromy has not yet been integrated into an understanding of its place in discourse about production. That said, important ground has

been broken toward the present project (see Lerner 1971 and Tilia 1978, with details of earlier contributions in Chapters 3 and 4 below).

This dissertation is a starting point. I collate, evaluate, and integrate empirical information gleaned from preliminary data from several seasons of work on-site between 2007 and 2009, as well as from a variety of other sources. I deal with how we may best (in my view) think about the nature of the empirical data, hoping to clarify some ongoing issues that vex the study of polychromy and continue to cause problems in the effective exchange of ideas between humanists and conservation scientists in this arena. And I discuss what all this means for any future-directed understanding of the appearance and agency of color and polychromy in the Achaemenid environment. I strive to open up a dialogue, making this dissertation a very modest beginning to a wide range of future studies. I call attention to a few aspects that might shed new light upon some unanswered questions in archaeological theory concerning polychromy by introducing and discussing observations made on the sites of Persepolis and Susa, on objects from the sites in modern museum collections, and, most important, on the modern perception and reception of the polychromy of Achaemenid Persia. I offer a series of thematic explorations on the issue of color. With the constituents and materials that colors consist of as material discourse in the center, we can address issues of the availability of raw materials, aspects of pigment application and surface treatments, of the aesthetic functions of polychromy, focus on the relationship between the significance of color and the Achaemenid courtly environment.

By using the monuments of Achaemenid Persepolis (and Susa) as a case study, I build upon and move beyond the documentary work of earlier researchers, such as

Charles Texier, Jane and Marcel Dieulafoy, Ernst Herzfeld, Erich Schmidt, Judith Lerner, and Giuseppe and Ann Britt Tilia. I hope to show that the polychromatic aspect of these sites is fundamental to any understanding of their overall appearance and meaning. The case study demonstrates, I hope, that investigations of polychromy are crucial in shaping broadly scientific narratives in material culture studies.

Organization and Outline of the Dissertation

In Chapter 2 I will lay out a theoretical framework by providing a definition of what polychromy is about. The aim of this chapter will be to show the reader the complexities involved when applying modern (Western) terminology onto the ancient Near Eastern environment. These come from attempting to interweave modern notions of polychromy to the ancient Near Eastern environment. I review the history of polychromy studies and deal with the beginnings of the modern reception of ancient Near Eastern, particularly Neo-Assyrian polychromy, by investigating how the colors of the ancient Near East have been encountered by excavators and museum curators, and how they have been appreciated and displayed in modern museums since the nineteenth century. Questions of competing aesthetics and display, authenticity and preservation, conservation and the rather ruthless aspect of mold making and casting feature heavily, since these practices were crucial factors in hampering/non-development of polychromy studies for ancient Near Eastern art as I see it. By introducing a very ambitious experiment in reconstructing an ancient Near Eastern polychrome environment with a set of painted plaster casts in the Crystal Palace in London in 1854, I hope to show that the nineteenth century layman was (at least in London) much better educated in

understanding the complexities of the polychromy of ancient Near Eastern palaces than is the modern museum visitor, no matter how harshly these (re)constructions were criticized. Reviewing the history of the reception of polychromy allows me to show that each generation favored its own polychrome version of the ancient Near East.

In Chapters 3 and 4 the Achaemenid Persian Empire takes the stage. I review the specific situation and historiography of the detection of pigments attached to the monuments of Persepolis and Susa and focus on several questions: How did early travelers and archaeologists encounter, detect, and document the polychrome environment of Achaemenid Persia? These chapters draw extensively on a very diverse set of primary sources – notebooks, letters, and archival documents left behind by those who excavated on the site. I also introduce some results of more recently conducted and ongoing scientific analysis of the polychromy of selected monuments in Persepolis.

Important insights can be gained by focusing on the history of excavation and conservation of monuments on the Persepolis platform regarding the detection of colors, colored substances, and painted motifs, by reviewing as their treatment by the different scientific and practical work parties involved in documentation and preservation. In Chapter 5, I address the thorny issue of conservation and preservation of the original paints on the monuments. What was and what was not undertaken to preserve the paints on the monuments? I show how well-intended documentation strategies of the past two hundred years may have destroyed important evidence for our understanding of the polychromy of Persepolis and Susa.

Chapter 6 brings us back to Achaemenid Persia. It contains a discussion of the material laid out in Chapters 3 and 4 within a broader framework. Here, I introduce

aspects of a scenario of the working process. I argue that the choice of color schemes, painted patterns, gilding, and ornaments was designed not only to enhance the surface of monuments but also to serve additional functions, among them to evoke and resonate with meanings of precious materials. The concept of what I have come to label as *imperial polychromy*, can be supported by comparative evidence in the choice of color applications by governing elites in other pre-modern and more recent cultures. It can also be understood against the backdrop of pre-Achaemenid cultures in the regional and contemporaneous cultures which shared craft traditions across the Persian Empire.

In Chapter 7, I argue for the great potential for archaeologists, historians, and conservation specialists to pursue further aspects of the polychromy of Achaemenid Persia. I briefly discuss the issue on how Persia herself did envision her colorful past and whether there is evidence that the Western concept of “chromophobia” took over Iran, too. I conclude with some general remarks and suggestions for directions of future research.

The three main goals of my dissertation are: (1) to explore aspects of the polychromatic appearance of selected monuments from Achaemenid Persia; (2) to help the reader to understand the limits we are faced with when restoring the polychromy of the palaces altogether; and (3) to suggest frameworks in which color has played a prominent role on the sites. I am fully aware that this dissertation was written for an Interdepartmental Program in Classical Art and Archaeology, not to obtain a degree in Conservation Studies. However, I aim for a multidisciplinary effort, using a combination of the full potential of recent methods and approaches to polychromy in Classical and Near Eastern Archaeology, Material Science, and Conservation Studies.



Figure 1.1 Persepolis, Susa, Ecbatana, the three major capitals of the Achaemenid Empire in modern Iran (after Perrot 2010: 15)



Figure 1.2 Persepolis (Takht-e Jamshid), monuments on the Takht in aerial view from northwest (after Stronach and Mousavi 2009)



Figure 1.3 Susa, various hills including the Apadana hill in aerial view from southwest (after Stronach and Mousavi 2009)

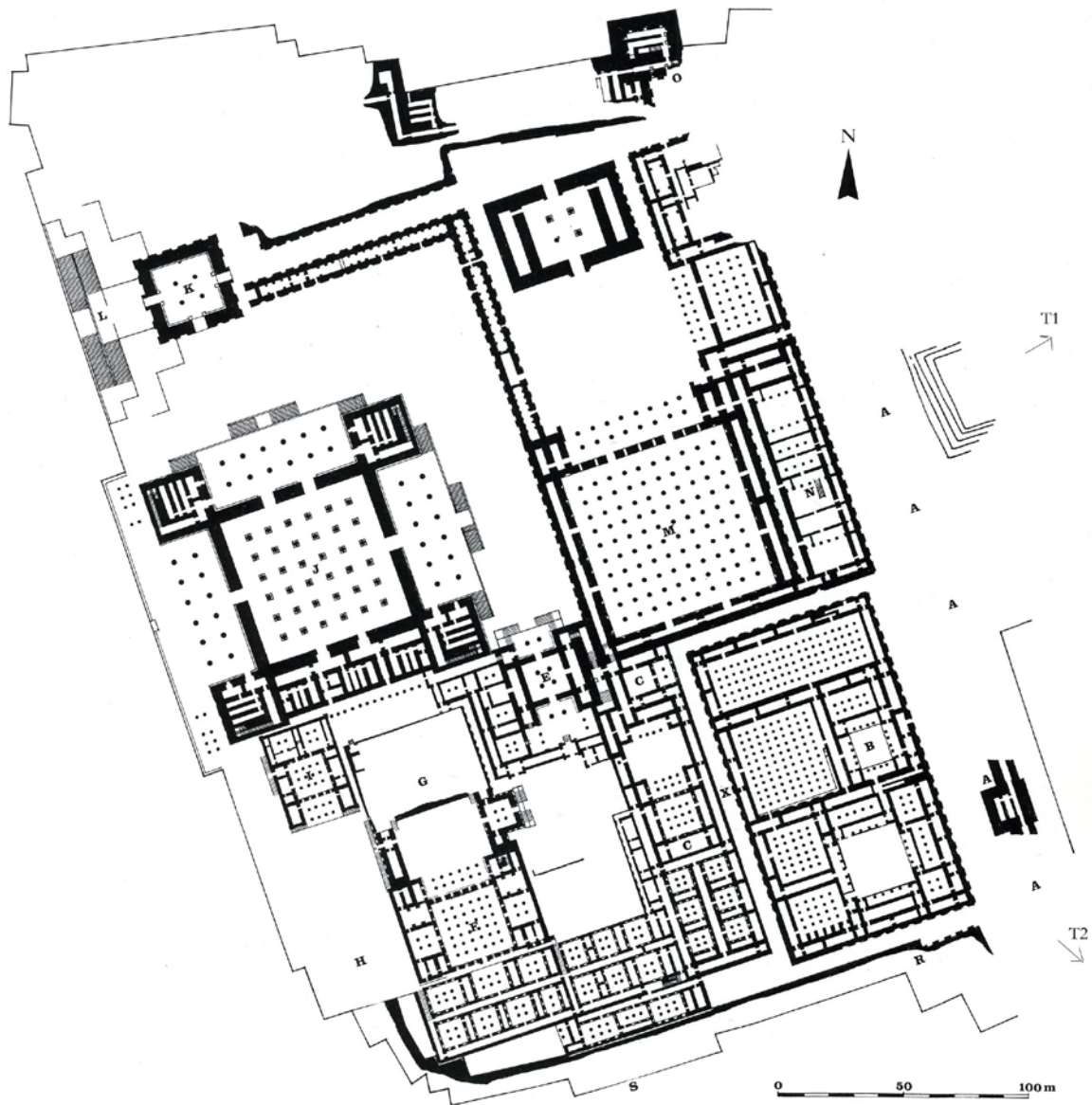


Figure 1.4 Persepolis (Takht-e Jamshid), monuments on the Takht (based on Trümpelmann 1988: 43 Fig. 32). The monuments on the Takht discussed in this dissertation are highlighted:

- | | |
|---|---|
| A = Eastern Fortification Wall | K = Gate of all Lands |
| B = Treasury | L = Main stairs leading to the Terrace |
| C = so-called Harem | M = Hall of 100 Columns |
| E = Central Building (=Tripylon) | N = Unknown structure |
| F = Palace of Xerxes | O = Northern Fortification Wall |
| G = Unknown Palace Structure | R = Southern Wall |
| H = Palace of Artaxerxes III (?) | S = Inscription of Darius I |
| I = Palace of Darius | T1 = Northern Tomb (Artaxerxes III?) |
| J = Apadana | T2 = Southern Tomb (Artaxerxes II?) |

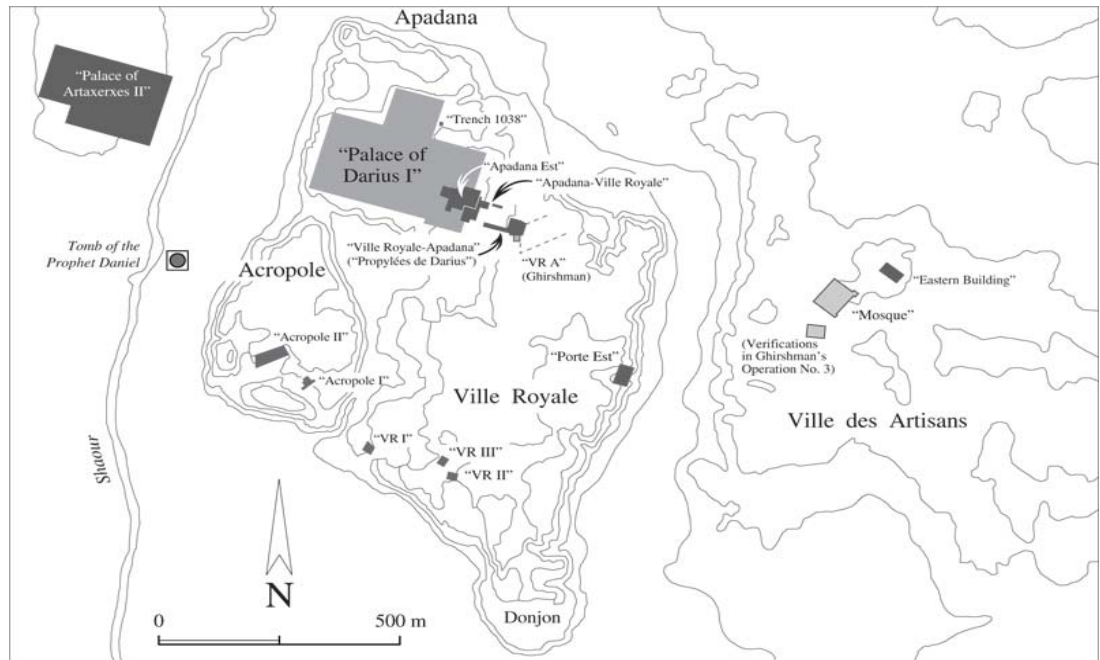


Figure 1.5 Susa. Excavations (adapted from H. Gasche, *Encyclopedia Iranica*, on-line; <http://www.iranica.com/articles/susa-i-excavations>)

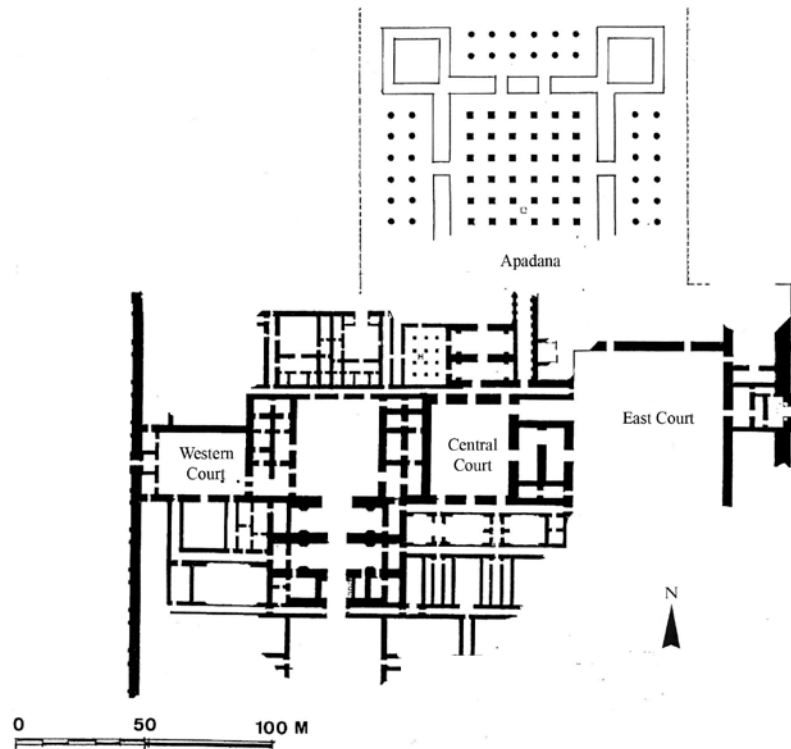


Figure 1.6 Palace of Darius and Apadana, Susa. Excavations 1964-65 (Chevalier 2010: 111 Fig. 75)

CHAPTER 2
TOWARD A DEFINITION OF POLYCHROMY AND
AN HISTORIOGRAPHICAL OVERVIEW

In this chapter I lay out a theoretical framework for this dissertation by providing a definition of what polychromy is about. I review the development of polychromy studies and deal specifically with the beginnings of the modern reception of ancient Near Eastern polychromy. I first investigate how the colors of the ancient Near East, particularly of Assyria, have been encountered by archaeologists and museum curators, and then explore how the polychromy of these monuments has been displayed and appreciated since the nineteenth century. Within this framework, issues of competing aesthetic debates and movements, as well as aspects of influence from polychromy debates in relation to other ancient civilizations (e.g. Egypt, Greece) loom large.

At the more recent end of this debate, I will engage with Batchelor's *Chromophobia* (2000). Batchelor argues that nineteenth century European thought laid much of the ground for a fear that color would eventually "take over" the values of western civilization. He suggests that it was in this century that color became "forcefully" excluded and abolished from a presumed universal western mindset, because it was seen as a "corruption of culture" implicitly tied to "the feminine, the *oriental*, the primitive, the infantile ..." (ibid. 21-3, emphasis mine). It is mainly for this reason that for many decades, the European-American, and also the Middle Eastern worldview has conceptualized and presented the past as predominantly "white."

The now-“white”¹ stones displayed in museums and galleries in Tehran, Baghdad, London, and New York create the image we have in mind, and even recent films have shown the ancient Near Eastern environment surrounded by white sculptures, have introduced the portrayed as living among “white” ruins (Garcia 2008: esp. 21-22). This “whiteness” has shaped our imagination (Batchelor 2000). We have perceptions of urban environments created in specific ancient and modern cultures in mind: we associate the modern domestic architecture on the Cycladic islands in Greece with clear white, blue, and rather plain color schemes, as we associate modern Rome with its terracotta and claret-brownish colors, though they were remarkably different in earlier periods (e.g., Lange 1995; for general notions of the use of colors in modern urban landscapes see Swirnoff 2000; Lenclos and Lenclos 2004).

A critical survey of almost two hundred years of reception allows us to appreciate the often emotionally-charged discourse on the topic and to gain some understanding of the tensions and controversies that have plagued the field. In my historiographical review, questions of authenticity, preservation, conservation, and display (including the controversial practices of cast-making and cast-coloring for museum presentations) feature prominently. In my view, these factors played a crucial role in both the development and the subsequent stagnation of polychromy studies in the ancient Near Eastern sphere.

¹ I am using the terms “white” and “whiteness” in a metaphorical sense. I am aware that different limestones were used on the site of Persepolis. I am also aware that many museum visitors might have in fact the impression that Persepolis was mainly built from a rather dark limestone. The limestone used in Persepolis comes from various local quarries that yielded various shades of this stone (Tilia 1968: 76; Zare 2004). The dark color that one sees on many Persepolis fragments in museums today, however, is in fact a rather modern phenomenon. Most of the Persepolitan stone sculptures in the major Western collections and in the Tehran and Persepolis museums have been heavily treated and polished. This and closely related issues will be discussed further partly in Chapter 5 and partly in Chapter 6. In a metaphorical sense, the term “white” in this dissertation equates “naked.”

Towards a Definition of Polychromy

Any attempt to study the polychromy of a specific site or culture must start with a definition of the word itself. It is important to precisely define what we are talking about and to set this issue of definition into its own historiographic context. Our modern word polychromy is derived from the Greek *polychrómatos*, which simply means many-colored or multi-colored. It is found only a few times in texts from classical antiquity (e.g., Strabo, *Geographica* 15.1.22).² It is important to state, that from existing evidence of known ancient Near Eastern and Egyptian texts, an equivalent term for polychromy has not been identified (see below).³ Modern scholars, however, have come to apply the term polychromy to this sphere as well.

The term ‘polychrome’ was first explicitly sanctioned for use in modern discussions of ancient art in the nineteenth century by the Frenchman Antoine Chrysostôme Quatremère de Quincy (1755-1849; Zanten 1977: 83 n.33; Bourgeois 2008). He first argued for the use of the word in a lecture given on October 17, 1806 in the Parisian Académie des Beaux-Arts on the basis that it was attested in the classical sources cited above.⁴

² Polychrómatos is used interchangeably with polychróos and polychróus: Koch 2000: 38 with further references.

³ This of course does not mean that the cultures did not have the concept. The discussion on the color blindness of the ancient Greeks by W. Gladstone in the nineteenth century is a perfect example of misinterpretations of an ancient culture based on textual sources and word usage alone: Bellmer 1999.

⁴ “Un memoire intitulée: Recherches sur l’origine, les causes, l’emploi, le gout et la durée des statues d’or et d’ivoire chez les Grecs et les Romains, ou dissertation sur la sculpture polychrome des anciens.” Cp. Middleton 1982: 176. According to Zanten (1977: 83) the term was not referred to in French dictionaries until 1878, although it was a common term amongst academics, and was used along with other words like parti-colored. General useful treatises on the debate on ancient polychromy in the nineteenth century can be found in Billot 1982; Türr 1994; Drost 1996; Knipping 2001. The focus of this scholarship has been on the ancient Mediterranean and (more seldom) on Egypt.

Since the term in its basic lexical sense of many-colored is so broad, it can legitimately embrace, for the Achaemenid Persian court environment, myriad media. These media include multi-colored dyed and multi-colored woven textiles as well as painted wooden beams and wall paintings, glazed brick reliefs and tiles, architectural and sculptural details made of materials (e.g., stones), glass, in contrasting colors. They include portable objects such as furniture embellished with ivories overlaid with pigment application, gilding, and/or added ornamentation in semi-precious stone, sculpture with metal attachments, jewelry (especially cloisonné work) with multi-colored inlays, and even stone vessels covered with paints (for such examples, see below Chapter 6), in short everything that would fit into the multi-colored world of the ancient world, and especially for the “rhetoric of abundance” which has been attested for the palaces of the ancient Near East (Winter 2003). Indeed, one scholar has proposed that “polychromy can refer to *any decorative art* involving the use of several colors” (Paterson 2003: 309, emphasis mine).

In modern scholarly discourse, the term polychromy has, however, been used inconsistently and has generated great debate. Paterson himself, who offers the inclusive definition given above, simultaneously refers to polychromy quite restrictively as “the process of *painting or staining* in several colors, *in particular, as regards statues and bas-reliefs*” (ibid., emphasis mine). I will return to Paterson’s idea of polychromy as a process later in this dissertation. Although we are told of numerous ancient treatises on sculpture and artistic practices in classical texts (none are preserved for the Achaemenid sphere), these are not extant, making it impossible to state whether the word and the related concept would have appeared more than we can currently state. In his impressive

review of the literary evidence of Greek and Roman writers on art, Pollitt discusses the lost works on crafts, but he does not contemplate the issue of polychromy or the possibilities of what we might have learned from them regarding the interface between sculpture, architecture, and painting (1974: 12-31).

Further tensions are revealed in Paterson's understanding of how he wants the term to be applied when, in the same passage, he offers the following definitions, which return to his most inclusive approach: (1) polychrome means "having many colors in contradistinction to monochrome, that is also used as a noun to refer to a work executed in many colors;" (2) polychromatic means "having many colors;" and (3) polychrome *sculpture* means "a colored sculpture". In this last phrase, he reasserts his inclusive definition of polychromy by defining a special category of polychrome *sculpture* within that large open category.

Paterson's alternative definition (which restricts polychromy to painterly techniques of surface application of color onto existing sculptures, architecture or other works of art) is emblematic of a serious tension in the field even today. It is therefore crucial to explore the competing ideas in scholarship as to what qualifies as polychromy in the study of ancient art.

Most scholars of ancient art today conform to Paterson's restrictive definition, considering polychromy to be limited to multi-colored features added to pre-existing three-dimensional forms such as relief sculpture or statuary in the round. Previous scholars have, however, complicated issues of definition regarding the issue of wall painting and its impact on the discussion. How does the concept and process of polychromy (as this is generally applied to the coloring of pre-formed modelled

compositions) relate to the concept and process of applying colors to walls in the form of murals? Nunn, who wrote a landmark monograph on wall paintings and glazed wall decorations in the ancient Near East provides no clear definition of polychromy. She does, however, include a short chapter on ancient Near Eastern painted relief sculpture and sculpture in the round (1988: 229-235). Here, she argues that the topic of mural wall painting should be treated separately from such material: “The issue of paint on orthostats and stone reliefs does not directly belong to the topic of wall paintings” (ibid.: 229).⁵ She is making a distinction, because in her understanding, color was applied to ancient Near Eastern sculptures only as detail work on certain limited surfaces of the forms and thus was not similar to the concept of wall paintings. She does nevertheless acknowledge the fact that paint preserved on sculptures helped her consider the use of color and the painter’s palette on murals. In contrast, Seidl (2005: 599) seems to incorporate wall painting and other modes of polychromatic architectural decoration under the rubric of polychromy.⁶

In my view, Nunn’s separation of painted relief sculpture from painted walls is not productive. From the craftsman’s perspective, the raw materials of painted color (i.e., the minerals and pigments themselves), and the process of applying them on relief sculpture, statuary in the round, and wall painting are the same. There is no firm reason to believe that the tools of applying paints onto walls and stone reliefs were different. As Marincola has proposed, the “techniques of polychromy on sculpture often parallel those

⁵ „Die Bemalung von Orthostaten und Steinreliefs [gehört] nicht unmittelbar zum Thema der Wandmalerei.“ (trans. mine).

⁶ Seidl states that the term ‘many-colored’ (German: Vielfarbigkeit) is mainly a “Bezeichnung für die Farbigkeit, die einer auch unabhängigen bestehenden Form zugefügt ist (Architektur, Rundbild, Relief), und deren Einzelfarben ohne Übergang nebeneinander gesetzt sind” (Seidl 2005: 599). The “forms” Seidl is referring to would not exclude wall paintings per se as these are part of architecture.

of two-dimensional painting in the same culture” (2004: 1319).⁷ Particularly for Neo-Assyrian palace art, Moorey (1994: 35) has argued for a “close relationship of painter and sculptor” as “emphasized by the use of applied colour on the reliefs.” He also notes that the Neo-Assyrian palace reliefs are in fact “two-dimensional drawings rendered in relief,” and that “it is likely that their execution was influenced from the outset by the techniques of wall painting ... The design would be sketched in, in ink, then the background cut away” (Moorey 1994: 35 reinforcing Moortgat 1969: 130-1). Moorey further remarks that the palette of colors is identical between relief sculpture and mural arts (1994: 326). It is well known that wall paintings appeared directly above the painted reliefs in the very same Neo-Assyrian palace interiors (Rassam 1897: 28; Loud 1936: 67; Albenda 2005; Guralnick 2010). Wall paintings and painted reliefs must be considered as part of one production process that took place in these rooms (see also Chapter 6). The result was an integrated polychrome program.

As with later Achaemenid décor, Neo-Assyrian palace environments included polychrome glazed brick embellishment along with mural painting and painted reliefs. An index of the probable comingling of these media in ancient thought is found in the ambiguity of modern translations of a wording in a statement of King Assurnasirpal II (c. 883-859 BCE) in which he refers to the representation of his triumphs *zaginduru* “in paintings.” Moorey reiterates Mallowan’s observation that these “paintings” may in fact have been glazed bricks (Moorey 1994: 326).⁸

⁷ This has been recently stressed by Brinkmann (2007: 61) for the field of Greek polychromy, where a carved relief is “typologically closer to painting than sculpture in the round.”

⁸ See Mallowan 1966: 67. In the original publication by Wiseman (1952: 30 and 36) the text was translated as follows: (l. 31): “My glorious valor in the regions of the mountains and seas ... and the conquest of all their lands I drew in glazed (works) on their walls (l. 32), I caused bricks to be baked with blue (glaze) and set (them) above their doors.”

Turning to the close of the Achaemenid period, the evidence of the so-called Alexander Sarcophagus is tremendously important. This monument, found in Sidon in 1887, and dating to the late fourth century BCE, combines deeply carved relief sculpture, that preserves remnants of a lavish polychromy with motifs painted on the interiors of the shields of the sculpted Persian warriors in the manner of miniature murals (Graeve 1970: 102-9; Brinkmann 2007: 154 Figs. 284-7). It is of great interest that the motifs painted on these shield interiors are directly inspired by Achaemenid monumental sculpture known to us from Persepolis. We also note that in Persepolis paint was used to create patterns and detail motifs on certain architectural reliefs which in other instances were rendered in carved form (see below, Chapter 4). The patterns of walking lions carved in relief on the royal baldachins of the original central panels of the Apadana or the doorjambs of the Hall of 100 Columns can be compared with the patterns of walking lions once rendered in paint ornamenting the throne-covers and royal robes as preserved via incised painters' guidelines on figures from the Hall of 100 Columns, the main Hall of the Harem building and the Tripylon (Tilia 1978: 46 Fig. 3 and pl. 33 Figs. 39-40; Schmidt 1953 pl. 105; cp. Naster 1974).

The close connection between polychromatic murals and architectural reliefs is well attested through evidence from Persepolis and Susa together. The discoveries in the 1970s at Susa revealed remains of full scale mural paintings (Labrousse and Boucharlat 1974; Boucharlat 2010: 402-3 Figs. 466-9), rendering the motif of gift-bearers from the subject lands, echoing at approximately the same scale the famous carved stone reliefs on the Apadana at Persepolis. Cross-overs between reliefs in stone (certainly originally painted) from both Persepolis and Susa are attested abundantly at Susa also in colorful

glazed brick relief and equally colorful flat glazed tiles. The motif of servant-figures carrying vessels and containers up staircases is a prominent example of this in all three modes.⁹ This medium is closely tied to the concept of mural painting and, as noted above, may have been considered one and the same phenomenon in the ancient mind (viz., Assurnasirpal II). There was no necessary distinction between what motifs and scales of production were appropriate for polychromy renderings in mural work, glazed brick and glazed brick relief. In features of technical production (as opposed to decorative concept), A. Caubet compares the mode of application of polychromy on the glazed bricks from Susa with the jewelry technique of cloisonné (Muscarella et al. 1992: 223). This observation reinforces the impression of the fluidity of craft interconnectivity in the sphere of polychromatic vision, design, and implementation at the Achaemenid Persian court. It helps open the door ultimately to reconsideration of the broadest and most inclusive of definitions of polychromy.

Terminology for relevant craft techniques used at the Achaemenid Persian court is ambiguous, fluid, and hardly restrictive. The Old Persian term *patikarā* (p-t-i-k-r-a), as attested in Achaemenid texts has been translated by Kent as “picture, (sculptured) likeness” (1953: 194, followed by Cameron 1958: 166 and Roaf 1980). Gershevitch, however, translated *patikarā* rather as “counterfeit, re-production” (Roaf 1980: 73 n. 5). The word is rooted in the idea of likeness, not in the technique of sculpture per se. Kent’s parenthetical suggestion of *sculptured* likeness is inferred by him from the fact that the uses of the word in extant Achaemenid texts happens to refer to sculptural monuments. *Patikarā* is used in the inscription of Darius I at Bisotun (DB IV 66, ll. 72-77—Kent

⁹ Other examples of cross-overs between stone relief and glazed brick in either relief or flat decoration include files of confronting guards, antithetically-posed sphinxes, lion and floral motifs (see, e.g., Muscarella et al. 1992).

1953: 132, followed by Schmitt 1991: 72) and in his tomb inscription (DNa 4, ll. 30-47—Kent 1953: 138). At Bisotun (DB IV 67, ll. 76-80), Darius exhorts,

If thou shalt behold this inscription or these sculptures, (and) shalt destroy them and shalt not protect them as long as unto thee there is strength, may Ahuramazda be a smiter unto thee...(Kent 1953: 132).

These texts refer to the representational imagery on the two monuments (which in both cases happens to be in the form of sculpted stone rock relief). Roaf (1980: 65) in discussing the terminology for sculptors and sculptures at the Achaemenid Persian court himself argues (correctly in my view) that the term *patikarā* must, however, be appreciated as similar to the Babylonian word *salmu* (sal-ma-a-nu), which “had a similarly wide range of meanings: statue, relief, drawing.”

Evidence from other Achaemenid texts does not provide a great deal of information that would allow us to see distinctions the court might have made in discussions of the *techniques* of wall painting versus painted relief sculpture versus polychrome-decorated glazed bricks in the rendering of “likeness.” The trilingual Susa Foundation Charter texts (DSf 3i, ll. 40-45—Kent 1953: 144; Lecoq 1997: 236; Kuhrt 2007: 492 for the Old Persian) state,

The ornamentation with which the wall was adorned, that from Ionia was brought... (trans. Kent 1953: 144).

But it is unclear what type of wall ornamentation would have been “brought” presumably ready-made from afar: textiles perhaps? A later section of the same text (DSf 3i, ll. 45-

49—Kent 1953: 144; Lecoq 1997: 236; Kuhrt 2007: 492 for the Old Persian) goes on to stipulate a series of distinct jobs performed by specified and discrete ethnic groups:

The stone columns which were here wrought, a village by name of Abiradu, in Elam—from there were brought. The stone-cutters who wrought the stone were Ionians and Sardian... (trans. Kent 1953: 144).

This passage suggests some differentiation of craft specialties relating to different types of ornament that would have yielded the polychromy of architectural monuments that we can glean from physical evidence at the sites of Persepolis and Susa (see below, Chapters 4 and 6). This text is, however, an imperial statement of power over, and integration of conquered lands rather than a treatise on artistic practice (viz., Root 1979: 11; Root 2010: 186 and passim, see below, Chapter 6). Accordingly, it must be treated in those terms.

Elamite administrative documents from Persepolis (for context and background, see below, Chapter 3) cast light on this subject in a genre that is not governed by ideologically-driven rhetoric. One Persepolis Treasury tablet (PT 27), dating from the reign of Artaxerxes I (462/1 BCE) refers to “makers of inlay, makers of reliefs (?)” (Kuhrt 2007: 788 No. 19). This document is interesting in that it brings together these two crafts in a citation of what appears to be a single work project. Several Elamite administrative documents from the large Persepolis Fortification tablet archive refer to craftsmen. Some of these texts do categorize explicit distinctions between types of crafts engaged in the decoration of the palatial installations of Persepolis. Hallock translated the Elamite term *karsup* as painter (PF 1110, 1111, 1169 = Hallock 1969: 711); Cameron translated the Elamite term *hatena hutira* (PT 78) as a ornament maker; Hallock,

however, suggests a mirror maker (Kuhrt 2007: 789 No. 21) . The Elamite term *beasiskurraspe* (PT 30, PT 62) is understood as ornament maker by Hallock (1969: 677; 1960: 99-100). A plasterer (?) is perhaps attested as *du-uk-kaš*, too (PT 49a = Cameron and Gershevitch 1965: 175; PT 76:5 = Hallock 1969: 682; PT 10a = Arfa'i 2008). Gold- and Silversmiths are also mentioned (PF 872 = Kuhrt 2007 : 794 No. 29; PF 874 = Kuhrt 2007: 795-6 No. 33).

The evidence we have to date on these matters reinforces the general impression that the Achaemenid court considered the production of various forms of ornamentation as part of a larger whole. Distinct specialties that contributed to the polychromy of the whole surely existed (such as inlay work versus relief carving); but on the level of payments and disbursements, a craftsman was a craftsman to a large degree (see below, Chapter 6) . Many were engaged simultaneously on a multi-media presentation that included variety of techniques to produce lavish displays of polychromy.

All of this leads me to propose that polychromy properly defined should indeed refer to any decorative art involving the use of several colors (cp. above: Paterson 2003: 309). The ideal ultimate goal in studying the polychromy of the Achaemenid imperial environment would be to incorporate an integrated analysis of the entire spectrum of color array from the many and varied manifestations I have suggested above. Within the parameters of this dissertation I will, perforce, focus primarily on painted and gilded royal monuments of the Achaemenid heartland capitals of Persepolis and Susa. But my restrictive focus is not a statement of a restrictive definition of polychromy. Instead, it reflects the practicalities of one project that is preliminary to a much larger endeavor. I

will attempt to place these monuments in the context of a polychromy of the Achaemenid courtly environment that embraces a holistic concept (see also below, Chapter 6).

Constructing and Overcoming *Chromophobia*: Colors, Gilding, and Painted Motifs in Near Eastern Archaeology - Excavating, Publishing and Presenting Polychromy

The history of the detection, subsequent perception, and aesthetic evaluation of the once colorful walls and sculptures of the ancient Near East, particularly those of the Neo-Assyrian palaces, over the last two centuries is as complex as it is a fascinating tale of competing ideas of interpretation and public presentation of polychromy. Educated people of the early nineteenth century read the classical authors and the Hebrew Bible. These sources left no doubt that the ancient Near East was a polychromatic environment: colorful columns and reliefs adorning the walls of the palaces in Babylon are mentioned in the Bible and classical texts. According to Ezekiel 23, 14-15 (perhaps recording scenarios of the sixth century BCE) in the palaces of Babylon “there were men portrayed on the walls, the images of the Chaldaens portrayed with vermilion, girded with girdles upon their loins, exceeding in dyed attire upon their heads, all of them princes to look to, after the manner of the Babylonians at Chaldea” (trans. Fisch).¹⁰ According to the Greek historian Strabo (writing in the Augustan Age), the Babylonians “wind ropes of twisted reed around the columns and then they plaster them and paint them with colors” (Strabo, *Geographica* 16.5.1, trans. Jones).¹¹

¹⁰ For discussions on color terms in the ancient Near Eastern sources in the nineteenth century see, e.g., Brenner 1982; 1989; 1999.

¹¹ Strabo’s commentary needs, of course, to be treated with caution. It can be discussed whether his account is describing a Babylon of his own era or a Babylon of a past.

As we will see, many experiments in the nineteenth century public display of ancient Near Eastern art reinforced the notion of a richly colored ancient Assyria and Babylonia.

Approaching the Polychromy of the Ancient Near East: The First Decade (1843-1853)

The first wave and the bulk of archaeological fieldwork of the early first millennium BCE Neo-Assyrian palace complexes at Khorsabad (ancient Dur-Sharrukin), Nineveh (Kuyunjik), and Nimrud (Kalhu) took place between 1842 and 1855.¹² Paul Èmile Botta (1802-1870), Eugène Flandin (1809-1876), Austin Henry Layard (1817-1894), and Victor Place (1818-1875) frequently referred in their reports to traces of paint on the monuments, glazed bricks, painted plaster and raw materials related to the painting process (Flandin 1845; Botta and Flandin 1846-50; Layard 1849; Albenda 1986: 33).¹³

The first reference was published in April 1843 when Botta announced the abundance of colors still to be observed on the monuments at Khorsabad in letters to Jules Mohl in Paris (Botta 1843; Botta 1844). Hand colored plates accompanied Botta's earliest publications on Khorsabad (Guralnick 2002: 28-30; 2010: 782).

¹² A great number of recent monographs and articles have dealt with the arrival and reception of ancient Near Eastern monuments in nineteenth century Europe (e.g., Larsen 1996; Bohrer 2003; Thomas 2008). For the nineteenth century reception of Achaemenid Persian monuments in Europe, especially England: e.g., Harrison 2007.

¹³ Large lumps of actual pigments were excavated in the corners of room 99 at Khorsabad, connecting two courts. A red lump 'en quantité considérable' had a weight of about twenty kg (!), a blue lump still about one kg (Place 1867-1870 vol. II: 251). In the same chamber, Place noted three unfinished sculptured stone slabs with chips of the same stone and pigment lumps scattered on the floor (Place 1867-1870 vol. I: 92-93; vol. III pl. 48). Cp. Caubet and Bouquillon 2007: 90-1 Nos. 24-5. We will return to aspects of painters workshops below in Chapter 6.

Once removed and transported to Europe, the impressive monuments from the ruins of the Assyrian palaces soon became attractions in museums and salons. Museum curators were aware of the traces of paint discovered by the excavators. The first reliefs and sculptures reached Paris in December 1846. In February 1847, Adrien de Longpérier (1816-1882), first head Conservateur d'Antiquités at the Louvre in Paris, documented traces of paint on the architectural sculptures excavated at Khorsabad.¹⁴ The Louvre's Assyrian galleries, which opened to the public on May 1, 1847, were soon filled with painted bricks and raw pigments, including a large number of blue and green materials, partly excavated by Botta, partly by Place, leaving no doubt about the colorful environments of the ancient Near East (Longpérier 1854: 44-49 nos. 48-210). And these were the words of Layard on the colors observed on the monuments of the freshly excavated reliefs from the series of Neo-Assyrian palaces excavated by the British (Layard 1849, vol. 2: 312):

The hair, beard, eye brows, eye lids and eyeballs, black; the inner part of the eye, white; the king's mitre, principally red; the crests of the helmets, blue and red; the heads of arrows, blue; the bows, red; the handles of maces, red; the harnesses of horses, blue and red; sandals, in the oldest monuments, black, edged with red; in those of Khorsabad, striped blue and red; the rosettes in the garlands of winged figures, red; trees at Khorsabad, a bluish green; flowers carried by the winged figures, green, with red flowers occasionally; fire, always red.¹⁵

¹⁴ Longpérier 1854: e.g., 29 no. 5: "La barbe, les yeux et les sourcils portent des traces très sensibles de couleur noire et blanche."; ibid. 31 no. 7: "Les yeux et la barbe conservent des traces de couleur"; ibid. 32 no. 10: "Les yeux, les cheveux, la barbe, le diadème, la tête de l'ibex et la fleur de lotus ont encore peints."; ibid. No. 11; 33 no. 13; 34 nos. 15 and 16; 35 no. 17: "Le diadème est d'un rouge très vif."; no. 18; no. 19; 36 no. 21; 37 no. 26; 38 no. 29: "La couleur de s jambes et de s sandals est encore très reconnaissable"; 38-39 no. 30: "La tête des chevaus est surmontée d'une sorte de *crista* peinte en rouge, ...; 40-41 nos. 32-34.

¹⁵ Further comments on paint ibid. 306, 309, 310; passage here cited from Stearns 1961: 20 n. 40. See also the reference by Reade 2008: 15 n. 2 quoting from the original notebook of Layard: "Bracelets on arms painted black/crossing with red edging/mace handle red/Tiara of king, horse reins and ornament above red/Handle of dagger below head of/animal-blue/the head a reddish brown/ornament all black pecked with red/the knob or rope near leg, blue/bracelets red. Tassels ditto."

The discovery of the polychromy of the monuments in the Middle East itself was, however, preceded by significant discussions of classical Mediterranean and, to a lesser extent, ancient Egyptian polychromy in the first half of the nineteenth century. Botta and Layard were rooted in an environment where theoretical discussions of the extent and function of polychromy on Egyptian and Greek sculpture loomed large, and proving the very existence of polychromy itself seemed a considerable accomplishment.¹⁶ Already in 1845, in discussing the polychromy of the stone reliefs excavated at Khorsabad, Flandin was using the traces of paint to conceal a large measure of aesthetic preconceptions. He opens his brief discussion by commenting on the rather annoying (“fâcheux”) impression the colors would have made on the viewer, and on the difficulties contemporaries are faced with when imagining the phenomenon. Joining the ongoing debate on the polychromy of ancient Greek architecture and sculpture to the ancient Near Eastern situation he notes:

How difficult it is to understand that the Greeks, with all monuments having been built with materials of the finest quality, ... and whose architectural ornaments they executed so fine, decided to conceal the imprint chisel of their skilled sculptors under layers of blue and red.¹⁷

¹⁶ Even though color engravings were part of a limited deluxe edition of the invaluable *Description de l’Égypte* (1809-1828) and left no doubt about the original polychromy of ancient Egyptian monuments (e.g., Panckoucke 1809-1828, vol. I pl. 18: “The Hypostyle of the Main Temple of Philae Perspective View”; vol. II, pls. 12: “Thebes-Medinet-Abou”; pl. 89: “Thebes-Byban el Molouk”), their impact into contemporary discussions on ancient polychromy have not received sufficient scholarly attention. The polychromy debate was also relevant for contemporary architecture in Europe, too (e.g., Zanten 1977; Billot 1982; Middleton 1982; Crinson 1996: 33-35). It is apparent that nineteenth century European architects were inspired by and soon adapted Egyptian polychromy into exterior facades, e.g., the 1823 façade entrance of the library of Devonport in Plymouth, or the so called Egyptian House in Penzance in Cornwall, built in 1835 (Curl 2005: 264-66). In 1822, Franz-Christian Gau (1790-1853), a close friend of Jacob Ignaz Hittorf (1792-1867), one of the most prominent defenders of ancient Greek sculptural polychromy, had exhibited a series of brightly colored studies of ancient Egyptian facades at the Paris Salon (Gau 1822).

¹⁷ “Ce qui se comprend plus difficilement, c’est que les Grecs, dont tous les monuments ont été construits avec des matériaux de la plus belle qualité, ... et dont les ornements architectoniques étaient si finement exécutés, aient pu se décider à cacher l’empreinte du ciseau de leurs habiles sculpteurs sous des couches de bleu et de rouge que rien ne nécessitait” (Flandin 1845: 106, trans. mine).

Though Flandin is harsh in judging the aesthetics, his comments on the actual polychromy of the Neo-Assyrian palace reliefs are far from precise:

I may not claim that the walls of the palaces at Khorsabad were entirely colored, and to me there is no certainty regarding that question. It may be that only some parts of the bas-reliefs were painted, and that in order to make them more visible, the walls were left untouched on big surfaces and only some items were colored. However, I do not think so.¹⁸

Rather, it would be due to the matter of conservation and stability of the pigments and binding materials that not all colors are visible anymore (Flandin 1845: 107). The issue of conservation and preservation was indeed a very important one, to which I will return below in more detail. Flandin made one more important observation: that the “colors” applied on the reliefs in the Assyrian palaces were the same as those applied to the monuments in Egypt (Flandin 1845: 107).

In 1847, the first relief sculptures from Layard’s excavations conducted in the ruins of the Neo-Assyrian palaces arrived in London. Attempts to reconstruct the *original* colors of these palaces soon followed. In his *Nineveh and its Remains* Layard published four chromolithographic plates, among them one imaginary reconstruction of an Assyrian interior, brightly colored (Layard 1849, vol. 1, pl. 2; **Figure 2.1**). His concept of polychromy was developed together with the architects Owen Jones (1809-1874)¹⁹ and James Fergusson (1808-1886). Both of these men figured prominently in discourse on polychromy at this time.

¹⁸ “Je n’oserais point avancer que les murs des palais de Khorsabad étaient entièrement coloriés, et, à cet égard, je suis dans le doute. Il est possible que certaines parties seulement des bas-reliefs aient été peintes, et qu’afin de produire plus d’effet, en laissant la pierre dans un état naturel sur les grandes surfaces, on n’ait colorié que quelques détails; cependant je ne le pense pas” (Flandin 1845: 107, trans. M. Thiam).

¹⁹ On Jones: Hrvol Flores 2006, and below in this chapter.



Figure 2.1 Interior of an Assyrian Palace, A. Layard (1849), vol. 1, plate 2.

Significantly, the elaborate reconstruction we see in Figure 2.1 cannot be taken as a precise illustration of Layard's direct observations of the archaeological record. Some color schemes in the image differ markedly from Layard's written descriptions. In retrospect, it is not clear what purpose this reconstruction may have served: To stimulate interest in polychromy? To raise funds for future excavations? This reconstruction, together with other painted reconstructions that soon followed after created an aura around these ruins that had been brought to Victorian London (Bohrer 1989, 1992).

In 1851, Fergusson stated that the new discoveries of Assyrian palaces

... were of greatest importance in relation to the question of polychromy, being in fact the authority for its employment by the Greeks; and a proper study of them would go far to throw light upon the question ... The Persians, however, from the days of Nineveh to the present time, used colour most extensively; covering their mosques entirely with painted tiles, and relying more on colour than on form for the effect to be produced (cited by Donaldson 1851: 45).

The interest in publicizing the color of these great monuments could best be seen in museum and museum-like presentations of the day. Shortly after the arrival of the Assyrian reliefs in London, various parties made requests for casts. Some collectors requested colored casts for display alongside their privately held fragments of Assyrian reliefs in order to show what the gray originals once looked like. In a recently published letter to Layard in May 1850, for example, Henry Danby Seymour requested that a cast of a relief from room I of the northwest palace of Nimrud be made so that it might be painted to replicate its presumed original colorful appearance.²⁰

The public was exposed to somewhat contradictory information about the nature and extent of the polychromy that once adorned the monuments. In 1853, Joseph Bonomi (1796-1878) argued that besides the observed red, blue, and black it appeared that

the colours were more varied, and that the whole surface of the bas reliefs was coloured with them. On the bricks there are other tints: ... yellow, white, green etc. There is no reason why the Assyrians should have used these latter colours on their bricks, and not have employed them to paint their sculptures. It is much more natural to suppose that the portions not at present coloured were coloured formerly.²¹

²⁰ “I want a cast taken of the sculpture, and to have the cast coloured as it is supposed the sculpture was. It will stand like a fire-screen with the sculpture on one side and the painted cast on the other” (Reade 2008: 11; BL 38979: 231; Letter, May 18, 1850).

²¹ Bonomi 1853: 327-8; Bonomi is a less well studied character in debates on polychromy in the nineteenth century. He was in close contact with Botta and Coste (Crinson 1996: 32). Together with Owen Jones, Bonomi was responsible for the Egyptian Court in the original Crystal Palace of 1851 (see below). The Bonomi papers and correspondence are held today at the Cambridge University Library, Department of Manuscripts, and include communications with Layard and Fergusson. I plan to study this documentation in the near future.

The question of polychromy in ancient Near Eastern palaces is addressed less explicitly by William Vaux (1818–1885), Assistant Keeper in the Department of Antiquities in the British Museum from 1841. In *Nineveh and Persepolis* (1850) he argued that, „two colors: red and blue have stood the test of time ... The blue is generally extremely bright” (ibid. 195).

Important meetings were held on January 12, 26th and February 9th 1851 at the Royal Institute of British Architects in London, dedicated to “polychromatic embellishments in Greek architecture” (Donaldson 1851). In attendance were not only experts on Greek polychromy, including Hittorf, Semper, and Penrose, but also “experts” on Egyptian and Assyrian polychromy like Fergusson, Jones, Hector Horeau (1801-1872), and Joseph Scoles (1798-1863). Here, it was argued that the architecture of the Greeks could not be understood without studying their polychromy (Donaldson ibid. 44). An important landmark in the intellectual reception of ancient polychromy, again only focused on the polychromy of ancient Greece and Rome is Semper 1851a.

Nunn (1988: 229) has attempted to distinguish between those nineteenth century scholars who interpreted the archaeological remains as indicating an only partial coverage in color and those who favored a total polychromy. She does not mention Bonomi. The situation is, however, much more complex than Nunn has suggested. Although Nunn is right that Layard advocated only partial decoration, this is true only of his scholarly writings. His actions in terms of public presentation of the colors of ancient Near Eastern monuments indicate that he was conflicted on this issue and offered an alternative version of the monuments in a total polychromy of vibrant colors.

Re-inventing the Polychromy of the Ancient Near East:

The Nineveh Court at Sydenham (1854-1866)

Layard, Fergusson, and Jones collaborated in a campaign to influence the public to accept and think about the use of color and ornament, the polychromatic enrichment of built environments, since, in Jones' own words, "England was far behind in employment and appreciation of color in then contemporary interior and exterior decoration" (Piggott 2004: 75). An important part of this campaign was their creation of a dramatic installation of colored casts and reconstructions of Neo-Assyrian palaces in the Crystal Palace in Sydenham in south London.

The Crystal Palace, which opened to the public on June 10 1854, was a private initiative to show recent developments and progress in technology and production.²² The

²²Already in 1851 Jones was involved with plans for the Great Exhibition. As superintendent for the exhibition, his tasks involved the decoration of Joseph Paxton's Crystal Palace, as well as the arrangement

Fine Arts Court, with its showing off of ancient and medieval art work, played a rather small but interesting role.²³ This “world trade fair” was successful; the public was quite drawn to the fair, with visitor numbers much higher than in the museums of the city of London. One contemporary witness stated that the Crystal Palace is “the grandest educational institute the world has yet seen” (Anon. 1854a: 246).

The Nineveh Court was an important phenomenon in the history of the reception of ancient Near Eastern and Egyptian polychromy in the nineteenth century (**Figures 2.2-3**). The Nineveh Court was located next to the foot of two of the four famous statues of the Egyptian temple complex of Abu Simbel each measuring 15.5 m and crafted in blocks of plaster “covered in red, yellow and blue house paint ordered by Hogshead,” reminding one visitor of “clowns in the circus.”²⁴ Layard, Fergusson and Jones created their visions of the ancient Near Eastern palatial environment. The Nineveh Court highlighted vibrantly colored casts of architectural reliefs from Nineveh, Nimrud, and Khorsabad set into a structure. In this combination the exhibition lacked historical specificity, but such was obviously not the aim. The color schemes applied to the casts and the galleries displaying the monuments of the ancient Near East in the Nineveh Court were executed by a London based company (Leonard W. Collmann, renowned interior decorator of

of the displays; after the closing of the Great Exhibition in 1853, Jones was involved in re-erecting the Crystal Palace at Sydenham, London. Together with Matthew Digby Wyatt, he undertook the design and furnishing of the Fine Arts Courts. As a result of coloring the monuments in the Greek Court he was obliged to publish an *Apology* (Jones 1854), in which he was assisted by his friend the distinguished philosopher George Henry Lewes (1817-1878).

²³ The literature on the Crystal Palace is vast. On the oriental displays see Bohrer 2003: 212-8; Piggott 2004: 109-12.

²⁴ Anon. 1854b: 258. See the interesting comment by H. Sotheby: “I happened to be at the Crystal Palace when the casts were first being painted ... At that moment I was pleased with the novelty, and so expressed myself to Mr. Bonomi. The next day, however, I called, telling him I had quite regretted having entertained such an opinion” (Piggott 2004: 87).

Curzon Street), and were probably painted by Middle Eastern workmen (Piggott 2004: 47), and described in detail by the contemporary guidebooks.²⁵

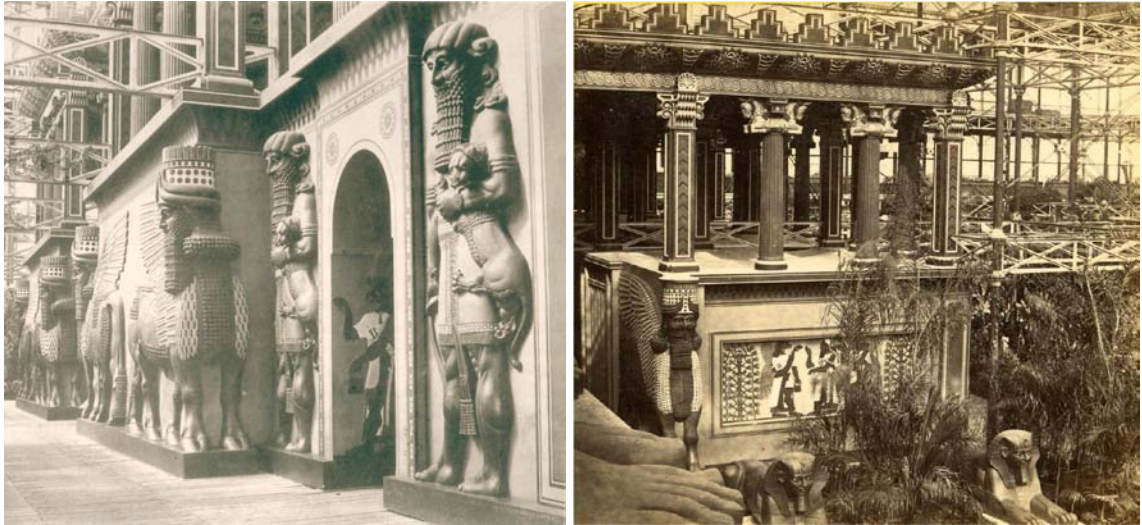


Figure 2.2 Nineveh Court, Sydenham, east façade, photograph by Ph. Delamotte, c. 1860 (Piggott 2004: 109).

Figure 2.3 Nineveh Court, Sydenham, south façade, from a negative for a stereoview by Negretti and Zambra, c. 1860 (© Musée d'Orsay, Paris, France)

According to one guidebook, the casts of the “animals” in the Nineveh Court

... were in chocolate on buff grounds, or blue on red, or red on blue. The bulls of the portal were deep dull red with black beards and hairs, their mitres blue and yellow (Piggott 2004: 111).

In the accompanying catalogue, Layard explains in an authoritative voice how the choices of colors were made:

The arrangement and contrasts of the colors have been carefully studied, and when there has been no authority for their use in any particular instance, a comparison with other monuments and especially with Egyptian remains have, in some instances, furnished the means of deciding which

²⁵ “Fergusson, as assisted by Mr. Layard, has erected the court before which the visitor now stands -- an architectural illustration which, without pretending to be a literal copy of any one building, most certainly represents generally the architecture of the extinct but once mighty kingdoms of Mesopotamia, during the two centuries that elapsed between the reign of Sennacherib and that of Xerxes, viz, from about B.C. 700 to B.C. 500” (Layard 1854: 52 and 53-4). The Nineveh Court was situated in the north-western angle of the Crystal Palace (cp. Hrvol Flores 2006: 120-1 pl. 2.21 watercolor; Leith 2005: figs. 63-65 photographs; Piggott 2004: esp. 109-112).

to adopt. It may appear strange and unnatural to us that color should be employed in all parts of such an edifice, and that even sculptures and bas-reliefs in various materials have been painted. But that such was the case in Assyria, as indeed in Egypt and in ancient Greece, can now no longer admit of a doubt, and in restoring an Assyrian palace, it would have been absurd to omit so essential a feature of Assyrian architecture. From the remains of gold leaf continually found in the ruins, it would appear that gilding was profusely employed in the Assyrian palaces. It is even probable that many parts were overlaid with gold leaf ... Care ... has been taken to consult every authority upon the subject. The traces of colors still existing on the monuments discovered at Nineveh, especially upon those at Khorsabad, have been minutely examined, and have furnished sufficient data for the painting of most of the bas-reliefs and architectural details (Layard 1854: 53-54 and 59).²⁶

Significantly, although many original fragments from Persepolis and casts from monuments taken from the site were housed by this time in the British Museum in London (see Chapter 5), almost none of this material was featured alongside the Assyrian casts. The second storey of the Nineveh Court was composed of an elaborate balcony reconstruction meant to suggest the superstructure of the Assyrian palaces. Ironically given the sidelining of Persia here on its own terms, the columns of this balcony are actual replications of the complex Achaemenid columns from Persepolis and Susa, complete with their great bull protome capitals.²⁷ These fabricated bull capitals were

²⁶ According to the general guide book, the walls of the Nineveh Court were ... "ornamented with paintings, either on plaster or enameled on the bricks ... Having completed his survey of the interior of this Court, the visitor may ... glance at the exterior of the Court he has just quitted, the bright coloring of which -- the bold ornaments, the gigantic bulls, and colossal features, present as novel and striking an architectural and decorative display as the mind can imagine" (Phillips 1854: 26); Layard does not give any more detailed description of the colors and paints used for the reconstructions. For the color schemes we can rely on contemporary watercolors by John Nash. On these reproductions we witness the detailed and rich color schemes employed: The colossal Lamassus had reddish-brownish bodies with blue wings, articulated with white rims. However, we cannot trust totally since the Egyptian like upper frames are in one image red, in the other green. From the photographs available it is clear that Jones and Fergusson employed contrasting color schemes for the Persepolitan inspired frames. While the hair and beards of the colossi were painted black and the face in the same color as the body (or only slightly brighter) the horned crown was left white with a system of dots and golden horns, as well as an upper crown of blue leaves. However, both reconstructions show blue for the plaster casts of the bull capitals from Persepolis supporting the columns of the Nineveh Court. In the Nineveh Court, yellow seems to have been used to imitate what may have been original gilding.

²⁷ Fergusson's published architectural reconstruction of the Assyrian palaces were deeply inspired by his awareness of the standing ruins of Persepolis: Fergusson 1851.

completely painted. The presentation stands out as a landmark experiment in the portrayal of a polychrome ancient Near East for the general public.

Notwithstanding the excitement they generated, the polychrome installations sometimes also met with harsh criticism. Recent research has confirmed that for some contemporaries the Nineveh Court in the Crystal Palace must have given the impression of a “marvellous peep-show, a contemporary toy theatre,” that although the coloring seemed “garish to most people of refined taste ... to most people it must have possessed a special theatrical excitement” (Piggott 2004: 75-6), and the colors would have made Nineveh “absolutely ferocious” (ibid. 112).²⁸ An anonymous reviewer in the *London Quarterly Review* in April 1855 noted scathingly, for instance, that

²⁸ Piggott observed that Jones “had stamped his ideas and taste too heavily on the courts and observes a ‘color fever’, ... ‘polychromatic’ runs like a motif, or even like a party line, throughout the company’s guidebooks to the Courts” (Piggott 2004: 76). Cp. Anon. 1854b: 258 on the Egyptian casts: “Will anyone for a moment deny that the effect of the four vast seated colossi (in the Crystal Palace there are but two of these) which exist in the rock hewn facade of an ancient temple in Nubia, called by the Arabs Aboo-Simbel, must be infinitely grander in their native rock colour, mutilated as they are, than painted up into the hot and glowing monstrosities which they appear in the North Transept, where they sit glowering and roasting?” As one interesting side note in modern historiography, the painted plaster casts of the Parthenon Frieze in the Greek Court, by contrast, had to be removed due to negative public response, even though it was officially stated that the coloration was for experimental purposes (Jones 1854; Hrvol Flores 2006: 93; Piggott 2004: esp. 109-112). According to a contemporary news magazine “color was feared like the small-pocks” (Piggott 2004: 81). The “glaring” colors of the Nineveh Court were attacked by Samuel Sotheby, who pointed out that in Layard’s descriptions the original colors of the excavated places would have been rather ‘delicate’ and ‘occasional’ (Piggott 2004: 87). William Rossetti is said to have “hated” the Nineveh Court, and called it “an oppressive nightmare Life in death,” finding the colors “hard, glaring and uncombined.” (Piggott 2004: 111).

The notion of the “heater” is significant: F. Bohrer has recently discussed the impact Layard’s first discoveries had on the theatrical plays which were now able to adapt ancient Near Eastern decor on the stage (Bohrer 2003: 178-181). The stage decoration for “Sardanapalus, King of Assyria” (1853-1854), opened at the Princess Theatre in June 1853 (Cole 1859; Kregel-Strudthoff 1981), only one year before the Nineveh Court in Sydenham Palace and included a colorful imaginative palace of Sardanapalus and a view of Nineveh in the distance. It was performed sixty-one times in its first year, and an additional thirty-one performances in 1854 and made “Nineveh spring out of Mr. Layard’s monumental book” (Bohrer 2003: 180). It was director Kean, who “einer altertumswissenschaftlich fundierten Ausstattung zu breiter Anerkennung und Weiterwirkung verholfen hat” (Kregel-Strudthoff 1981: 3). Kean, born into an actor’s family and himself an Eton student and member of the society of antiquarians, was later even labeled the greatest archaeologist of the day (Kregel-Strudthoff 1981: 4). The sketches for the stage decorations and sets, designed by Grieve and executed by Gordon, Loyds, and Days, are preserved today in the Victoria and Albert Museum and indicate that colors were used to paint the ancient Assyrian interiors.

One shudders to think of the generations who groaned beneath the yoke of these sanguinary reds, implacable blacks, and cruel blues ... There is only one class of visitors who will discover the slabs in the Nineveh Court to be really relieved at all, and that is the blind. Their sense of touch may ascertain the inequality of the surface; but those driven to trust to their eyes only in the examination of works of art will take these famous restorations for nothing more than a flat wall painted, and that not-precisely in a style calculated to atone for the sacrifice of the relief; for the same anti-Eastern gaudiness prevails here which characterises their gigantic neighbours. The remark of a neat little country maiden, 'These men look as if they'd got on clean white pinafores,' is about the highest praise that can be bestowed on them. ... The more one contemplates this great eyesore of the Crystal Palace ... the more we must wonder that any artists could be found to execute it. Want of time maybe justly pleaded ... instead of too little time these gentlemen had infinitely too much, and, since taste could not stop them, it is pity want of pleasure did not (Anon. 1855: 163-4).

Contrasting opinion appeared in an anonymous review in July 1854, just a few weeks after the opening. Here, the commentator praised the educational values of the installations (Anon. 1854a: 246). It is apparent that the number of artists who used the sculpture galleries in the British Museum decreased dramatically between 1849 and 1870 (Jenkins 1992: 31), while the number of visitors in the Crystal Palace exponentially rose. In 1857, the Crystal Palace collection of casts was by some accounts considered one of the "best in the world" (Jenkins 1992: 233).

The aesthetic debate focusing on "taste" overlaid discussion about how much was painted in the original reliefs. It is significant that judgments on the "taste" of the Assyrians soon followed. In 1854, R. Westmacott (1854: 28) wrote, referring to Assyrian monuments, that

... for the further we go back to *barbarism* in art, or to the infantry of art, the more surely we meet with coloured sculpture [emphasis in original].

On May 5, 1855 Fergusson countered that those who viewed the polychromy of Assyrian palaces as barbarous were simply revealing their own bleak sensibilities. He claimed that he could

... perfectly understand that a person accustomed to the grey atmosphere ... or the smoky dinginess of London, finding such decorations too brilliant for their enfeebled nerves ... If anyone likes to assert that the taste of the Assyrians was bad, and their art barbarous, that is a matter of opinion which I do not propose to discuss at present (Fergusson 1855).

In reviewing the history of polychrome casts of ancient Near Eastern palace reliefs in the second half of the nineteenth century, we can observe that polychrome casts became a common feature in European public collections, where they were placed alongside original reliefs. The phenomenon of the painted plaster cast is an important feature in the mindset of the late nineteenth century museum display (e.g., Aldenhoven 1896; Kader 2004). Three nineteenth century painted plaster casts of palace reliefs from the Neo-Assyrian palace of Nimrud are preserved today in the storerooms of the Vorderasiatisches Museum in Berlin (**Figure 2.4**). Long hidden in the storerooms, the backgrounds of the reliefs are painted green, while the coat of winged demons has alternating colors and human skin a reddish color. A hunting scene from the same palace has an elaborately rich coloration on the horse trappings. The hair and beards of the bowmen in the cart have been painted black while their clothing is white and skin color again a reddish color. Equally, the “Assyrian Room,” which opened in 1864 in the Glyptothek in Munich, featured polychrome colossal Lamassus and painted Assyrian scenes alongside even original limestone slabs from Nimrud (Brunn 1887; Gebhard 2009: 440 Fig. 4).²⁹

²⁹ The same building was already home to a painted miniature plaster version of the pediments of the temple of Aphaia at Aigina, c. 500 BCE, by Klenze and Ohlmüller, to which a new version was given by Furtwängler in the early twentieth century. In nineteenth century Germany, there were two main centres of polychromy research, one in Munich, and later a second one in Dresden (Wünsche 2007).



Figures 2.4 Painted Plaster Cast of an Assyrian Palace Relief, nineteenth century, Vorderasiatisches Museum, Berlin (Photo: A. Nagel)

Even though most of the polychrome plaster casts displayed in the nineteenth century are no longer preserved, we can get glimpses of the palette and patterns of the application of polychromy on the casts from contemporary descriptions and reviews, as well as from pictorial documentation.³⁰ It is important to stress that these color reconstructions were artistic creations in their own right. Their contribution to our understanding of the original polychrome palette of ancient Near Eastern environments is, therefore, rather limited. The fact that these casts were fully colored does, however, attest to the overall polychrome treatment of the original monuments, which had been excavated only a few

³⁰ Under what circumstances these painted casts in German museums either landed in storerooms (as in Berlin), or were destroyed in World War II remains to be studied.

years earlier. It also attests public interest in the debate on the polychromy of ancient Near Eastern stone reliefs. Unfortunately, no records are preserved recording the process and the decisions that led to reconstructing the ancient color applications.

... Meanwhile, back in Paris and Khorsabad: The French Approach to Ancient Near Eastern Polychromy

Across the Channel in Paris, evidence for the polychromy debate of the 1850s is abundant. Paris had already been the foremost European center of discourse on polychromy relating to Greek, Roman, and Egyptian monuments. In 1822, Franz-Christian Gau (1790-1853) had exhibited a series of brightly colored studies of ancient Egyptian facades at the Paris Salon (Gau 1822). Gau was a close friend of Jacob Ignaz Hittorf (1792-1867), one of the most prominent defenders of ancient Greek sculptural polychromy. Hittorf had displayed the first polychrome reconstructions in Rome in 1824. In the same year he delivered a lecture including his observations on paint at the Académie des Beaux-Arts in Paris. Hittorf's many publications on polychromy that followed in the 1830s, and his massive monograph on a temple in Selinus in Sicily made him among the most prolific authorities in that matter on the European continent (Hittorf 1830, 1846-51; cp. Hammer 1968; Schneider 1977; Middleton 1982).

Victor Place, who excavated in Khorsabad between 1852 and 1855, devoted a special chapter in his *Ninive et l'Assyrie* to the polychromy of the reliefs discovered there (Place 1867-1870, vol. I: 82-4). We have seen above that Place, along with Botta, Flandin, and Layard, made frequent reference to remnants of paint he observed on the

reliefs. Yet when it came to his subsequent presentations of the issue of polychromy on Assyrian monuments he drew back from the trend to revel in colorful constructions. His personal aesthetic predilections may have been one reason for his “whitewashing” of the Near Eastern palaces. Already his first comment on the subject of polychromy is critical of recent approaches towards repainting the past in London, Munich, and elsewhere:

The coloring of the bas-reliefs is a delicate issue, more relevant to pure decoration than construction. It is therefore important to know to what extent this practice was part of the Assyrians' customs, and whether or not they felt it necessary to enhance the intrinsic value of their sculptures by partially or totally coloring them. Several people, *in unnecessary attempts to restore them*, did not hesitate to apply color on the entire surface of the bas-reliefs, including the weapons, the clothes, the faces, the flesh, the beards and the hair. *It seems to us that this is going much too far*. There is no doubt that polychrome sculpture has been known since ancient times, and that the Assyrians did use such a natural method of depicting [emphasis mine].³¹

Place was surely influenced by the Parisian environment in which discussion of the color phenomenon was highly charged with aspects of Orientalism. In retrospect, regarding the issue of polychromy in Neo-Assyrian palace reliefs, Place was following only the lines of vagueness that had characterized Flandin's statements on ancient Near Eastern polychromy. In the plates accompanying Place's text volumes, all stone sculptures on the front of the Gate of the Palace of Sargon at Khorsabad are depicted as white (Place 1867-1870).³²

Recently, Batchelor has commented on nineteenth century polemical writings in which “chromophobia” is evident. One good example is the 1867 publication *Grammaire*

³¹ “Le coloriage des bas-reliefs est une question délicate qui appartient à la décoration pure plutôt qu'à la construction. Il est donc important de savoir quelle part les assyriens en ont tiré, et s'ils ont cru nécessaire d'ajouter au mérite intrinsèque de leurs sculptures le secours d'un coloriage général ou partiel. Plusieurs personnes, *dans la restaurations plus ou moins justifiées*, n'ont pas hésité à étendre des couleurs sur toute la surface des bas-reliefs, armes, vêtements, figures, cheveux, barbe et chevelure. *Suivant nous, on est allé beaucoup trop loin dans cette voie*. Que la sculpture polychrome ait été connue des temps les plus anciens, et que les Assyriens aient pratiqué un procédé aussi naturel d'imitation, cela ne fait doute pour personne” (trans. mine).

³² The illustrations were created by Felix Thomas (1815-1875).

des arts du dessin by the Parisian critic and color theorist Charles Blanc (1813-1882). According to Blanc color, although it has always been there, signified an “internal threat, an ever-present inner other which, if unleashed, would be the ruin of everything, the fall of culture” (Batchelor 2000: 23). Batchelor has tried to identify a direct link between ancient philosophers and other authors like Pliny to these nineteenth century philosophical discourses on color. In the words of Batchelor, Pliny had placed color “at the wrong end of the opposition between the occidental and the oriental, the Attic and the Asian, in a belief that the rational traditions of western culture were under threat from insidious non-western sensuality” (Batchelor 2000: 29).

In a volume on “Chaldea and Assyria,” in one of the most popular encyclopedias on the ancient arts for the educated European, *Histoire de l’Art*, published in 1890 by George Perrot (1832-1914) and Charles Chipiez (1835-1901), the authors took their own stand on the issue of polychromy. They argued that in Egypt

hardly a square inch of surface can be found over which the painter has not drawn his brush, [while] elsewhere, in Greece for instance, we shall find him more discreet, and his artificial tints restricted to certain well-defined parts of a figure or building (Perrot and Chipiez 1892: 244).

The question that a rose was whether the Assyrians were following the Egyptians or whether they would “strike a line of their own, and [would have] set an example of the reserve that was afterwards found favor in Greece” (Perrot and Chipiez 1892: 245). The answer given was clear for them:

The Assyrian reliefs were coloured, but they were not coloured all over like those of Egypt; the grain of the stone did not disappear, from one end of the frieze to the other, under a layer of painted stucco. ... The sculptor of Assyria was as ready to mix colour with his contours as his

confrère of Egypt, but he made use of it in more sober and reserved fashion (Perrot and Chipiez 1892: 245, and 249-50).

The Debate on the Polychromy of Ancient Near Eastern Monuments in the Twentieth Century

The popularity of displaying painted plaster casts alongside original monuments of ancient Near Eastern art in museums declined by the end of the nineteenth century. The Nineveh Court burned down in 1866 and was never rebuilt. A statement by the German scholar Graf referring to the habit of displaying painted casts in general, in 1907 is exemplary in the judgment of changing aesthetics:

A white plaster cast is honest, a painted one an illusive baublerie. Perhaps it would be a pleasant décor in a living room; in a museum it does not belong.³³

Throughout most of the twentieth century, there was rather little interest in synthetic, much less theoretical discussions of the original polychromy of ancient Near Eastern monuments. In his monograph on Assyrian glazed objects, Walter Andrae (1875-1956) summarized some general remarks on colors in Assyrian art (Andrae 1923: 1):

Taken individually, the colors are often so abundant and shimmering that it is impossible to observe them from a close distance without one's eyes hurting. And yet, taken together, they are necessary and remain indispensable to the whole.³⁴

³³ "Ein weißer Gipsabguss ist ehrlich, ein bemalter eine täuschende Spielerei, sie kann vielleicht erfreulich in der Ausstattung von Wohngemächern wirken, in ein Museum gehört sie nicht" (trans. mine). Extracted from a lecture, delivered in November 1907 in Jena, Germany, cited in Kader 2008: 235-6.

³⁴ „Im einzelnen sind die Farben oft so übermäßig und flirrend, dass es unmöglich ist, sie ohne Augenglimmern aus der Nähe zu betrachten: Und doch: im Gesamtbild werden sie notwendig und unentbehrlich“ (trans. mine).

Colored reliefs continued to be excavated in private houses at Assur (Andrae 1923: 15 and pl. 10; Fig. 7) alongside polychrome figurines (Andrae 1923: 27 and pl. 30). All the evidence that Andrae discovered might have opened up the possibility of wide ranging studies about polychromy in the ancient Near East or specifically its place in the Neo-Assyrian environment. Ironically however, Andrae designed a reconstructed Assyrian palace interior for the Vorderasiatisches Museum in Berlin, which opened in 1931. For this presentation, Andrae rejected the incorporation of any of the painted plaster casts of orthostat reliefs that had previously been on display in Berlin. Instead he installed original orthostat reliefs on the walls of this gallery. They were placed against a deep red painted background. Plaster casts of winged Lamassu guardian figures from the British Museum completed this display, but were left uncolored (Jakob-Rost 1992).

One of the most influential twentieth century scholars working on ancient architectural and sculptural polychromy, Patrik Reuterswärd (1886-1971), decided not to cover the ancient Near East (Reuterswärd 1958; 1960). This is a significant index of dampening of interest in polychromy in the ancient Near East broadly speaking at mid-century. In 1972, a conference was held on "The Realms of Colors," designed to explore color in the literary traditions of major world civilizations (Portman and Ritsema 1974, p. VII). The eleven papers are valuable contributions to the study of color through literary texts, including one on conceptions of color and color symbolism in Homeric Greece (Rowe 1974), a paper on colors in Jewish tradition (Scholem 1974), and one on light and color in nineteenth century Iran (Corbin 1974). These interesting presentations do not deal with the material of visual record and furthermore do not incorporate central Mesopotamia/Iran of ancient times in their literary reviews.

During the second half of the twentieth century, a small number of scholars kept the issue of color in ancient Near Eastern art alive. Landsberger (1967) published a landmark study on color terms in Sumerian and Akkadian. Moortgat (1959) and Ebeling (1971) had summarized the evidence for wall paintings across the pre-Achaemenid Near East. Using Landsberger's study, Ebeling incorporated some material about the colors referred to in ancient texts. Landmark studies on ancient Near Eastern wall paintings followed soon (Tomabechi 1980; Nunn 1988).³⁵

The original polychromatic aspect of three dimensional sculptures or reliefs, by contrast, was treated during these years only briefly. Paley (1976: 10-11) commented on these issues in his publication on Neo-Assyrian palace art, in which he became a strong advocate of a total polychromy of the Assyrian reliefs. Nunn (1988: 229-34) also discussed the issue. Notably, she extended her study to incorporate the Achaemenid period by citing observations on the polychromy of the reliefs at Persepolis that had been just recently published by Tilia (see below, Chapter 4). Moorey (1994: 326) offers a brief analytical overview of the material evidence for polychromy on ancient Near Eastern relief sculpture making full use of the Persepolis material revealed by then. In addition, Moorey reviews the state of research on pigment material sources and analysis available to him at the time (Moorey 1994: 79-105). A pioneer in the analysis of pigments from painted stone sculptures of pre-modern times was Rutherford John Gettens. Gettens recognized the importance of the conservation of the materials and pigment analysis early on, and in his study of the evidence from Buddha statues in Afghanistan he offered an

³⁵ This interest in ancient Near eastern mural painting has continued with the work of Albenda (2005). Again, this deals only with pre-Achaemenid evidence. See, also Tomabechi 1983a, Tomabechi 1983b.

important model (Gettens 1937-38). Gettens was particularly influential in the formation of collections of pigment samples from Asian sites.

Even for the Neo-Assyrian and Neo-Babylonian empires, where evidence for the polychromatic aspect of the relief sculptures continued to be excavated, no systematic initiative has to this day been started to reopen the old question of whether the monuments were only partially or entirely painted.³⁶ The few discussions on Achaemenid Persian polychromy (see below) remained therefore largely isolated.

In sharp contrast to this situation for the Near East, the twentieth century saw great progress in the investigation of aspects of ancient Egyptian polychromy, painting techniques, color, and color symbolism. In *Ancient Egyptian Materials and Industries* Alfred Lucas (1867-1945), laid the groundwork for a technically advanced investigation of ancient Egyptian painting materials (1926, 4th ed. 1962).³⁷ Between 1980 and 1991, the German-Egyptian multi-disciplinary collaboration project *Zusammensetzung altägyptischer Farbpigmente und ihre Herkunftslagerstätten in Zeit und Raum* (Blomböer 1994) set new standards in the systematic study of ancient Egyptian pigments and colorization, which is unsurpassed today.³⁸ Major conferences on the role of color in Egyptian culture have been held in the last two decades in Europe and in the UK, in 1996 (Tefnin 1997; Davies 2001) and 1998 (Collinart and Menu 1998). A number of papers

³⁶ E.g., for polychromy on monumental stone sculptures from Nimrud: Stearns 1961: 20 n. 40 with references; Reade 1979: 18; Reade 1983: 29-30 figs. 22, 24. Important evidence, useful for comparison, like the well preserved wall paintings from a Neo-Assyrian Palace at Til Barsip in Syria was published in the twentieth century (Thureau-Dangin and Dunand 1936; c.p. Abbate 1994; pigments from the site: Granger 1933), but has not been discussed or studied in relationship with the colors on the carved stone monuments found nearby. Blue painted horses on the wall paintings at Til Barsip led to the suggestion that Assyrian kings dyed their real horses blue (Reade 1979: 32), an interesting hypothesis—not picked up, however, by later scholars.

³⁷ Various Reprints. The standard handbook has been superseded by Nicholson and Shaw 2000. See here especially the chapter ‘Painting materials’ (Lee and Quirke 2000). Important works on color in ancient Egyptian art include Kees 1943; Schenkel 1963, Forbes 1965; Baines 1985.

³⁸ Some 1,400 samples from 145 monuments from the mid-third millennium to c. 96 CE were analyzed.

have dealt with aspects of the symbolism of colors in specific ancient Egyptian contexts (e.g., Baines 1985; Aufrère 1991; Lauer 1993). All these publications, and an increasing demand for detailed investigations, have contributed to a greater awareness among all experts involved. Two comprehensive works by P.R.S. Moorey (1937-2005), *Materials and Manufacture in Ancient Mesopotamia: The Evidence of Art and Archaeology* (1985) which includes a small section on glazed materials, and *Ancient Mesopotamian Materials and Industries: The Archaeological Evidence* (1994) can be seen as the equivalent of Lucas in the field of ancient Near Eastern studies.

Since 1982 Volkmar von Graeve, followed by Vinzenz Brinkmann and an interdisciplinary team have worked together with the Doerner-Institut of the Bayerische Staatsgemäldesammlungen, supported by the *Deutsche Forschungsgemeinschaft*, to investigate aspects of ancient Greek polychromy (e.g., Brinkmann 2003). In France, Denmark, Italy, and Greece projects focusing entirely on painting and polychromy have been initiated by Philippe Jockey, Agnes Rouveret, Jan Stubbe Østergaard, Paolo Liverani, Charikleia Brekoulaki, and Ioanna Kakoulli, respectively (e.g., Jockey and Bourgeois 2001, 2003, 2005; Bourgeois et al. 2007; Rouveret and Walter 1998; Rouveret et al. 2006; Liverani 2005; Brekoulaki 2000, 2006a, 2006b; Kakoulli 2009).

It is only very recently that a new wave of systematic analysis of polychromy in any ancient Near Eastern context has been undertaken and the impetus has come mainly from conservation scientists and field archaeologists (e.g., Shaer 2003; Kidd et al. 2004; Karmous et al. 2006; Paley and Hendrix 2008; Bollati 2008; Gebhard et al. 2009; Lippolis 2009). Positions on the extents of polychromy on ancient Near Eastern stone monuments, remain, however, mainly unchanged. It seems, we have not made much

progress from the days of Layard. A recent curatorial statement is symptomatic of the still rather hampered attitude towards questions of polychromy and certain misconceptions of ancient Near Eastern palace reliefs: “Although little paint survives today, some figures *may* have been completely colored or, possibly more generally, paint was used for special effect. Four principal colors were used: red, blue, black and white” (Collins 2008: 27, emphasis mine). It should therefore not come as a surprise that nearly all movies set in ancient Near Eastern interiors, imaginative as they are, continue to favor almost exclusively white monuments (**Figure 2.5**).³⁹

³⁹ Early examples include scenes set in ancient Near Eastern interiors such as *Intolerance* (D. Griffith, 1916), *Alexander the Great* (R. Rossen, 1955) and *Solomon and Sheba* (K. Vidor, 1959). Latest examples include the monuments depicted in the triumphal procession of Alexander in Babylon, as depicted in *Alexander* (O. Stone, 2004).



Figure 2.5 Assyrian winged demons on the set of the mass marriage at Susa from *Alexander the Great* (1955) (after Elley 1984: 72 Fig. 44).

Today, scholars are well aware of how fruitful it can be to apply a combination of methods from various scientific fields. Systematic investigations into the role of polychromy on the monumental sculptures of the ancient Near East are still lacking but impacts from the neighboring disciplines can assist us in the process and show that progress can be made if collaboration takes place. Foremost are studies on how to reconstruct certain aspects of polychromy in Egyptian art (Jacksch 1985; Davies 2001; Colinart and Pagès-Camagna 2001; Tanre 2008), Greek and Roman statuary (e.g., Hendrix 2000; Brinkmann and Wünsche 2004; Posamentir 2006; Brinkmann and

Wünsche 2007; Jockey 2007; Abbe 2008; Jockey et al. 2009), and environment (e.g., Béarat et al. 1997; Villard 2002; Tiverios 2002; Cleland and Stears 2004; Fridell Anter 2006; Kottaridou 2006; Knuutinen et al. 2007; Zink and Piening 2009; Bradley 2009; Aliatis et al. 2009; Aliatis et al. 2010), the ancient Chinese Terracotta Army (e.g., Yongqi et al. 2001; Blänsdorf 2005, Blänsdorf 2008; Portal 2007), and Gothic architecture (e.g., Weeks 1998; Verret and S teyaert 2002). In Egyptian, Greek, and Roman archaeology scholars today are able to build upon an earlier tradition of comprehensive studies (e.g., Chaptal 1809; Wallace 1927; Caley 1946; Dimitriou 1951; Reuterswärd 1958; 1960; Augusti 1967; Yvantidis 1984) that is nearly entirely lacking for the field of Near Eastern archaeology.

Documenting and Preserving the Paints of the Assyrian Palaces

It is impossible to review the historiography of polychromy and paint on reliefs in the last two centuries without referring to efforts that were undertaken to preserve the surfaces of the monuments.⁴⁰ When de Longpérier in the Louvre in February 1847 documented traces of paint on the reliefs from Khorsabad, he commented at the same time on their fragility (see above). While his colleague in London, British Museum curator Hawkins, commented likewise on the fragility of the surface of the stone reliefs (letter from August

⁴⁰ Already before the first Assyrian palace reliefs and colossal statues had reached Europe, it was reported that J. Bonomi (see above), who would later become one of the foremost authorities on Egyptian wall paintings, had made an impressive number of molds from ancient Egyptian sculptures and wall reliefs in order to paint casts in London when traveling with Robert Hay throughout Egypt and Nubia in the 1820s (David 2000: 98). During the process of mold-making from the originals, it is reported that pigments were removed from them. A similar fate befell the colorful reliefs from the temple of Karnak, where well-meaning workmen coated the reliefs with a varnish that soaked away nearly all the paint, leaving the surfaces almost white (Waxman 2008). Casts of a relief from the temple of Beit el-Wali, Lower Nubia, are still, re-painted in 1952 by Douglas Champion, on display in the British Museum. The repeated mold-making of ancient stone reliefs will feature again when we discuss the situation of Persepolis (see below).

21, 1847), it is known that at least one set of casts must have been made before 1849 (Reade 2008: 14). Furthermore, it is reported that Layard, who would have had the best opportunity to *document* the colors on the monuments at the moment of their emergence, *whitewashed* panels on the site so that he could draw them better (Reade 2000: 614 n. 42).⁴¹ Adding to the endangerment of evidence, two stone bulls excavated at Khorsabad, acquired in 1851, had to be “left outside, partially exposed to the weather under the Museum colonnade”, owing to the lack of space, before they found their new home in the British Museum (Jenkins 1992: 158).

With the many requests for casts, the curators in Paris and London faced similar problems. Longpérier became increasingly concerned about the fragility of the surface of the originals and refused to have moldings made for commercial purposes (Letter November 8, 1850).⁴² In May 1851, de Longpérier contacted the chemist J. Reiset to learn whether the process of molding would harm the surface of the originals.⁴³ After receiving Reiset’s answer, de Longpérier became hesitant to embark on new mold-making experiments, and in June 1854 the department of cast makers at the Louvre was subordinated to the direction of the department of antiquities (Rionnet 1996: 47). That these concerns remained only episodic is evident, however, from a detailed investigation into the correspondence between London and Paris concerning the production of casts for exchange. Official requests for taking molds of original monuments in order to duplicate

⁴¹ This is in no way exceptional. Another modern treatment of ancient sculpture is reported for the sculpted panels of the Amazon frieze of the Mausoleum of Halicarnassus, which, when removed in 1845, “were covered with thick whitewash which preserved them” (Jeppesen and Luttrell 1986: 207; See also Jenkins et al. 1997: 38; Cook et al. 2005: 30. The monuments from the Mausoleum were found with abundant traces of paints. Jenkins 2006: 39 Figs. 20-22; Jenkins 2006: 218 refers to the drapery of a colossal seated figure coated in purple paint.

⁴² Rionnet 1996: 45 n. 19. Although a cast workshop had existed in the Louvre since the early nineteenth century, it was only in the 1850s that activities and demands enormously increased, mainly due to the arrival of the large number of ancient Near Eastern antiquities.

⁴³ Rionnet 1996: 40 and 45 n.17; Letter from May 10, 1851.

and paint them were made in subsequent years by the “Crystal Palace Company,” represented by the very same James Fergusson who had claimed that at least in Paris the making of molds had done no harm to the originals in the past (letter from August 8, 1853), as well as foreign institutions like the Prussian government in Berlin (Reade 2008: 14). As Reade has noted recently, Hawkins continued to be resistant to new molds being made for reasons of the sculptures’ fragility (Reade 2008: 14 referring to a letter of Hawkins, December 7, 1853). On December 10, 1853, the Trustees of the British Museum, however, agreed to allow more molds to be made, but required protected with tin foil wherever color appeared (ibid.).

The requests by Fergusson and Layard for casts for their polychrome vision at the Crystal Palace in Sydenham and their negotiations led to mold-making from original reliefs in Paris in November 1853 by Pierre-Laurent Micheli.⁴⁴ In 1855, casts of all Nimrud sculptures became available for sale (Reade 2008: 15). However, already a few months before (on August 18, 1853), though, complaints were filed by Layard against the authorities in the British Museum, for an inquiry regarding the ‘cleaning’ of an Assyrian head in the galleries (Reade 2008: 15).

J. Siegel has recently collected some primary sources on a debate about the display and the cleaning of the Nineveh reliefs that took place in 1857 (Siegel 2008).

⁴⁴ In November 1853 a set of casts was made of the Khorsabad bulls (AO 19857 and AO 19858; Rionnet 1996: 121 n. 13-14), the winged genius (Rionnet 1996: 122 n. 16), and others (Rionnet 1996: 121-2). Also, from monuments from Nimrud and Nineveh casts were made (ibid. 124-125). The British criticized the molds for their imperfection (Rionnet 1996: 129; Letter 14th November 1854), but the Louvre refused to produce new molds (Rionnet 1996: 21 n. 35). In exchange for the casts that were allowed to be taken earlier, Lottin de Laval was allowed to make casts of the British Museum Nimrud monuments. The casts were obviously displayed along the originals in the Louvre, joined by another cast of a bull, executed in 1856 by Maximilien Pellegrino Togneri, although they are not mentioned in the contemporary guide books. The cast collection of the Louvre was in fact, kept in the neighboring rooms to the Assyrian rooms. From the new acquisitions from Place’s excavations at Khorsabad, a new series of monumental sculpture arrived in Paris in 1856 (AO 19859), and new casts were molded and available for sale by 1864 (Rionnet 1996: 121: Cat no. 12).

Here are excerpts from the discussion and the answers given by Hawkins in a public hearing:

Q. "Have the alabaster slabs in the Assyrian Room undergone any change?"

A. "They are getting dirty of course, but I am not aware that they are damaged in any other respect. The material is such that any application of water must necessarily injure them."

Q. "What means are taking for cleaning them?"

A. "They have never been otherwise cleaned than merely being dusted with a feather, or something of that kind, they are not allowed to be touched with anything hard. We touch them as little as possible."

Much has been written recently about the washing of stone sculpture in the British Museum in the nineteenth century, and often it seems that personal dislikes figure between the museum curators and those who were considered experts on material and deterioration (e.g., Oddy 2002; Jenkins 2001: esp. 4-6).

Conclusions

Since the arrival of the first ancient Near Eastern monuments in European museums, scholars have only occasionally dealt with the matter of the original polychromatic treatment of the palace reliefs. There are practically no theoretical writings on the issue of polychromy in this sphere. The situation stands in sharp contrast to the lively polychromy debate that has focused on ancient Greece, Rome, and Egypt. In some respects, however, the nineteenth century layman was more educated on certain issues regarding the public presentation of ancient Near Eastern polychromy than we are today. The mid-nineteenth century displays of the polychrome ensemble at the Crystal Palace in

London (1854-1866), and painted casts in other European collections (in Munich, Berlin and elsewhere) provided popular settings in which discussion would have been provoked. The brightly painted casts of those days were excellent examples of the public education that nearly all contemporary museum displays fail to offer as a means of educating the public about ancient polychromy. In that sense, the nineteenth century can therefore be seen as an enlightened era. While this mission of public education was laudable, an appreciation of the polychromy of ancient Near Eastern monuments competed with the imperatives of preserving and the documenting the accuracy of the presentation of the material record. Examples like the ones introduced serve as reminders that histories of color are only as firm as the available evidence, which can change dramatically with new finds and new technologies applied in the determination of pigments and surface coatings.

In the chapters that follow, the case study of the Achaemenid Persian Empire takes the stage. The sites of Persepolis and Susa (and their larger imperial context) have much to offer in a fresh perspective on polychromy in the ancient world and on the competing factors and tensions between preservation and presentation.

CHAPTER 3

THE POLYCHROMY OF ACHAEMENID PERSIA IN THE NINETEENTH CENTURY:

ANCIENT LITERARY TESTIMONY AND MODERN DISCOURSES

The goal of the next two chapters is to offer a historical, historiographical, and documentary overview of evidence for polychromy and gilding at the imperial centers of Achaemenid Iran—focusing on the arena of Greater Persepolis in Fars and on Susa in Khuzestan—all in the context of a more expansive network of sites at the heart of the empire, and within the context of ancient Near Eastern archaeology as introduced in Chapter 2. In this chapter, I will present relevant information from ancient sources and then proceed first to the testimony of early modern travelers and on to the investigations of nineteenth century antiquarians and excavators. The documentary evidence collected here is critical to a fuller appreciation of the original polychromy of Achaemenid Persian capitals; it also reveals the significance of perceptions (a) of the polychromy of ancient Near Eastern palace architecture in general, and (b) of the polychromy of ancient Persia within the larger general discourse on the historiography of the archaeology of Achaemenid imperial sites. Heretofore, the importance of polychromy in that discourse has remained largely hidden.

Enter: Persepolis in context

The history of the Achaemenid Persian Empire between c. 550 and 330 BCE (Briant 2002; Allen 2005; Kuhrt 2007) is inextricably linked to the vast heartland of the present-

day southwestern Iranian province of Fars, particularly to an area in north western Fars (**Figure 3.1**). As the oldest capital of the empire established by Cyrus II in the mid-sixth century B CE, Pasargadae (Elamite *Batrakataš*, also *Bašrakada*) ceded its political and economic status to Persepolis. Pasargadae did, however, still figure prominently among the sites in the Fars administration network at the close of the sixth century seen in the Persepolis Fortification tablets, as a site where specific religious activities occurred (Henkelman 2008: 118 and 390). The site of Anšan (modern Tall-e Malyan), some 45 km northwest of Persepolis, long home to an important Elamite dynasty, seems to have been largely abandoned around 1000 B CE (Potts 1999: 285). But it held iconic status as a locus of Persia (Sumner 1976).

The Achaemenid Persian Empire consisted of a “multi-capital system” (Boucharlat 2001: 114), of a multitude of important residential and administrative capitals. As the tablets from Persepolis attest, bureaucracy worked, however, mainly on a regional level. Modern scholars agree that the epigraphic evidence available suggests that each of the Achaemenid capitals, Persepolis, Susa, Ecbatana (and Babylon in modern Iraq) had administered its own hinterland with satellite villages and hamlets, which was often quite substantive. The territory of the administration of Persepolis covered the largest part of present-day Fars, an area of hundreds of kilometres (but see now: Henkelman 2008: 110), while Susa, where we lack similar rich epigraphic evidence, may have administered most places in the Susiana plain in Khuzestan. In the estimation of ancient travelers’ accounts it took some thirty-five days for a journey between Persepolis and Susa, some 500 km apart (Henkelman 2008: 114). The modern Mārūn River has been

identified as the natural border between the administrative areas of Persepolis and Susa.⁴⁵ The greater Persepolis area is therefore only one of many rings of power bases in the vast Achaemenid Persian Empire. As recent research has shown, life at Susa, the millennia old capital of the Elamite Empire was probably very much intermingled with life at the wider Persepolis area. A network of settlements linking both capitals existed (e.g., Potts et al. 2009), and there is considerable evidence of the exchange of craftsmen and commodities (e.g., Kleiss 1981; Koch 1986; Garrison in press; Henkelman 2008: 346 and passim). All of these core sites had longstanding pre-Achaemenid traditions of polychromy—in the form of, e.g., glazed bricks (Babylon, Susa), wall paintings (Anshan: Nickerson 1977), painted tiles (Median Baba-Jan in the Ecbatana area: e.g., Goff 1977), and painted sculptures (e.g., Susa). These longstanding traditions are part of the legacy to which the Achaemenids were heir when they established themselves in southwestern Iran.

⁴⁵ In later classical sources, Persepolis and Susa were indeed understood as part of one system. Cp. Strabo, *Geographica* 15.3.6: “Persepolis, next to Susa, was the most beautifully constructed city, and the largest.” (trans. Jones).

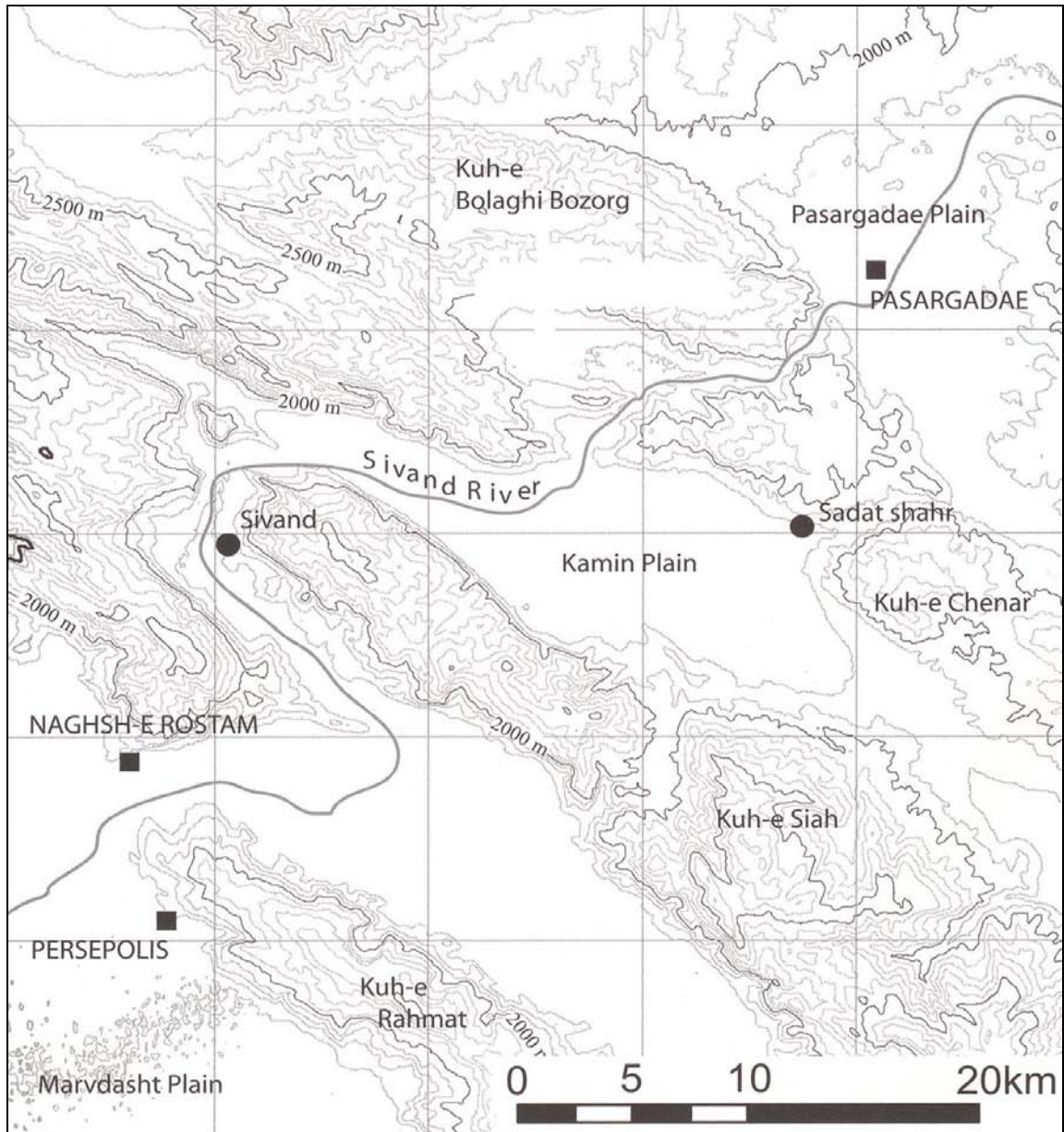


Figure 3.1 Persepolis Naqsh-e Rostam in the Marvdasht Plain, and Pasargadae in Fars, Iran (Tsuneki and Zeidi 2008: 4 Fig. 1.2)

Persepolis and Naqsh-e Rostam

Located some 40 kms north of modern Shiraz, the remains of Persepolis or Parsa on the platform of Takht-e Jamshid ('Throne of Jamshid') are visible on the eastern edge of the plain of Marv Dasht at the foot of the Mountain of Mercy, the Kuh-e-Rahmat (**Figures**

1.2 and 4).⁴⁶ Additional palatial structures, only partially excavated, and their extent still imperfectly known, appear immediately below the Takht (**Figure 3.2**). The rock-cut tombs of the Achaemenid ruler Darius I the Great (522-486 BCE) and his successors embellish the mountain cliffs at Naqsh-e Rostam only some 11 km to the northwest of Persepolis, and those of the Kuh-e-Rahmat looking down over the Takht at Persepolis itself (**Figures 3.3-5**).

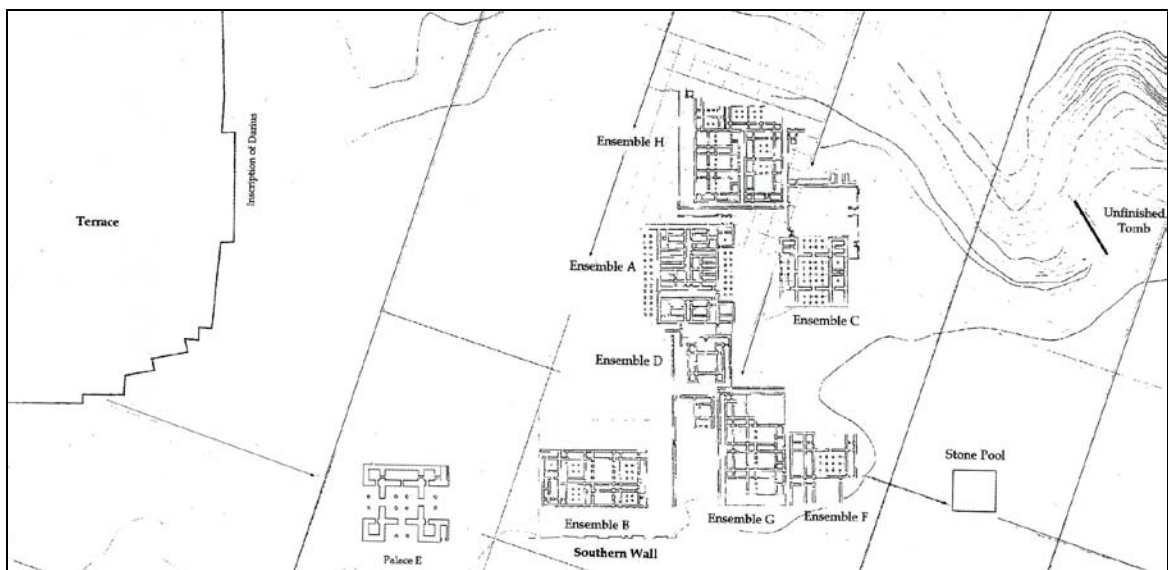


Figure 3.2 Plan of excavated structures to the south of the Takht (after Tadjvidi 1976 Fig. 22)

⁴⁶ The ancient names of the site attested in inscriptions are Old Persian: Parša (Kent 1953: 196), Elamite: Ba-ir-sa-(an/is) (Hallock 1969: 87). The site is also referred to in Elamite texts as hal-mar-ras/ri-is - a term philologists translate as fortress or citadel (Roaf 2004: 394).

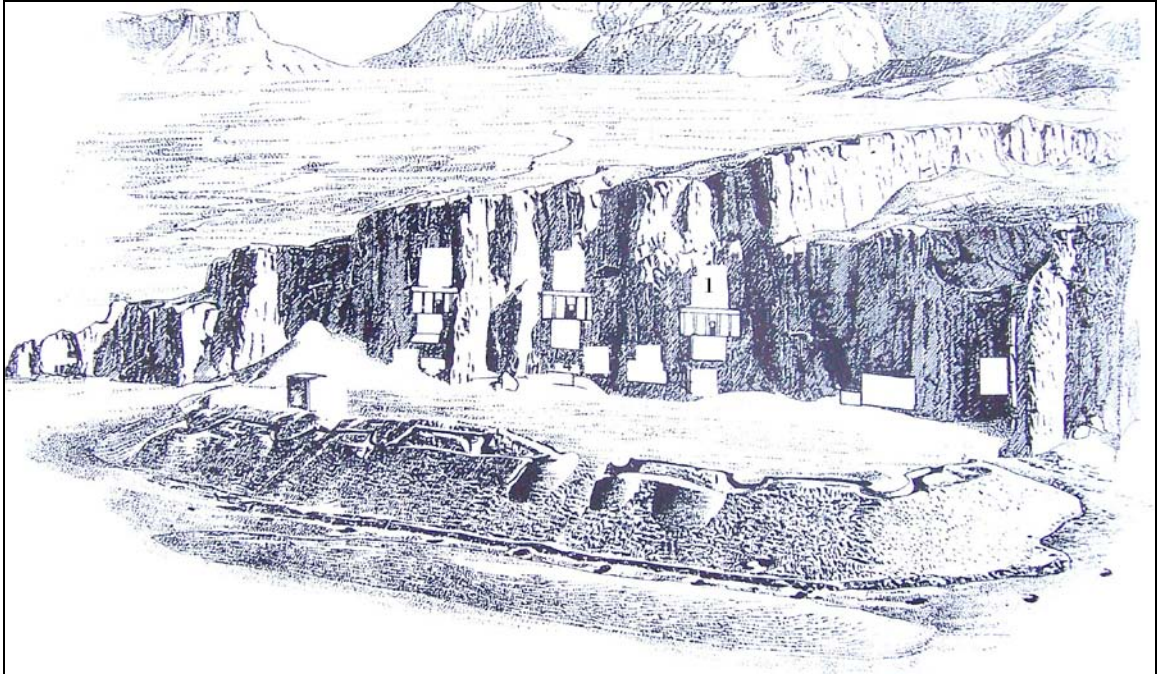


Figure 3.3 Royal Necropolis at Naqsh-e Rostam with the tombs of four Achaemenid Rulers. No. 1 is the tomb of Darius I identified by the inscriptions that accompany the sculpted reliefs (after Trümpelmann 1992).



Figure 3.4 Royal Necropolis at Naqsh-e Rostam, Aerial View (Photo: H. Rahsaz).



Figure 3.5 Tomb of Artaxerxes II (404-358 BCE) above the Persepolis Takht, 2008 (Photo: A Nagel).

Persepolis proper was part of a larger ecological environment that is defined in part by the Sivand River, further north of the platform. The Sivand River connects Persepolis to the royal necropolis of Naqsh-e Rostam, winds its way along Istakhr and other settlements (many of which are referred to in the Persepolis Fortification Tablets [PFT] in this fertile plain and continues on to the imperial site of Pasargadae in the north (e.g., Aminpur 2006; Adachi 2008; Hartnell 2010). Within the wider region, the Persepolis Fortification archive lists sites including Mtezziš, Tirazziš (modern Shiraz), but also areas further west such as the recently explored Mamasani plain (Potts et al. 2009) between Persepolis and Susa.

Persepolis and its Remains

The Greek historian Diodorus, writing in the first century BCE in the social and political context of Augustan Rome, has left us a vivid description of the general layout of Persepolis. It is our only ancient literary description, and while not detailed on specific buildings and monuments, it helps us to envision the site that Alexander of Macedon encountered during his invasion in the winter of 331 BCE. Diodorus' account describes how the private dwellings in the plain are "furnished with every sort of wealth over the years ... abundantly supplied with furniture and wearing apparel of every kind" and how the owners of these houses had much silver and gold and "dresses gay with sea purple or gold embroidery" (17.70.2-4, trans. Bradford Welles). Assuming the order of his description is correct, this information refers to the dwellings in the plain below the terrace, as he only then continues with a description of the Takht itself, which was, according to Diodorus, fortified by three fortification walls (17.71.4-5). He continues to describe the tomb complexes before describing the circumstances of the fire set by Alexander.

The ruins atop the lofty Takht have from the antiquity down to the present, been an evocative symbol of Iranian cultural heritage: a dramatic reminder of the Achaemenid dynasty, leaders of a powerful empire that ruled vast territories across Central Asia, Asia Minor, the Levant and North Africa between the sixth and the late fourth centuries BCE. There is grandeur to the architecture and planning here; Persepolis well merits its distinction as one of the world's great monuments to mankind's past. The site has been on the UNESCO World Heritage list since 1979. Paradoxically, its destruction by

Alexander in 331/30 BCE left much of the Takht architecture partially standing in its state of glory. The ruins have attracted numerous European visitors since the eighteenth century (e.g., papers in Sancisi-Weerdenburg and Drijvers 1991; Mousavi 2002). These men have left valuable comments and records about the site as they witnessed it. Many of them also collected material from the site. This fact combined with the partage protocols in place for a series of almost uninterrupted excavations conducted on the site between 1931 and 1939 (Mallampati 2005) has meant that the study of the site must take place not only in Iran but also in museums and collections around the world (see **Appendix 1**).

Today, the Takht can be broadly divided into three separate areas, i.e. the terrace platform, some 450m by 300m wide, with the remains of at least fourteen buildings (**Figure 1.4**),⁴⁷ the adjacent hill with tombs that once contained the remains of two Achaemenid rulers and their families, and the monuments from the ensembles excavated immediately adjacent below the platform (Roaf 2004: 396).⁴⁸ Recent survey work has supported Diodorus' description in revealing that access to the Takht was indeed only

⁴⁷ Buildings on the platform are referred to in inscriptions as *halmaraš* (DPf), with the individual palaces more specifically referred to as *Tačara*, suite of rooms (Dsd) and *hadiš* (DSj) “seat of power” (Brosius 2007: 25). The Apadana, the Palace of Darius and the Central Building (Tripylon)—the ancient names of which are unknown to us and have been subject to heated debates—were elevated on individual stone platforms. Modern scholars have suggested various theories about the date of specific buildings on the site (Lentz and Schlosser 1969, Lentz and Schlosser 1971; Rümpelmann 1983; Rümpelmann 1988; Koch 2001). Even though the function of many buildings is not clear, and functions may have changed over time, there is mutual consent about a chronological sequence of most of the buildings on the platform. The buildings preserved are independent structures and, though often investigated as an ensemble, have to be treated like individual monuments with independent life stories. According to Root (Forthcoming), the three elevated buildings (Apadana, Palace of Darius, Central Building) have expressed a specific set of integrated functions.

⁴⁸ It is generally agreed that the Achaemenid court spent a short time each year at the site, probably in the fall (Henkelman 2008: 7; but see Giovinazzo 1994; Tuplin 1998 and Briant 2002: 910). When the court resided here, the royal machinery would have linked up with the local administration and drew on regional resources. At these times, large sacrificial feasts (*šip*), intimately connected with the court, were held at Persepolis (Henkelman 2008: 5-8). On the whole, we must assume the Achaemenid Empire as an ‘état itinerant’ (Briant 1988), in which the royal entourage travelled between a number of sites with impressive royal camps, in a large and well organized system, over vast distances. A group of texts from Persepolis deals with festivals and animal sacrifices for Auramazdā, Humban, Mišdušiš, Pirdakamiya and “the remaining gods.” Ansi and *šip* festivals in which the local governors Parnakka and Ziššawiš were involved are mentioned (Henkelman 2008).

possible through a system of protective walls and watchtowers immediately below (Aminzadeh and Samani 2006).

According to the epigraphic sources available, all Achaemenid buildings on the platform were constructed between c. 520 BCE and the late fourth century (Godard 1952; Schmidt 1953; Krefter 1971). Alexander's destruction of the monuments on the platform in 331 BCE has long been considered an important *terminus ante quem* for any investigations of the historic fate of the site (see, e.g., Balcer 1978; Hammond 1992; Sancisi-Weerdenburg 1993; Bloedow and Loube 1997). It must be stated, though, that archaeological fieldwork has dealt rather little with post-Achaemenid activities on the platform. There is clear evidence for re-arrangement and re-use of stone material and buildings on the site in post-Achaemenid times, and decay of the site was slow (e.g., Tilia 1977: 74-76; Tilia 1978: 258 and 315; Calmeyer 1990; Wiesehöfer 1994: 68, 7; Callieri 2003; Müsseler 2005-6).⁴⁹

Ancient Literary Testimony for Polychromy

Although the palaces in the Achaemenid heartlands were colorful throughout, there is surprisingly little classical testimony that talks about color in relation to Achaemenid imperial built environments. Non-Oriental ancient sources took notice of colors in the Orient, but are often unspecific: the multi-colored rings of fortifications at Ecbatana, the old capital of the Median Empire is described by Herodotus in some detail and may serve as a good reminder that color was, however, too important to escape notice:

⁴⁹ Questions remain open for instance for a building on the southwest corner of the Takht, so-called palace H with its elaborate carved reliefs, erected "sometime after the destruction of Persepolis (though certainly prior to the Islamic era)" (Schmidt 1953: 279). See more recently, Tilia 1972: 253; Mousavi 2002.

The battlements of the first circle [of walls] are white, of the second black, of the third circle purple, of the fourth blue, and of the fifth orange: thus the battlements of five circles are painted with colours; and the battlements of the last two circles are coated, these with silver and those with gold (Hdt. *History* 1.98, trans. Godley).

From a late source we are informed about the rich ornamentation of the palaces at Ecbatana, as the Greek historian Polybius (10.27) states that the woodwork in the palace

was all of cedar and cypress, but no part of it was left exposed, and the rafters, the compartments of the ceiling, and the columns in the porticoes and colonnades were plated with either silver or gold, and all the tiles were silver (trans. Paton).

Literary sources present us with information, complex in their own ways, about mural painting and gold in the Achaemenid court environments. Herodotus claims to have seen a mural painting commissioned by Darius' engineers depicting the bridge built by Darius I across the Bosphorus showing "the whole bridge, with King Darius sitting in a seat of honor, and his army engaged in passage" (Hdt. *History* 4.88, trans. Godley). Athenaios (*Deipn.* 12.575), referring to the fourth century BCE author Chares of Mytilene, comments on "replicas of paintings of a famous myth of a Median princess and an Iranian ruler that can be found in temples and palaces, even in private dwellings" (trans. Gulick) of the non-Greeks inhabiting the empire. Ancient sources, however rhetorical they are, refer to the Persian queen living in "a golden-doored palace" (Aeschylus, *Persians* 159; cp. Hall 1989: 80-1).

Beyond these comments, the essential omission of references to color on Achaemenid monuments in the literary sources though is a indication of a general silence (disinterest?) in colors in the architectural and sculptural display that we get from

most of the classical authors. If classical or Biblical texts refer to color it is related to textiles. According to the Bible (*Esther* I. 16), for instance, the Persian king at Susa held a feast in the court of the garden of the royal palace, which was filled with “white, green, and blue hangings, fastened with cords of fine linen and purple to silver rings and pillars of marble; the beds (couches) were of gold and silver upon a pavement of red and blue, and of white and black marble.” Plutarch states that Alexander found at Susa some 5,000 talents of porphyra hermionike, “purple from Hermione,” which had been stored for 190 years and “was still fresh in color” (*Alexander* 36.36 trans. Perrin; see below Chapter 6 for further implications of this text). We will return to the implications of some of these ancient testimonia on color in the context of empirical evidence below.

Seeing Colors and Gilding in the Early Years

As we turn to the early modern travelers who bear witness to Persepolis, we must be aware of the fact that many of these individuals were well-versed in both the classics and the Hebrew Bible. Thus they will not have arrived at Persepolis (or Susa) with a strong assumption that color would be an important aspect of the remains. That said, it will become apparent below that several of the early travelers in Safavid times (c. 1501-1736) were deeply impressed by the polychromy they found at the current day court of Persia. This awareness might have made them more attuned to remnants of color and gilding at Persepolis. It remains interesting that some visitors were receptive to engagement with the vestiges of color on the ruins and others were apparently oblivious to the same evidence.

Paint and gilding on the monuments of Persepolis/Naqsh-e Rostam were observed and documented from at least the seventeenth century.⁵⁰ These observations are critical pieces of information for us, for several reasons. On the one hand, they supply precious data on the original appearance of monuments before many fragile vestiges of pigments and overlays disappeared. On the other hand, they offer valuable instruction on several issues that we must be aware of. That a specific early traveler did not comment on surface coatings does not necessarily mean that these were not there when he visited. It may just not have seemed important or interesting to him.⁵¹ As we have seen above, interest in polychromy is not universally shared. In other cases, a specific traveler may not indicate on which structures he saw traces of paint that he refers to in his writing or “documents” in a visual presentation. In some cases, evidence expressed in written form may have been meant to serve a different purpose than the same early observer’s characterization in the form of a graphic or other visual display. Finally, we cannot be sure whether what appeared to an early observer as colorant, may not have been remains of dust, vestiges of natural deterioration processes, or the like.

In one of the earliest modern preserved descriptions, Thomas Herbert (1606-1682), who visited the Takht in 1630, described what appeared to him as gold inlays:

⁵⁰ Mousavi (2002) has recently documented the overall history and exploration of excavations. I instead focus specifically on early observations of the polychromatic aspect of the monuments on the site. Early Western travelers include the Franciscan monk Odoardo of Pordenone who visited the ruins in the early fourteenth century, the Venetian Giosafat Barbaro in 1472, the Augustinian friar Antoine de Gouvea in 1602, the English John Cartwright in 1611. The Spanish diplomat Don de Garcia de Silva Figueroa (1550-1624) was the first who is known to have copied inscriptions on the platform in 1617 as did Pietro della Valle in 1621: Curtis 2007: 166. None of these published any statement on paint or gilding seen on the monuments.

⁵¹ Cp. the very brief comments by the second century CE traveler Pausanias when he describes the sculptured pediments of today’s most celebrated Parthenon on the Athenian Acropolis.

The walls ... have been illustrated with gold, which in some places is visible, the stones in many parts so well polished, that they equal for brightness a steel mirror.⁵²

Later, however, Herbert's comments on possible remains of gilding in Persepolis were considered too fantastic (Wied-Blundell 1893: 557). Nonetheless, it is important to note that Herbert was not the only one to remark on what appeared to be gilding on stone reliefs; only two generations later, in December 1685 Engelbert Kaempfer (1651-1716) visited the ruins at Naqsh-e Rostam and Persepolis, and remarked specifically on the embellishment of inscriptions in cuneiform letters:

Certain spaces in these glimmer and shine with color, as if they were once [have been erased] or filled up by metal.⁵³

According to Wiesehöfer, Kaempfer was specifically referring to the inscriptions of Darius at the south side of the Terrace (DPg = Wiesehöfer 1991: 85). Gold in cuneiform letters carved on architectural surfaces on the Persepolis Takht is also mentioned by the French travelers André Daulier-Deslandes (1654-1719) and Jean Chardin (1643-1713).⁵⁴

⁵² Herbert 1634: 59. Herbert, member of the embassy of Persia under Sir Dodmore Cotton, lived in Persia between 1627 and 1630; Ferrier 1977; Vickers 1991. This period has been known for its "art of brilliant surface ... which for the most part relies on immediate impact, whether to dazzle or startle or shock" (Welch 1973: 11). Herbert described contemporary Persia in bright colors: "In Shiraz ... the refulgent splendor of their [i.e. the Mosque's] blueness, gain admiration in the beholders ... are round like theaters, their outside styling, pargetted with azure stones, resembling turquoises ... In Qazvin ... there was the King's Palace built of raw bricks, trellised with carved windows, both painted and varnished with blue, red and yellow, mixed with Arabique knots and poesies of gold and azure" (Ferrier 1977: 81, 86). Herbert also commented on a chamber of the Shah at Ashraf near the Caspian Sea, painted by a Dutch artist only one generation before: Ferrier 1977: 84-85n.11; Carswell 1972: 77. On the social strategies of decorative allure of the palaces of Isfahan in the Safavid period see now Babaie 2008; Canby 2009.

⁵³ "Lacunae quaedam in iis aureant micant colore, quasi hoc metallo olim oblitae vel repletae fuerint": Kaempfer 1712: 338; c.p. Meier-Lemgo 1933; Hinz 1984; Wiesehöfer 1991: 80 and 87; Drijvers 1993; Haberland 2005.

⁵⁴ Daulier-Deslandes 1673: 61: "It appears that many of the characters are gilded." = "Il paroift encore à plusieurs de ces caracteres qu'il sont esté dorez." Daulier-Deslandes accompanied the French Thevenot on his trip to Persepolis; Chardin 1735: vol. 8: 321. Ferrier 1996; Cp. Mousavi 2002: 215. Chardin was jewellery master at the court of the Persian Shah Suleiman I, and studied the remains of Persepolis on three occasions in 1667, 1673, and 1674 when he was accompanied by the artist Guillaume-Joseph Grelot

Further comments on color in the inscriptions specifically on the Naqsh-e Rostam facade were, however, observed by later travelers and we now can identify actual traces of paint with modern scientific methods – at least for one specific façade inscription (see below, Chapter 4 with possible further evidence).

More detailed commentaries on preserved remains of antique polychromy on the Takht we owe to European antiquarians who visited the site in the nineteenth century. A group of English aristocrats accompanying the brothers William and Gore Ouseley (1767-1842; 1770-1844), including Robert Gordon (1791-1847) and James Morier (1782-1849) “excavated” on the Takht in May and July 1811. In direct contrast to Daulier-Deslandes and Chardin, W. Ouseley commented of his group’s findings that

... no traces of either gold or of paint were visible on the figures which Mr. Morier’s workmen brought to light ... when with him, I examined them, and should have almost imagined, from their fresh and perfect state, that they had been newly executed.⁵⁵

Reasserting a sharp impression of Persepolitan polychromy, the Englishman James Buckingham (1786-1855) stands as an unequivocal witness. After a description of the characteristic features of the monuments on the Takht and their close ties in inspiration to ancient Egyptian architecture, he states (1829, vol. 1: 493), without further elaboration that

... the sculpture at Persepolis was also painted, mostly in blue, a favorite color of Egypt, but sometimes in black and in yellow.

(Chardin 1735: vol. 9: 107). As Herbert had done before him, Chardin comments often on the colorful world of then-contemporary Safavid Persia. Describing the mausoleum of Shah Abbas II at Qom he notes: “Everything is painted in rich Moresque designs with colors lively enough to dazzle. Gold and blue is everywhere and applied so profusely that one could say it is fused together” (Chardin 1735: vol. II: 435).

⁵⁵ Ouseley 1819-23: vol. ii, 238 and 281-3; cp. Curtis (1998: 48), for the background of the expedition.

The “Father” of modern approaches to polychromy at Persepolis: Charles Texier

Today, Charles Texier (1802-1871) could be considered the father of polychromy studies in Achaemenid archaeology. Texier was not only the first to place the monuments and reliefs in a proper ancient Near Eastern context (Sancisi-Weerdenburg 1991b: 192), but he was also the first investigator to pay significant and systematic attention to the surface embellishments of the monuments. Together with his travel companions Comte de La Guiche and Comte La Bourdonnaye, Baron Texier visited the Takht and Naqsh-e Rostam for ten days beginning on January 17, 1840 (1842: xxxvii-iii; 1852: 163).⁵⁶ The stated main goal of their expedition was to provide more detailed plans of the Takht and its ruins (1842: i). Yet the observations made by Texier and his team on polychromy are very rich. One of the real triumphs of Texier’s testimony is best understood in his own words:

... Indeed, the crux of my visit to Persepolis is the positive recognition of the paintings that decorated the bas-reliefs. If I have communicated this fact with eagerness to scholars and the press, it is not based only on opinion: the testimony of my eyes alone was not sufficient for me in several places and by the application of chemistry colored parts were revived, so it was for me a fact proven and indisputable.⁵⁷

Although the preface with this statement introduces the first of two volumes in 1842 it took another ten years before the full report on the observations on the Persepolitan

⁵⁶ Texier left a graffito on the Gate of all Lands (Simpson 2004: 63).

⁵⁷ “... je ne sache pas qu’aucun fait nouveau ait surgi de cette exploration: bien plus, elle tendait, jusqu’à un certain point, à faire retrograder les découvertes que nous avons faits. En effet, le point capital de ma visite à Persepolis est la reconnaissance positive des peintures qui décoraient les bas-reliefs. Si je me suis empressé de communiquer ce fait aux savants et la presse, c’est qu’il ne reposait pas seulement sur une opinion: le témoignage de mes yeux ne m’avait pas suffi et en plusieurs endroits l’application de réactifs avait fait revivre certaines parties coloriées; c’était donc pour moi un fait démontré et incontestable” (1842: iv-v, trans. mine).

monuments was published (1852). The words by Texier above indicate, nevertheless, that he arrived at the site with some expectations of the potential recovery of evidence for color on the monuments. A few passages are sufficient to highlight points of discussion and the remarkable clearness of his presentations. After examining a particular relief depicting a king and two servants he noted:

... When I had to draw the figure of the king, followed by his two servants, I had to admit the certain, irrefutable presence of the paint of the bas-reliefs. Indeed I saw under the surface coating, which is nowadays as polished as a mirror, rosettes lightly drawn with a stylus, and that could only be the outline of a painted ornament on the coating; I saw the same ornament on the servants' hats. The king's tiara, as we know it today, is only a massive cylinder-shaped item; but we notice two holes on it that were used to seal a more decorated headgear made of bronze or a more precious metal. This one element would prove by itself that the sculpture was polychrome. Had the coating been designed to bear only one color, the ornaments that cover it would have been raised patterns, like the rosettes around the bas-reliefs; drawing simple ornaments on the sculptures with a chisel was never one of the ancient craftsmen's habits.⁵⁸

Texier is also the very first person to use a chemical experiment to get “behind” the materials employed on the surface. He experimented with acids to understand the components of the surface finishing, but unfortunately he did not leave a specific document indicating on which part of which relief he conducted his analysis.

In another bas-relief, I identified the coating I previously mentioned, which had a blackish appearance; I scraped the stone smoothly, and dissolved the dust in hydrochloric acid, as I had kept a little box of reagents. I obtained a gray residue, and threw it in a pipe that contained ammonia, and twenty-four hours later I obtained a beautiful blue-colored solution. It was, without any doubt, an application of blue ash, the base of which is copper, and which was used as an ointment on the sculptures.⁵⁹

⁵⁸ Texier 1852: 188-9, trans. M. Thiam. The full passage of his report is given in Appendix 3.

⁵⁹ Texier 1852: 189. “ Je grattai la pierre avec soin, et fis dissoudre la poussière dans de l'acide hydrochlorique, car j'avais avec moi une petite boîte de reactifs. J'obtins un residu de couleur grise, qui, jeté à son tour dans un tube contenant de l'ammoniaque, me donna, vingt-quatre heures après, une solution d'une belle couleur bleue. C'était, à n'en pas douter, une application de cendre bleue dont la base est du cuivre, qui servait de fond à ces sculptures” (trans. M. Thiam).

Texier provided a color reconstruction of a Persepolis relief--depicting a king with two attendants (Texier 1852: plate 111 (CXI) ter; **Figure 3.6**). In what became one of the most vivid and iconic modern reconstructions of the polychromy of Achaemenid Persepolis, Texier created a stunning original portrayal of this relief sculpture in a chromolithography. The rendering of the specific relief is quite faithful in composition and iconography to a motif well known from palace door jambs on the Takht.⁶⁰ The figures are set against a blue background. All details, including the skin and the hair are deliberately covered with paint; there is no part of the relief where the stone itself shines through. The garments and headdresses are elaborately embellished.

In the accompanying text, Texier stated that his reconstruction was based on observations of a number of reliefs, all depicting the same subject, though he admitted that his reconstructions do not necessarily approximate the original colors (Texier 1852: 188-90 and 222).

⁶⁰ It may have been a rendering of a doorjamb relief in the Palace of Darius (Tilia 1978: Fig. 28 or Fig. 45) or the Central Building, the only other structure which has the figure in the winged disk above the king as shown in Texier's drawing (Root 1979: 96 Fig. 12; Pl. XXV Figs. 25a and b).



Figure 3.6 Charles Texier's chromolithographic reconstruction of a doorjamb relief from Persepolis, published in 1852 (Texier 1852: plate CXI ter)



Figure 3.7 Detail, Palace of Darius, main hall, northern wall, western doorway, western jamb, showing holes for metal attachments and the hollow area for receipt of an inlaid bead probably in lapis lazuli, 2008 (Photo: A. Nagel)

Texier observed that the royal headgear depicted on some reliefs showed an interesting pattern of holes. He concluded that these may have originally served for attachments made out of precious metal (see, e.g., **Figure 3.7**, showing the holes for such attachments as well as a large cutting occupying the place where the carved royal beard would normally be; cp. Schmidt 1957: 72-3). Texier's attention to polychromy as a key element on the remaining monuments of Persepolis was prescient in many respects. This episode is also an interesting attestation of the notion of "scientific" testing at this early date, even though Texier's method and results cannot be used to verify any evidence on the original intended color here.

Texier seems to be an underrepresented figure in the historiography of Persepolis. Yet many subsequent investigators who dealt with the surface of the decorations on the Takht remained oblivious to the issue. The Frenchman Eugène Flandin (1809-1871), a painter, and his architect-companion Pascal Coste (1787-1879), visited Persepolis only a year after Texier (in December 1840 and early 1841). Their extensive documentation and study of the site did not include *any* comments on traces of pigments on the standing remains (Flandin and Coste 1851: 134-5). This is all the more remarkable in view of the profession of these two men.

Despite the habit of displaying painted plaster casts of ancient Near Eastern monuments in nineteenth century public and private collections (see Chapter 2), only one documented case attempt to restore the polychromy specifically of Achaemenid Persian stone sculpture; and even in this instance, we lack important contextual information.⁶¹ At least one painted plaster cast from Persepolis must have been on display in the Louvre

⁶¹ The cast making on monuments on the Takht in the nineteenth century will be discussed in Chapter 5.

(**Figures 3.8-9**).⁶² Lottin de Laval's nineteenth century tinted plaster cast of a Persian noble from wing A of the North façade of the Apadana, with the cast made between 1845 and 1850 after he had taken molds from a large number of relief facades on the site (see below Chapter 5) has been considered as a product of fantasy based on little evidence.⁶³ In a similar vein, there is no information available as to why the Achaemenid bull capitals recreated as part of the Assyrian palace in the upper floor of the Nineveh Court at Crystal Palace in London were rendered in blue (see Piggott 2004: 96), since Fergusson and Layard obviously had their own ideas how to paint these (see above, Chapter 2, **Figure 2.3**).

⁶² The painted plaster cast of a Persian noble from the Apadana North Façade, wing A, in the Louvre, Paris was probably executed between 1845 and 1850 and inspired by the then recent work of Texier. For the colors used on the cast see Lambert and Noel 1998: 44; Briant 2001: 104-5. Briant states: "Si la polychromie des reliefs de Persepolis est aujourd'hui incontestable, sa proposition de reconstitution en revanche était erronée. Laval aurait pu se servir des relevés et travaux de Texier pour réaliser son propre travail. Pour autant, il a pu aussi bien inventer la polychromie."

⁶³ Lambert and Roux 1998: 24: "Lottin de Laval aurait pu se servir des relevés et travaux de Texier pour réaliser son propre travail. Pour autant, il a pu tout aussi bien inventer la polychromie." (cp. Briant 2001: 105)



Figure 3.8 Lottin de Laval’s painted cast of a relief from wing A of the north façade of the Apadana (1845-50), today in the Louvre, Paris (Photo: © Louvre)



Figure 3.9 Apadana, North Façade, in situ, 2009 (Photo: A. Nagel).

Achaemenid (and Elamite) Blues: Frédéric Houssay and the colors of Naqsh-e Rostam

After Texier, it took more than thirty years until another Frenchman noted colors on stone in the greater Persepolitan area: references to paint were identified, this time on the façade of the Tomb of Darius I at Naqsh-e Rostam. In 1885, the botanist Frédéric Houssay (1860-1920), the youngest member of the French Mission to Susa (see below), visited many sites in Khuzestan and Fars. He observed abundant traces of paint on the garments of the rulers depicted on the Elamite rock reliefs at Kul-e Farah near Izeh/Malamir 150 km northeast of Susa (Dieulafoy 1885: 226).⁶⁴ He also noted that the letters of the inscriptions on the facade of the Tomb of Darius I at Naqsh-e Rostam stood out blue against the natural gray of stone (Dieulafoy 1885: 227).⁶⁵

The inscriptions were hidden under a coating of limestone, less visible in the rest. After the protective coating was chiseled away, they appeared blue. This is the first time, I believe, that traces of paint on the cuneiform characters are attested. (translation mine).

This very explicit comment lends it a compelling validity. As it has turned out, the young Houssay was very right indeed (see below, Chapter 4).

⁶⁴ “Cette passementerie à tons bleu, blanc et or a de singulières affinités de dessin avec les couronnes et les colliers portés en Égypte ...” On the monuments: Jéquier 1901; Van den Berghe 1963 (no reference to the polychromy at all) and Potts 1999: 253-4; Alvarez-Monforth.

⁶⁵ Dieulafoy 1885: 227: “Les inscriptions nouvelles étaient cachées sous un enduit calcaire, au reste peu adhérent. Après la chute de l’enduit protecteur, elles ont apparu en bleu. C’est la première fois, je crois, que l’on constate des traces de peintures sur les caractères cunéiformes gravés. Les grands textes achéménides qui ornaient le revêtement en faïence du portique d’Artaxerxès sont blancs sur fond bleu.” Cp. Perrot and Chipiez 1890: 559 (Engl. 1892: 159). Photographs taken by Houssay and Babin from the inscriptions were later used to decipher various parts of the inscriptions (Weissbach 1911: xix).

**“Beware, you moderns of degenerate mind!”
The Dieulafoys on the Polychromy of Achaemenid Susa – Susa at the World
Exhibition in Paris, 1889**

Although some travelers noted the presence of pigments on the visible structures above ground on the Persepolis Takht, Achaemenid Persia remained white in the minds of most European artists throughout much of the nineteenth century.⁶⁶ This changed when a second major Achaemenid capital began suddenly to re-appear on the radar of the European mindset: archaeological investigations at Susa offered a body of striking evidence for the original polychromy of the Achaemenid Persian architectural environment.

In 1884, four Europeans set out in search of the palaces of Persia’s past. Marcel Dieulafoy (1844-1920), his wife Jane Dieulafoy (1851-1916), accompanied by two young Frenchmen, the engineer Charles Babin and the botanist Frédéric Houssay would soon open up a new chapter in the polychromy of Achaemenid Persia. Already by the spring of 1885, they discovered fragments of glazed bricks depicting colorful lions, fantastic creatures, and human guards in Susa.⁶⁷ J. Dieulafoy left a vivid description of her first encounters:

Behold then, a roused from among the dead, this antique polychromy, denied, exalted, and contested with violence in the archaeological tournaments! ... By what, moderns of degenerate

⁶⁶ In 1878, the English painter Edwin Long (1829-1891) exhibited his fanciful ‘Queen Esther in Ahasuerus’ Palace at Susa’ at the Royal Academy. In the background of the painting he depicted the cavetto of the doorframe with alternating blue and red leaves while the rest of the palace walls remained entirely white: Allen 2005: 175 Fig. 7.11 (National Gallery of Victoria, Melbourne). This is in line with other contemporary artists depicting the ancient Near East in white. See, e.g., Frederick A. Bridgman’s (1847-1928) ‘Diversion of an Assyrian King’, c. 1878 (Hobart Collection, San Francisco).

⁶⁷ Dieulafoy 1888: 131-3; These first excavations at Susa were sponsored by the Musées Nationaux (Director Louis de Ronchaud) and conducted in two campaigns, between January and May 1885, and between December 1885 and March 1886. The objects left Susa at the end of May 1885 and May 1886. The first bricks with glazed surfaces were found in March 1885 (see, e.g., Chevalier 2010).

mind, do you dare to accuse the monumental painting of Elam and of Hellas of brutality and *barbarism*? Can you be the representatives of those enfeebled races which sneer of their ancestors and do not even venture to raise them? Would you deny the important role of color, in default of having understood it and being able to give it in architecture the place which it merits? [emphasis mine].⁶⁸

The use of “barbarism” in relation to polychromy and painting is interesting. J. Dieulafoy’s sentimental outbreak echoes the contemporary situation in trying to cope with the overwhelming evidence for polychromy in the ancient world which met with the academic difficulties in restoring “ancient realities.” It may reflect the “chromophobia” that dominated Paris in the second half of the nineteenth century (see above, Chapter 2).

The discoveries of the bricks at Susa and their subsequent removal to Paris (where they allowed for further reconstruction in much celebrated friezes) were a sensation. On June 6, 1888, two rooms displaying the finds were opened in the Louvre. A third room (Salle VIII), containing a model of the Apadana opened in 1891 (Billerbeck 1893: 137; Chevalier 2010: 88-9). The exhibition caused great enthusiasm among “partisans d’une architecture polychrome” (Chevalier 2010: 88). In an article in the New York Times, in December 1888, the artistic merits of the artisans working at the Achaemenid courts were celebrated:

The glazed tiles ... have been restored to view, the coloring on the tiles is almost as fresh and as gaudy as though the glazure had been put up on within a few years. Specimens of glazed bricks have been found beneath the mounds of Upper and Lower Mesopotamia which date probably from a period anterior the conquest of the country of Persia ... but the art of glazing could never have been carried to that perfection in Babylonia and Assyria as was the case in Persia under the Achaemenid dynasty” (Jastrow 1888: 13).

⁶⁸ Dieulafoy 1888: 122; Dieulafoy 1890: 218-22, Entry in diary December 31st 1885. This was long before anybody knew about the Ishtar gates and the procession street were discovered (1899).

An important role in the history of the reception of the polychromy of Achaemenid Persia was a group of displays and installations at the World Exhibition in Paris in 1889. This exhibition featured the first reproductions of the glazed friezes depicting lions and guards by Émile Müller and Charles-Louis Lesueur. Also, very much like thirty five years before at the Crystal Palace in Sydenham, the attempt was made to “restore” an ancient Near Eastern environment in color (Chapter 2). The “Pavillon des Travaux Publics” offered a hypothetical, though “tres jolie reconstitution” (Aymerich 1991: 165) of an interior of the recently discovered Apadana of Artaxerxes at Susa. Twenty-five meter high columns of plaster were reconstructed with complex bull capitals and painted (**Figure 3.10**). It is apparent that the Dieulafoys preferred a restricted polychromy in that many parts of the stone of the column capitals as still visible. Nasr ed-Din Shah, who toured Europe between May and October 1889, visited the installations at the Louvre (August 2 and October 2) and at the World Exhibition and was deeply impressed (Aymerich 1991: 165; Nasiri-Moghaddam 2004: 75-6). At the World Exhibition in Paris, the Greek government at the same time showed photographs and drawings of the recent finds of polychrome monuments from the excavations on the Acropolis at Athens (Kader 2004: 239). But Persia became now example par excellence of ancient polychromy.⁶⁹

⁶⁹ It would be interesting to compare in depth the presentation of casts displaying ancient polychromy at the Crystal Palace in 1854 and the Paris World Exhibition in 1889 (and beyond).



Figure 3.10 Installation of an Achaemenid Palace interior at the World Exhibition in Paris, 1889 (Gran Aymerich 1991).

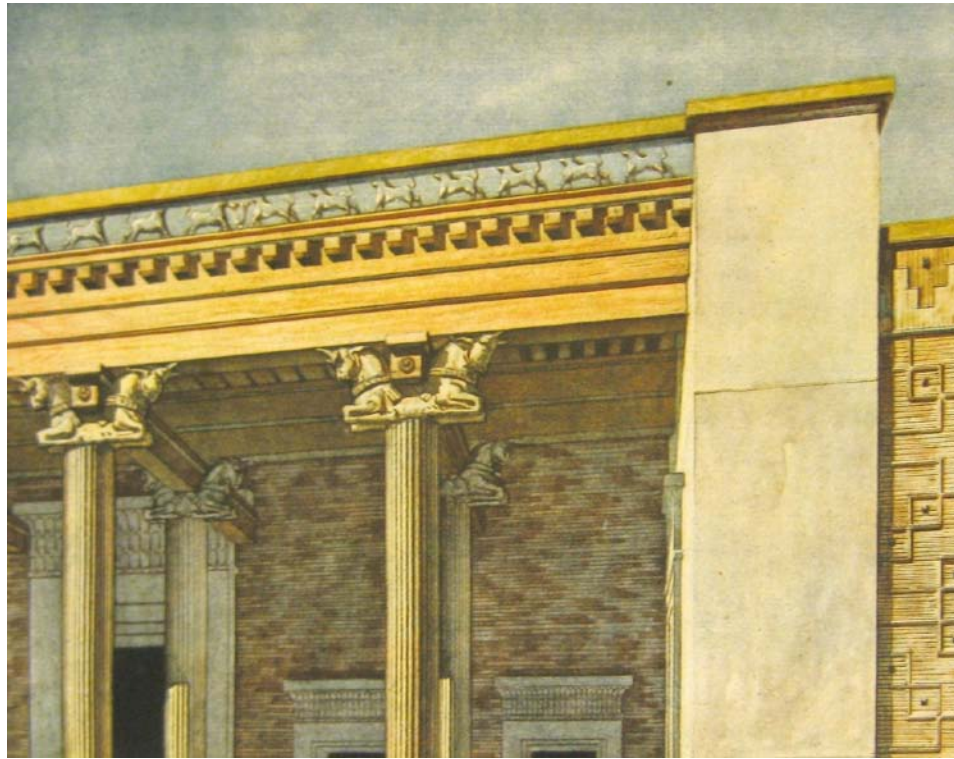


Figure 3.11 Reconstruction of exterior of an Achaemenid Palace at Persepolis (Dieulafoy 1892: pl. X).

Around the same time, Dieulafoy worked on a reconstruction of an Achaemenid palace in which color again became rather restricted (**Figure 3.11**).

Once displayed at the Louvre though, it was the restored friezes of the glazed brick reliefs from Susa that became icons for the colorful environment of the Achaemenid rulers.⁷⁰ The fame of the glazed bricks has tended to mute other evidence for Dieulafoy had noted traces of paint on some of the remaining stone monuments discovered at the site as well:

The surfaces appear as almost polished, except the hair of the depicted that appear raised with a chisel and detachment in one group. I can give proof that the eyes and hooves were gilded and the horns and ears were made of bronze. Traces of red and even a piece of gold are apparent near a drip, the yellow hooves are also reproduced on the enameled bricks (Dieulafoy 1891: 348, translation mine).⁷¹

Recent analysis conducted during the cleaning of a bull capital from Susa that had been brought to and restored in the Louvre in 1886 has revealed traces of a red paint that originally coated the cheek of the animal (André-Salvini 2010: 318).⁷²

Almost all glazed brick fragments found at Susa were excavated from post-Achaemenid layers, where they had been re-used rather haphazardly (e.g. Perrot 2010: 235 Fig. 243). Nevertheless, it became possible for later generations to reconstruct the placement of some of these glazed bricks into specific contexts of the palaces at Susa. A

⁷⁰ In an article in *The New York Times* from September 1892, it was said that the London South Kensington and Edinburgh museums had recently acquired colored casts of the “superb frieze of the Immortals” from Dieulafoy’s excavations at Susa. As such they were the forerunners of later polychrome ancient Near Eastern reconstructions such as those of Walter Andrae’s Ishtar gate of Babylon in Berlin.

⁷¹ “Les surfaces sont amenées presque au poli, sauf les poils qui paraissent relevés au ciseau et se détachent ainsi sur la masse. Je puis donner la preuve que les yeux et les sabots étaient dorés et que les cornes et les oreilles étaient de bronze. Des traces de mixture rouge et même une parcelle d’or très apparentes près d’un larmier, la couleur jaune des sabots reproduits sur les briques émaillées.” Cp: Dieulafoy (1891) *ibid.* 348: “L’intérieur de la salle ils étaient revetus de stuc rouge; sous les portiques, de stuc gris; à l’extérieur, de moellons de faïence rose pâle ou gris;” for paints on the stone monuments see also Perrot and Chipiez 1892: 421 and n. 1: “Besides glazed tiles, fragments which led to the conclusion that flat figures painted with the brush were applied to the front wall of the stairs.”

⁷² The horns and ears of this bull capital are modern restorations (André-Salvini 2010: 318).

frieze of roaring lions originally filled the upper part of the East Court of the Palace of Darius, on the north wall. The lions move toward a centrally placed trilingual inscription above the door (Muscarella et al. 1992: 224; Perrot 2010: 235 and 242 Fig. 253; **Figure 3.12**). According to the latest reconstructions by Rupp and Lopez (“Héritage Virtuel”), the frieze showing guards may have originally covered the façades of the same court (cp. Curtis and Tallis 2005: 51; Perrot 2010: 227 Fig. 230 and 242 Fig. 253; **Figure 3.13**).

Another group of glazed bricks, both in relief and on flat tiles, originally covered at least one staircase in the palace, consisting of serving figures resembling those carved in stone, e.g., on the south stair of the Palace of Darius on the Takht at Persepolis (Curtis and Tallis 2005: 89-91; Daucé 2010: 340-2). All of these friezes were additionally framed with non-figurative designs of flowers, palm leaves, and triangles (Muscarella et al. 1992: 224). It remains impossible to reconstruct the original context of the so-called Dieulafoy-Parapet (Daucé 2010: 342).⁷³

⁷³ In the course of the twentieth century, many more glazed bricks were excavated (Daucé 2010: 328). Out of approximately 13,000 brick fragments discovered in time, the majority remain in the modern Museum at Shush (c. 5,800), the Louvre has c. 5,000 glazed silicious bricks and 1,500 in terracotta and relief. The collection of the National Museum in Tehran is smaller (c. 500 bricks). Not only the palace itself, but also the gates and walls leading up onto the platform with the Palace and the Apadana highly ornamented. Excavations on the western side below the platform produced nearly 1,000 fragments of glazed bricks near a gateway leading to the Apadana Palace hill (Kaboli 2000). The gateway was therefore – like the late Babylonian precedent at Babylon – extensively decorated in polychromy. The excavators noted that the bricks have formal and geometrical designs, but also human depictions of two sizes, one of human proportions, others of a third of the human size, and argued that the latter most likely formed the décor for the stairways leading to the top of the platform (Kaboli 2000: 162).

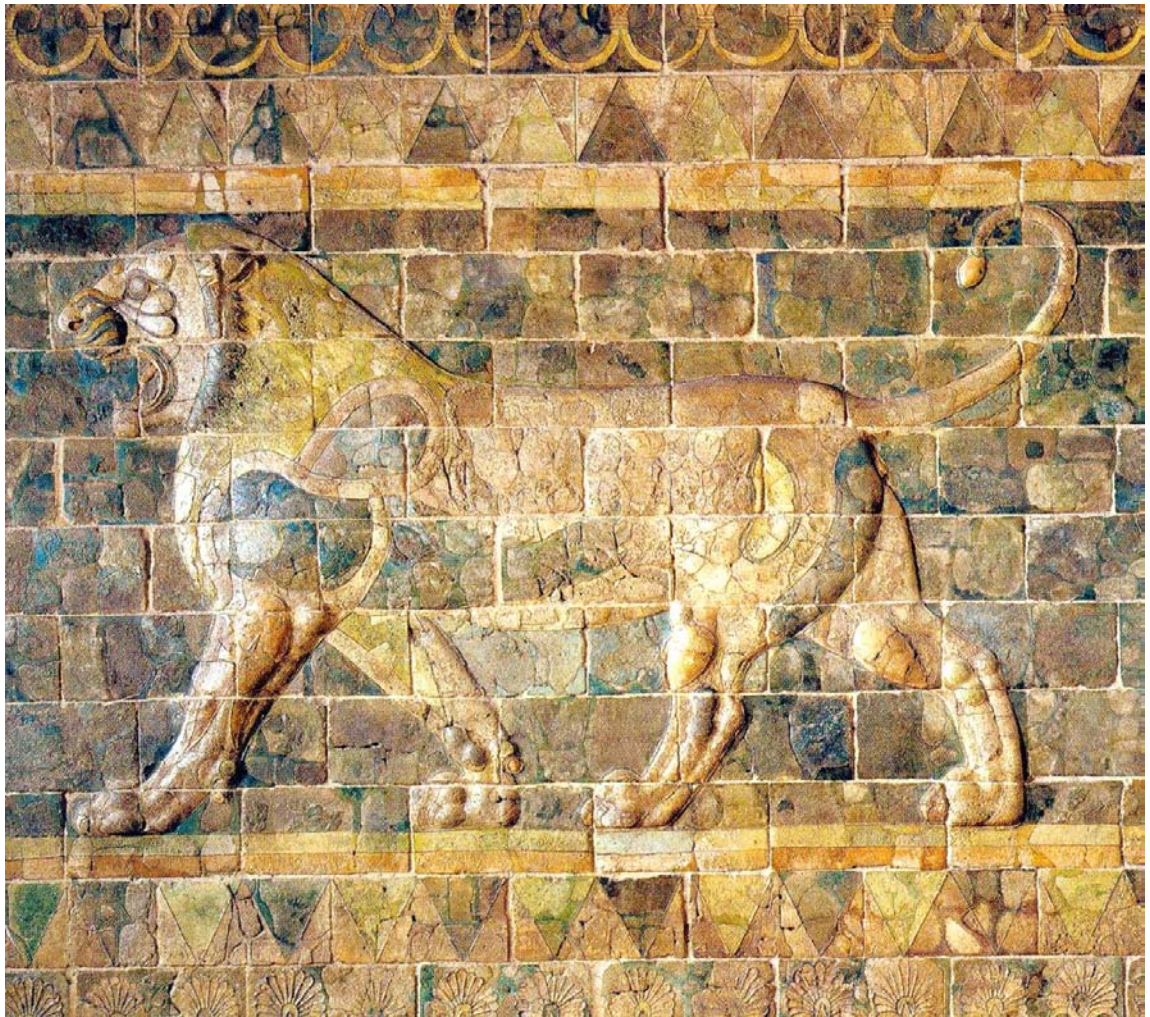


Figure 3.12 Detail of glazed brick frieze of roaring lions moving toward a central trilingual inscription from Susa (Louvre, Paris).

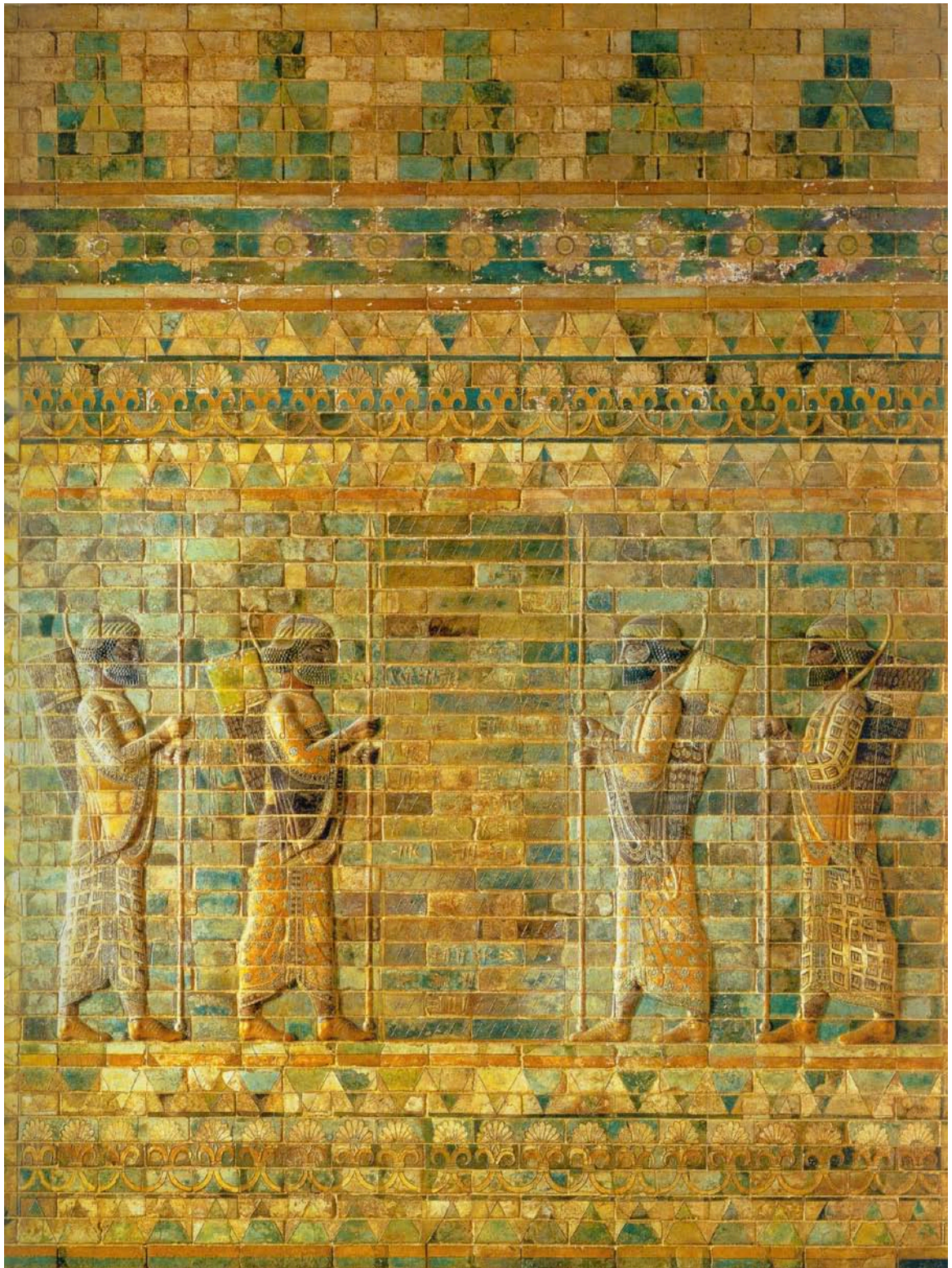


Figure 3.13 Glazed brick of frieze of guards, from Susa (Louvre, Paris)

“Whiteness” returns to Persepolis

Before the end of the nineteenth century, “whiteness,” however, returned to Persepolis. In 1890, Perrot and Chipiez (see above, Chapter 2) published two chromolithographic reconstructions of monuments from the Takht in the volumes of the *Histoire de l’Art*. At first, Perrot and Chipiez discredited Texier in that he “cannot always be relied upon” (engl. Trans. 1892: 158). As they had done in their discussion of polychromy in Assyrian palace reliefs, they asked here, whether

... the Persian architect would have been content, like the Egyptians and the yet more judicious Greeks, to overlay stone, moldings and sculpture with one coat of colour?

Based upon the judgments of Flandin, Coste, and Dieulafoy rather than upon those of Texier, the two chromolithographies, that accompanied their volumes reinforce the verbal of Perrot and Chipiez that the Achaemenid Persians used “this [polychrome] mode of decoration with extreme reserve, and nowhere has the stone been tinted” (1892: 161). All reliefs of the restored structure of the Palace of Darius in Persepolis are shown in white, in the tradition of Flandin and Coste. Color is limited at Persepolis to the glazed flat bricks unearthed there (which once embellished the surface of the mud-brick walls which are no longer standing (Perrot and Chipiez 1892: opposite 336; **Figure 3.14**). A second detailed reconstruction, depicting a corner of the Apadana, shows the bull capitals with color applied only to the eyes, the eyebrows, the horns, ears and few ornaments and is similar to Dieulafoy’s more recent reconstructions (**Figure 3.15**). The reluctance of Perrot and Chipiez to invest in the evidence of color more wholeheartedly is somewhat surprising, as they were working nearly parallel on various polychrome reconstructions of

classical Greek architecture and sculpture, where they were clearly not as reluctant to use colors.⁷⁴

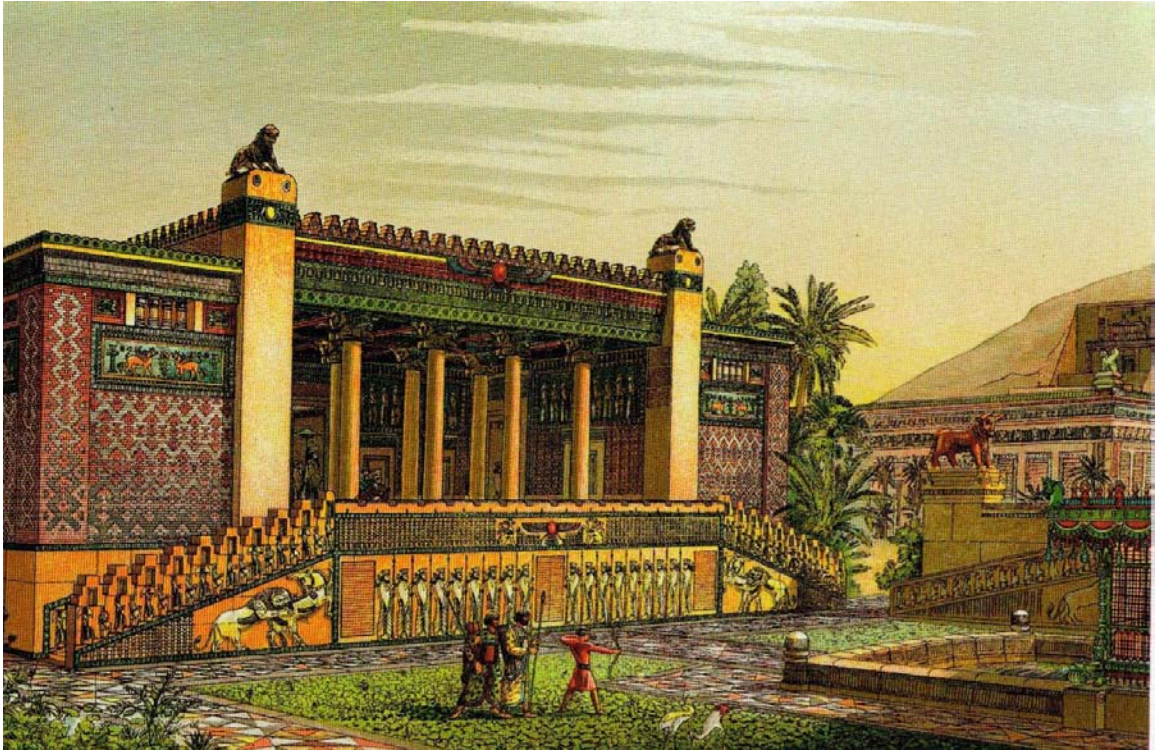


Figure 3.14 Watercolor reconstruction of the façade of Palace of Darius (Perrot and Chipiez 1892)

⁷⁴ Cp. their reconstructions of the Parthenon and the statue, displayed at the World Exhibition in Paris, 1889. These polychrome reconstructions are today in NY, now in Munich: Metropolitan Museum of Art, New York - The Willard Collection, 1883-1891, acc. No. 90.35.3. Chipiez worked on the reconstruction beginning 1883. For more information see: <http://www.abgussmuseum.de/>; cp. Kader 2004: 238.

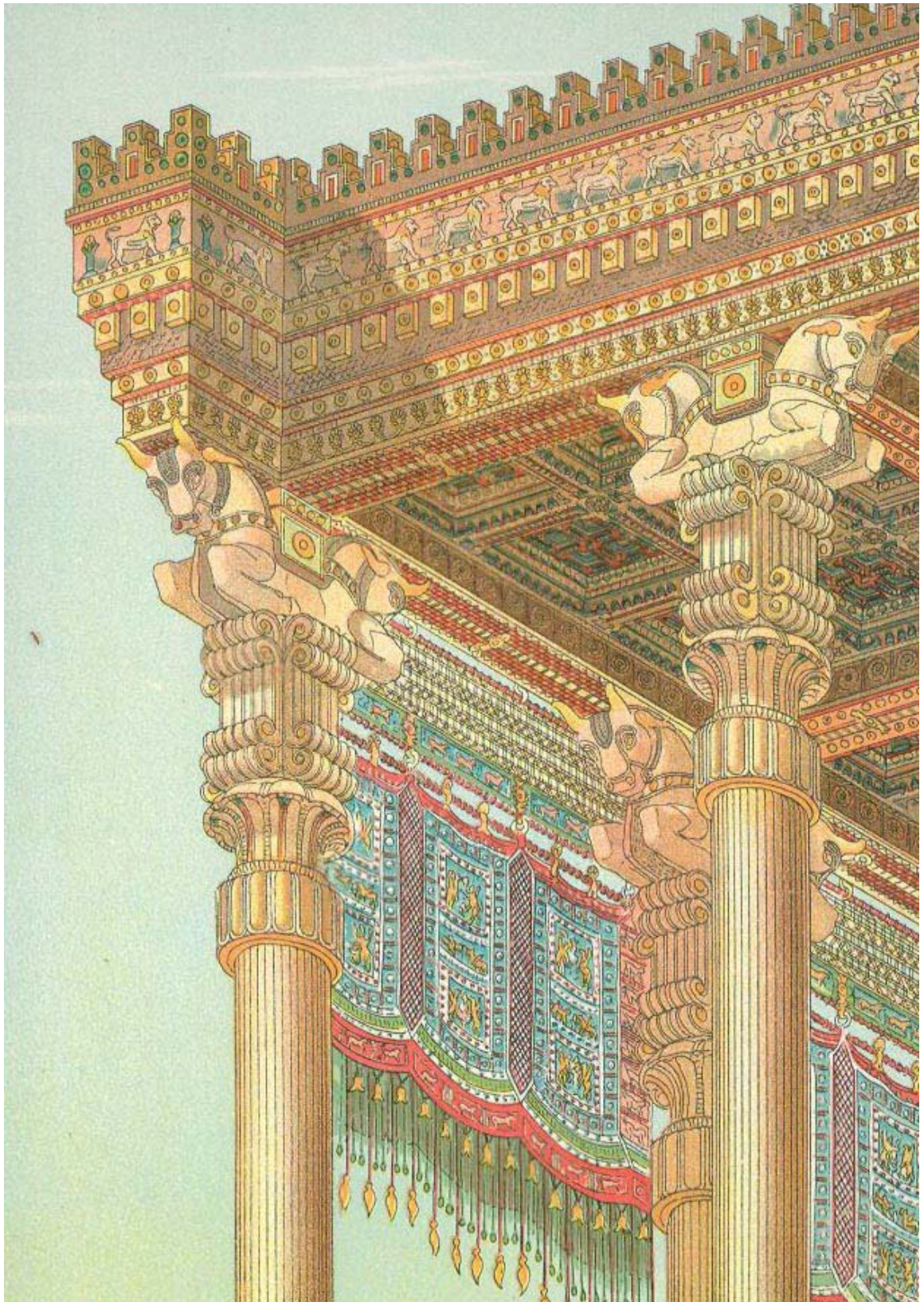


Figure 3.15 Reconstruction of the corner of the Apadana at Persepolis (Perrot and Chipiez 1892)

The British return: the Polychromy of the Hall of 100 Columns

On the Takht of Persepolis, however, new evidence was soon discovered indicating that the stone reliefs were indeed originally covered with paints. In early 1892, Herbert Weld-Blundell (1852-1935) made a number of test trenches on the terrace platform, and carefully studied the surfaces of the stone monuments that had heretofore been hidden (and protected) by accumulated destruction debris, “to take a surreptitious peep into the hitherto sealed book” (Weld-Blundell 1892: 538). One of his first discoveries was that the floors of various buildings were covered with “a smooth flooring of cement of a rich red colour” (ibid. 539). New traces of this treatment continued to be revealed throughout the twentieth century (**Figure 3.16**). He devoted a special chapter to ‘Colours and Materials’ (ibid. 556-9), and made new observations on paint on the monuments:

In removing some dry accumulation ... [on] the bas-relief in the Hall of a Hundred Columns, Mr. Giuntini, the Italian formatore, found it covered with a coating of blue paint, which came away readily as fine blue powder (ibid. 557).

Furthermore he notes, for instance, that on a small column drum from a mound of rubble next to the Palace of Darius “yellow ochre was found in the flutings, laid on a ground of white gesso” (ibid. 557).⁷⁵ Importantly, Weld-Blundell is also the first to explicitly acknowledge the existence of glazed bricks “exactly similar to the tiles exhibited in the Louvre brought from Susa” in the area immediately in front of the Apadana on the Takht (ibid. 557). In remarkable detail, he comments upon their manufacturing technique and the colorants used: greens, for instance, were determined to have been a product of

⁷⁵ Similar observations were made much later by excavator Roland De Mequenem for the stone columns in the Achaemenid palace at Susa: see below, Chapter 4.

vermilion; other colors were determined through his analysis to have been produced with components of sulphur and globules of mercury.⁷⁶

One of the most informative works, even today, is Curzon's synthesis on the monuments of Achaemenid Persia in the late nineteenth century. He argued that at Persepolis mainly plaster was used as a vehicle for applying paint onto stone, and that because of its fragile characteristics was vulnerable to destruction and has not survived. He also notes, however, that he did not find any traces of paint himself on the Persepolis monuments (1892: 172).

⁷⁶ He took small samples of the pigments to London where they were analyzed by the well-known archaeologist, William Flinders Petrie, and Flaxman Charles John Spurrell, an experienced geologist at this time. It has not been possible to relocate these pigments. Unfortunately, Weld-Blundell's London house burned down and important documents may have been lost in the fire (pers. comm. St John Simpson November 2008). Curzon (1892: 172) reported that "some fragments of stucco painted red," were given by Weld-Blundell to the British Museum.



Figure 3.16 Detail of red floor in the Palace of Darius, south eastern corner of northeastern hall (= Schmidt 1953: 217 Fig. 90 Room No. 12), Persepolis, 2007 (Photo: A. Nagel)

CHAPTER 4

LOST AND FOUND IN THE ARCHIVES – THE CHALLENGES OF WORKING ON THE POLYCHROMY OF ACHAEMENID PERSIA IN THE TWENTIETH CENTURY

The twentieth century saw the first series of excavations on the site of Persepolis that were accompanied by more or less systematic documentation. Excavations were first conducted by an American team under the aegis of the Oriental Institute of the University of Chicago. Ernst Herzfeld directed the field operations between 1931 and 1934 (Herzfeld 1941; Krefter 1971; Dusinberre 2005). He was relieved and replaced by Erich Schmidt who continued through the last season in 1939 (Schmidt 1953, 1957, 1970). The objective of the excavations by Schmidt “was to clear the ruined palaces of its debris, ... to preserve the remains, [and] ... to establish a pottery sequence for the Marvdasht region (Balcer 1991: 149-51). In subsequent years, important fieldwork was conducted by Iranian teams, led by Ali Sami between 1939 and 1959 (see, e.g., Sami 1955; c.p. Mousavi 2002: 235-39), Akbar Tadjvidi between 1969 and 1972 (Tadjvidi 1976; c.p. Mousavi 2002: 239-45), and Shahpur A. Shahbazi in 1975 (Mousavi 2002: 245). Between 1965 and 1978, the Iranian efforts were enhanced by an Italian restoration team sponsored by the Istituto Italiano per il Medio ed Estremo Oriente and led by Giuseppe and Ann Britt Tilia (see below).⁷⁷

In terms of any attempt at synthetic presentation, the pioneering work of Judith Lerner (Lerner 1971, 1973, 1976), and of Ann Britt Tilia (Tilia 1978), operating independently, looms large, since throughout this extended period of archaeological

⁷⁷ In addition to excavation and restoration work, archaeological surveying in the Marvdasht plain was undertaken by a US initiative (Sumner 1986). This project has contributed to ongoing debates about the nature and extent of the extramural environment of greater Persepolis.

fieldwork, evidence of polychromy continued to emerge. Their efforts will be highlighted below and used to show the complexities involved in documenting the architectural finishes and polychromy of the Persepolis monuments. Significantly, despite the publications of Lerner and Tilia, it was not until 1985, that the first modern scientific analysis of pigments retrieved from surfaces of the architecture and sculptures was published (Stodulski et al. 1984, see **Appendix 2**).

While this chapter continues to guide the reader the Persepolis polychromy saga in a chronological order, diachronic case studies from the Hall of 100 Columns (finished by Artaxerxes II), and the façade of the Tomb of Darius I at Naqsh-e Rostam will be highlighted to show specific complexities of the issues in play. I will discuss the issue of glazed bricks, columns, and the evidence from excavated pigment bowls.

The general picture that emerges across most of the first decades of the twentieth century is one in which casual observations, fairly narrowly circumscribed but systematic documentary efforts, and larger-scale investigations have tended to remain disconnected one from another. A lack of communication between the various parties involved in considering aspects of color and gilding in Persepolis meant that ideas were not shared, important materials and records of discoveries were lost or ignored post-excavation, and much evidence that reached the storerooms safely was seldom properly catalogued.

Imagining and Imaging Achaemenid Persia in the Early Twentieth Century

In the first two decades of the twentieth century, Achaemenid Persia became an increasing focal point for European imagining of the ancient Orient, particularly amongst

French and German scholars. Academic interest was reflected as well in growing popular exposure to ancient Persia and its glorious past.

In August 1902, “Parysatis” had its premiere on stage at the open air arena of Béziers in Southern France (Dieulafoy 1902). The libretto for this production was adapted from an earlier one based on a “roman historique” following a “roman archéologique” by Jane Dieulafoy, which was published in 1890. The staging and costumes for the 1902 “Parysatis” were designed by her husband Marcel Dieulafoy based on the recent archaeological discoveries at Susa. In the third act, the audience experienced a set design echoing the columns of the Apadana at Susa, complete with bull capitals (Aymerich 1991: 197-8), although it is unclear to what extent the bull capitals, columns, and walls at the stage set were painted. In the meantime, excavations at Susa continued (e.g., Morgan 1905). Jacques de Morgan (1857-1924) resigned in 1907. Roland de Mequenem (1877-1958), who had worked there already since 1903, was officially entrusted with excavations in the Palace of Darius. Here, between 1909 and 1911 the large central and Western courtyards of the Palace were uncovered (Chevalier 2010; Ladiray 2010).

During this same time period research was being conducted on the monumental Achaemenid Persian inscriptions (e.g., Weissbach 1911) and on selected categories of objects from Susa and the Achaemenid Persian Empire in the Louvre and other European collections (e.g., Burchardt 1911; Pézard and Pottier 1913; Toscanne 1916; Pézard and Pottier 1926). The early excavations at Susa had revealed striking evidence of polychromy in glazed brick relief, as we have already seen. In the first half of the twentieth century the impact of this material became even more widespread. Restored

segments of the colorful glazed brick friezes of soldiers from the Palace of Darius were sent as object exchanges from the Louvre to Berlin, London, and Tehran.⁷⁸ Meanwhile, as already noted, the volume of colorful glazed brick materials kept increasing.

Early twentieth century excavations at Susa also yielded additional evidence for polychromy on the stone architectural elements. De Mequenem noted traces of red paint on a capital from the Apadana, and argued that defective parts would have been entirely over-painted (1947: 38). Despite this evidence, new architectural reconstructions of the Achaemenid palace complex at Susa remained vague about the coloring. Beginning in 1912, the architect Maurice Pillet (1881-1964) worked at Susa on a general survey of the buildings (Pillet 1914). In his “The Palace of Darius,” rendered in 1913, Pillet favored a limited polychrome palette: the archer frieze with the door frame and the cavetto were shown in blue and striking colors, but the columns including their bases and bull-headed-capitals were left white (**Figure 4.1**). Despite all the evidence of polychromy at his disposal, Pillet’s reconstruction is reminiscent of those of Place for his 1867 reconstruction of the Assyrian palace reliefs from Khorsabad (see Chapter 2). In each of these cases, color was allowed for glazed bricks but not for the stone monuments.

⁷⁸ Berlin: Vorderasiatisches Museum VA 14647, by exchange with the Louvre in 1936 (Wartke 1992: 239-40 No. 186); London, British Museum: former Louvre Sb 4001 = Curtis and Tallis 2005: 87 No. 51, by exchange with the Louvre in 1958; Tehran, National Museum, by exchange with the Louvre in 1959 (André-Salvini 2010: 321 n. 6).

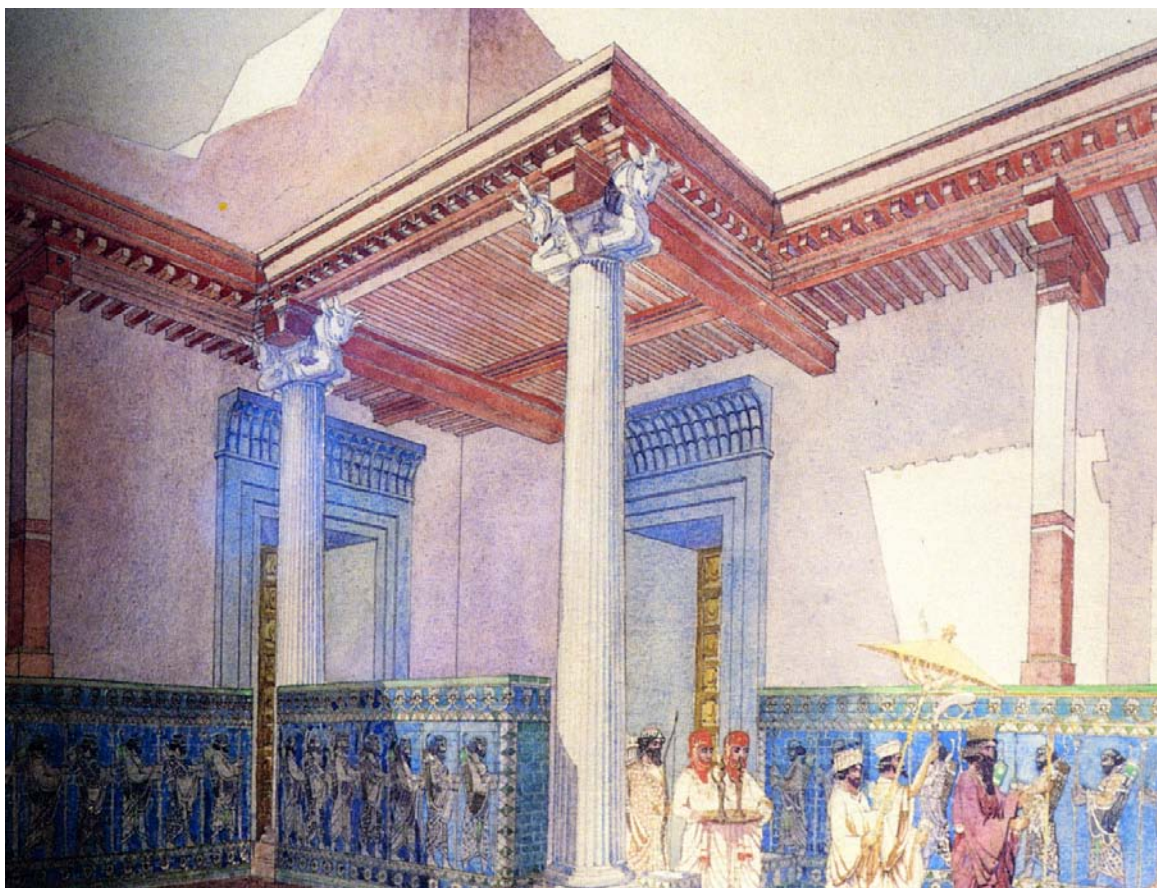


Figure 4.1 Watercolor reconstruction of a corner of the western courtroom in the Palace of Darius at Susa, by M. Pillet, 1913 (Louvre/Christian Larrieu; after A miel et al. 1992: 14 Fig. 15; Chevalier 1997: 64 pl. X II. Watercolor today in Collection M me Étienne Pillet, Le Chesnay, France).

Meanwhile, the German orientalist Ernst Herzfeld (1879-1948) had finished his dissertation on Pasargadae (Friedrich-Wilhelm Universität Berlin), after an initial visit to the site in 1905 (Herzfeld 1908). In 1910, his monumental documentary volume, *Iranische Felsreliefs*, co-authored with Friedrich Sarre (1865-1945), published descriptions of all major Iranian archaeological sites he identified (Herzfeld and Sarre 1910). Herzfeld's interest in Iran's past grew to the point that he took up permanent residence in Tehran beginning in 1926. He excavated at Pasargadae in 1928 (Herzfeld 1929; Stronach 2005). From this point onward, the early years of modern exploration of

Fars—and particularly of Persepolis became intimately connected with Herzfeld himself and also with two other Germans: Friedrich Krefter (1898-1995) and Erich Schmidt (1897-1964). These men established an arena of inquiry into the Achaemenid Persian Empire based in Fars, counterbalancing the continued French monopoly on excavations in Khuzestan, at Susa.

The first officially documented large scale excavations on the Takht of Persepolis took place on behalf of the Oriental Institute in Chicago, when the Egyptologist James Henry Breasted (1865-1935) was its Director. Herzfeld led the expedition between 1931 and 1934, with Krefter serving as his architect-assistant. He was relieved of his position (and departed from Iran) under clouded circumstances (Gunter and Hauser 2005: 29-30), relinquishing to posterity very little in the way of published documentation and analysis or unpublished but systematic records of his findings. Much of the work done in Persepolis during the Herzfeld years (and much of Herzfeld's thinking on his discoveries) remains puzzling. His publication *Iran in the Ancient East* (1941), which might have resolved some of these issues, does little to clarify the details of the work carried out (Gunter and Root 1998: 7-8; Garrison and Root 2001: 24-6; Dusinger 2005; Mallampati 2005). His posthumous study brought to fruition by G. Walser sheds no light on issues relevant to polychromy (Herzfeld 1968). Schmidt's tenure as expedition director (1935 to 1939) had difficulties and idiosyncracies of its own (Balcer 1991).⁷⁹ He avoided working on the Takht in those areas that were already opened by Herzfeld (Balcer 1991: 167).

Schmidt published a three-volume excavation report (Schmidt 1953, 1957, 1970).

This monumental effort focused on his own campaigns with little information on the

⁷⁹ During Schmidt's seasons John S. Bolles (1935), Eliot Noyes (1935-1936), and Richard Haines (1937) served as architects. All have so far received little attention regarding their role in the work on the site. See comments also in Chapter 5 on the obscurity of information on archaeological practice in all these years.

Iranian fieldwork conducted subsequently. Furthermore it is also clear that information from the Herzfeld excavations was transmitted to Schmidt (or deemed worthy of inclusion?) only very selectively. Not least, the Schmidt volumes are somewhat problematic in terms of our attempt to understand the evidence of polychromy and its handling at the site during the entire Chicago era at Persepolis. It is striking and symptomatic that neither Texier's nor Weld-Blundell's crucial observations of the paints on the surfaces of the monuments on the Takht, introduced here above in Chapter 3, entered Herzfeld's publications or the presumably *definitive* Schmidt volumes. This is especially puzzling because Schmidt did take pains to allude to the observations on polychromy at Susa made by Dieulafoy (Schmidt 1953: 36). To give Schmidt credit, however, he demonstrated interest in the polychromy of the site in several noteworthy ways. He assigned colleagues to conduct analysis on objects (Matson 1953), and incorporated a full color-plate for a color reconstruction of a rosette border around one of the door frames in the Treasury (Schmidt 1953 Fig. 68B), to which he presented his colleague's analysis of a six-phase application (ibid: 160).

With these notable exceptions, there is a general lack of published evidence on and discussion of polychromy at Persepolis from the Chicago years. Herzfeld's notebooks, reports, sketchbooks, and other documents become an important source for the study of polychromy of the monuments at Persepolis. The material is today shared between various research institutions, including the Freer Gallery of Art and Arthur M. Sackler Gallery Archives, Smithsonian Institution, Washington, DC (Ernst Herzfeld Papers, Sk =

Sketchbooks; N = Notebooks and Diaries); the Oriental Institute in Chicago (Letters, Excavation Reports), and the Metropolitan Museum of Art in New York.⁸⁰

Ernst Herzfeld and the Polychromy of Persepolis

Interestingly, back in the early 1920s (before he had even conducted his excavations at Pasargadae) Herzfeld had observed significant traces of polychromy both in Pasargadae and in Persepolis. Most of this evidence remains unpublished, and it is not clear what if any of it was relayed to Schmidt. At Pasargadae, Herzfeld commented on traces of red in the wings and the dress of the “winged genius” on the doorjamb of Gate R, which served as the main entrance to the palace area in the plain.⁸¹ Returning to Pasargadae in the spring of 1928, he noted traces of paint representing vestiges of mural paintings in Palace P. Samples of painted plaster, taken from Palace P by Herzfeld are today in the Freer Study Collection of the Freer Gallery of Art and Arthur M. Sackler Gallery of Art, Smithsonian Institution, Washington, D.C.⁸² During a visit to Persepolis in December 1923 Herzfeld remarked that on the reliefs

⁸⁰ General information about the Herzfeld papers in these various repositories can be found in Root 1974; Hennessey 1992; Guntter and Hauser 2005, especially the paper by E. Eittinghausen. Today I have conducted my own targeted investigation relating to the polychromy issue in the Chicago and Washington archives, although more remains to be done.

⁸¹ Freer Gallery of Art and Arthur M. Sackler Gallery Archives, Smithsonian Institution, Washington, DC, Ernst Herzfeld Papers, Sk-IV Skizzenbuch Persien 1923 p. 8 (Neg. 6871): Zeichnung und “Pasargadae: Palast mit dem Genius. Rote Farbspuren in Fransen und Flügeln.” For the Herzfeld drawings of Pasargadae sculptures see Calmeyer 1981. For Gate R and the sculpture see Stronach 1978: 44-55; Root 1979: 46-49.

⁸² Freer Gallery of Art and Arthur M. Sackler Gallery Archives, Smithsonian Institution, Washington, DC, Ernst Herzfeld Papers, N-92: “25. April 1928, Palast P: Reste von Wandmalereien.” – These vestiges of pigments and plaster remain to be analyzed. For Palace P, see Stronach 1978: 78-106 with references to paint remnants at p. 85.

in the Hall of 100 Columns, the throne legs laid bare were of a bright blue color. Also, remains of red paint were found higher above on the throne, and the feather wings of Ahuramazda have still their turquoise green color.⁸³

... while examining the column capitals it was noted that the tongues and throats of the lions of the eastern Hall of the Apadana had a more distinct layer of a red color. It only looks embossed, but it was finished, otherwise it would not have been painted. It has no sculpted details, like the bulls, e.g. curls, everything was painted on the very simplified curls ... I also investigated the Darius of the Tachara [Palace of Darius] with the lapis-beard in search of color: it is strange that the hair of the servants show traces of paint, the Darius heads not. The curls of the king have a deep yellow tone, which is not the original color of the stone (gray black). Was he perhaps blonde?⁸⁴

These comments are full of important observations. One would want to know what exactly Herzfeld saw on the hair of the servants and how he knew that the Darius he is referring to had a lapis beard. The two doorways with royal figures which have triangular cuts below the chin are situated at the north end of the main hall of the Palace of Darius (Root 1979: 78 and Fig. 7; cp. Schmidt 1953 pls. 140-41; Tilia 1978 pls. XXVIII figs. 27-8; **Figure 3.7**). It does seem likely that these cuts once held inlays specifically made of lapis. Indeed, numerous fragments of lapis and other blue inlays for beards were subsequently discovered in the Treasury, the so-called Harem, in a room beneath Palace D, and in one of the garrison quarters (Schmidt 1957: 73), west of the Apadana (Tilia 1978, pl. C). Herzfeld repeatedly claimed that lapis was used in the beard and hair in the Palace of Darius at Persepolis (1931: 67). Unfortunately, my examination in 2008, with

⁸³ Freer Gallery of Art and Arthur M. Sackler Gallery Archives, Smithsonian Institution, Washington, DC, Ernst Herzfeld Papers, N-24 (December 7th, 1923): "... Am 100 Säulen Saal waren die freigelegten Thronfüsse leuchtend hellblau, auch Farbspuren, rote, höher am Thron an den Flügeln des Ahuramazda war auch türkisgrün." Cp. Tilia 1978: 42, n. 3.

⁸⁴ Freer Gallery of Art and Arthur M. Sackler Gallery Archives, Smithsonian Institution, Washington, DC, Ernst Herzfeld Papers, N-24 (December 8th, 1923): "... Bei der Untersuchung der Kapitelle zeigt sich, dass die Zunge und der Rachen des Löwensattelholzes der Osthalle des Apadana eine stärkere Schicht menning-roter Farbe hatten. Es sieht nur bossiert aus, war aber demnach fertig, sonst hätte man es nicht bemalt. Es hat keine skulptierten Details, wie die Tiere, z. B. Locken, alles war auf die sehr vereinfachten Locken gemalt ... Ich untersuchte auch den Darius des Tachara mit dem Lapis-Bart auf Farbe: es ist wunderbar, an den Haaren der Diener sieht man die Spuren der schwarzen Farbe, an den Darius Köpfen nicht. Die Locken des Königs haben eher in der Tiefe einen gelblichen Ton, der nicht Steinfarbe ist (grauschwarz). Ob er blond war?" (trans. mine). December 8th, Saturday 1923.

the help of a magnifying glass did not yield further evidence of the original inlaid materials in these cuts.

According to Herzfeld's notes, the colorization of the doorjambs continued below the figure of Ahuramazda, today, often referred to as "the figure in the winged Disk."⁸⁵ Herzfeld noted what appeared to him as pigments when examining the standing doorjambs in December 1923: "Of those who support the dais, the negro still bears traces of black on the face."⁸⁶ Unfortunately, Herzfeld is not very specific and clear as to which of the four doorjambs the Hall of 100 columns that have a depiction of a figure in the winged disk above the king supported by personifications of the subject lands he is referring to (**Figures 4.2-7**). It is highly likely that he is referring to the Ethiopian with the curly hair in the lower row of one of the two Western doorjambs (Schmidt 1953: 136 No. W 14/27 = pl. 108, 109, 112). Recent microscopic investigations of the supporting figures on these doorjamb reliefs have not revealed any still-extant traces of paint. But the throne legs here do retain abundant blue paints, substantiating Herzfeld's observations.

⁸⁵ There is great debate about this specific motif and its meanings. Some scholars interpret the motif of the winged disc and figures emerging from a winged disc as a rendering of Ahuramazda, in its aspect as closely symbiotic with the persona of the king himself. Another school of thought resists this because of the thought that in canonical Zoroastrianism of later times, Ahuramazda was not represented in human form. Our knowledge at present eludes us from claiming that the Achaemenid court was a canonical Zoroastrian place on the model of the late, mature practice of this religion (see Henkelman 2008 *passim*).

⁸⁶ Freer Gallery of Art and Arthur M. Sackler Gallery Archives, Smithsonian Institution, Washington, DC, Ernst Herzfeld Papers, N-24 (December 12, 1923): "Bei den Thronträgern ... hat der Neger noch klare Spuren von schwarz im Gesicht" (trans. mine). Cp. Tilia 1978: 40 n. 4. The notion of the skin color is an interesting one. There is only one further comment on skin paint by Tilia (referring to the tomb of Artaxerxes III: 1978: 43 Fig. 2c: traces of blue paint). There is, however, abundant evidence for various skin tones available on the glazed brick reliefs from Susa.

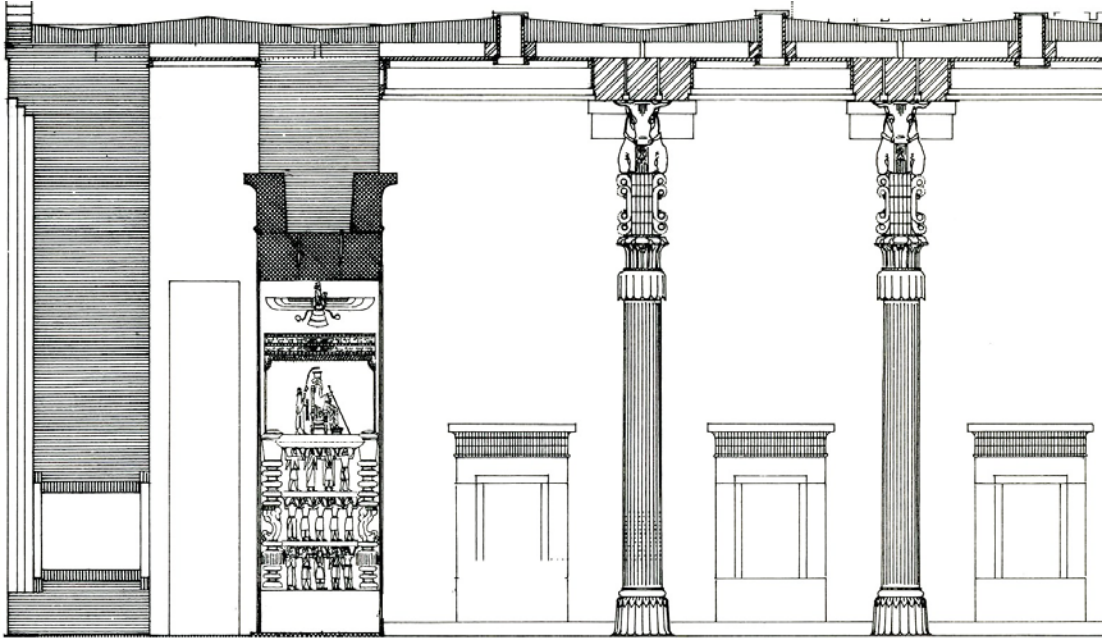


Figure 4.2 Schematic Reconstruction of the southern side of the Hall of 100 Columns with the reliefs, here the western doorway with the western doorjamb (Krefter 1971, Beilage 8).



Figure 4.3 Details of reliefs in the southern side of the Hall of 100 Columns: western doorway eastern jamb; eastern doorway, western jamb, 2007 (Photos: A. Nagel).

Figure 4.4 Details of reliefs in the southern side of the Hall of 100 Columns: western doorway eastern jamb; eastern doorway, western jamb, 2007 (Photos: A. Nagel).



Figure 4.5 Doorjamb of the Hall of 100 Columns, southern side, east jamb of eastern doorway, 2007 (Photo: A. Nagel)



Figure 4.6 Composite plaster cast taken from section-by-section molds from a stone relief in the southern side of the Hall of 100 Columns, east jamb of eastern doorway, today British Museum (Curtis 2000: 47 Fig. 54),

Figure 4.7 Drawing of the relief (Curtis and Tallis 2005: 76 Fig. 38).

On an ink drawing, on the same page on which Herzfeld had written about traces of paint on the “negro,” he indicated the colors he saw on another (?) sculpted winged symbol on one of the door jambs of the Hall of 100 Columns. Here, Herzfeld mentions seeing traces of greens, blues, and reds.

In 1923, Herzfeld removed a foot from one of the reliefs depicting a king in the Palace of Darius. It bore traces of red paint along with graffiti depicting two bearded men, a bull, a lion, and a dog head (Richter 1946: 29 Fig. 26). The foot remained in his private collection until he sold it to the Metropolitan Museum of Art in 1945 along with some of his books and papers.⁸⁷

When doing exploratory work on the site in 1928, Herzfeld harvested additional fragments that became part of his private collection and are important for the documentation of polychromy. Among these items is a fragment of a glazed brick relief, today in the Freer Study Collection, Freer Gallery of Art, Washington DC. In a sketchbook drawing, preserved in the same archive, he refers to the colors he observed on this particular fragment (**Figures 7.8-9**). We will return to a discussion of glazed materials as facade decoration on the Takht below.⁸⁸

⁸⁷ Pers. comment Root 2010 based on research at the museum for Root 1974. Although it has been noted that the red paint is completely worn off today based on examination with the naked eye (Dusinberre 2005: 145-6 and Fig. 5), closer technologically assisted scrutiny is needed to confirm this statement. New York, Metropolitan Museum, Department of Ancient Near Eastern Art, Inv. 45.11.17, originally held in the Department of Greek and Roman Art.

⁸⁸ Freer Gallery of Art and Arthur M. Sackler Gallery Archives, Smithsonian Institution, Washington, DC, Ernst Herzfeld Papers, Sk-IV Skizzenbuch Persien 1923 (1928).



Figure 4.8 Drawing by Herzfeld in 1928, Freer Gallery of Art, Washington DC (Sk-IV Neg. 6867) (Photo: D. Hogge)

Figure 4.9 fragment of glazed brick in Freer Study Collection, Freer Gallery of Art, Washington DC, FSC A 3d (Photo: A. Nagel).

Soon after the official excavations commenced on the Takht in early 1931, Herzfeld's letters and notes begin referring frequently to color. In the very first days remarkable evidence was revealed. From the so-called Harem, one of the building complexes on the southern side of the terrace, Herzfeld reported a ceramic bowl with a blue mass inside.⁸⁹ This bowl must have later become part of the partage agreement. It was sent to Chicago, where it was duly accessioned, though it was not published by Schmidt. The records in the archive of the Oriental Institute, especially a drawing by Herzfeld in the find journal leave no doubt that this is the very vessel Herzfeld was referring to (**Figure 4.10**).⁹⁰

⁸⁹ Entry in the find journal of April 1931 "Persepolis. Finds 1931;" Chicago, Oriental Institute Archive: "No. 161: Find spot: Harem, Southern part, Western corridor."

⁹⁰ Chicago, Oriental Institute. Inv. No. A 19234. The contents have not yet been analysed but is clearly a synthetically produced Egyptian blue.



Figure 4.10 Chicago. Oriental Institute. Inv. No. A 19234. Bowl, excavated by Herzfeld in the so-called Harem in 1931 (© Oriental Institute, Chicago; Photo: A. Nagel). The material has not yet been analysed.

From unspecified parts of the same structure, Herzfeld listed ears of limestone bulls still covered with red paint, a large number of wall pegs of Egyptian blue, and many fragments of glass paste in various colors. In a letter to Breasted dated November 5, 1932, Herzfeld notes a spectacular discovery in the Central Building (Tripylon):

I nearly forgot to mention that yesterday, during the uncovering of a door in the Tripylon the lower part of a relief was found, which portrays a king with sunshade and servants, in its original bright colors. I did not allow it to be uncovered entirely, in order to make preparations for a color drawing when the uncovering was complete. The most striking color is a luminous bright red for the ground of the king's garment and for the shoes. It is not cinnabar, rather a little orange in tone: I assume there was such a bright purple in antiquity: it is closest to the red of the robes of cardinals. With the color remains found everywhere on the sculptures which had been buried under the soil, I first thought, that the reliefs essentially were the colors of the polished stone, i.e. black and only few parts, like ornaments, feather wings, lips, eyes, overlaid with red and bright blue, green, and yellow. *Now, it seems rather that all reliefs were entirely painted in brilliant,*

*alternating colors, perhaps on the polished, black ground. What a strange impression this must have been!*⁹¹

Herzfeld was obviously rather taken aback by these original traces of paint detected by his workmen. Two weeks later, Herzfeld sent a set of photographs to Chicago. In the accompanying notes he offers another interesting observation:

Herewith I attach some more photographs. ... (2) Gate building [i.e., the Central Building, Tripylon], back (northern) door. Lower part of the figures of the king and servants with vivid colors (we made watercolor sketches). (3) The same, hem of the robe of the king: besides the colors there was a layer of nearly 0.5mm gold.⁹²

Although these black and white photographs are preserved in the research archives of the Oriental Institute today, it is impossible to identify on them the position of the gold mentioned in the annotations to them. A watercolor of the same relief, prepared by Krefter, was published only few months later in April 1933; but no gold is indicated on it (**Figure 4.11**).⁹³ Thus, this evidence is frustratingly ambiguous.

⁹¹ "... Ich hätte fast vergessen, dass gestern bei der Freilegung einer Tür im Tripylon der untere Teil des Reliefs, König unter Sonnenschirm mit Dienern, in seiner vollen ursprünglichen Farbenpracht zu Tage kam. Ich habe es noch nicht ganz freilegen lassen, um alles vorzubereiten, sofort bei der Freilegung eine bunte Aufnahme anfertigen zu können. Die hervorstechendste Farbe ist ein leuchtendes, helles Rot für den Grund des Gewandes und für die Schuhe, es ist nicht Zinnober, sondern ein wenig nach Orange hin spielend: ich bilde mir ein, dass es ein solches helles purpurrot im Altertum gegeben hat: am nächsten steht ihm wohl das Rot der Cardinalroben. Nach den Farbresten, die sich überall an den in der Erde begrabenen Skulpturen finden, hatte ich geglaubt, dass die Reliefs wesentlich die natürliche Farbe des polierten Steines, d.h. schwarz, gezeigt hätten und nur einige Teile, wie Schmuck, Flügel, Lippen, Augen mit rot und hellblau, grün und gelb aufgehöhnt gewesen wären. Nun sieht es doch mehr aus, als seien die Reliefs so gut wie vollständig bemalt gewesen, in leuchtenden, gegensätzlichen Farben, vielleicht vor dem polierten, schwarzen Grund. Was für ein seltsamer Eindruck muss das gewesen sein!" (trans. mine). Herzfeld, Letter to James H. Breasted, November 5th 1932, Oriental Institute Chicago, Archives.

⁹² "Ich lege hiermit noch einige Fotos bei: 1. Der Thorbau von Süden: die Arbeiter finden gerade die neue Treppe im Norden, 2. Thorbau, die hintere (Nördliche Tür). Untere Teile der Figuren des Königs und der Diener mit lebhaften Farben (Wir haben davon Aquarelle gemacht), 3. Desgleichen, Kante vom Gewand des Königs: au sser den Farben war fast 0.5mm starkes Gold aufgelegt." Herzfeld, Letter to James Breasted, November 19th 1932, p. 5. Oriental Institute, Archives.

⁹³ Herzfeld 1933: 488, republished in Krefter 1989, pl. 1.



Figure 4.11 Central Building (=Tripylon), North, Eastern doorjamb, Detail, Watercolor by F. Krefter, published in Herzfeld 1933: 488, republished Krefter 1989, pl. 1.

Contradictory to the color scheme identified by Herzfeld in November 1932, Tilia later remarked that the traces of paint on the royal shoe on the doorjamb of the Central Building were red, not blue.⁹⁴

In 1986, the art historian Peter Calmeyer (1930-1995), re-examined the doorjambs of the Central Building and claimed to have identified red *and* blue paints on the shoes of the king (Calmeyer 1989: 133). Subsequently, Friedrich Krefter, the only staff member of the original excavation team still surviving, corrected Calmeyer, claiming that he saw *blue*, not red (and thus certainly also not blue *and* red) on the shoes when excavating the lower parts of this particular relief in 1932 with Herzfeld:

When I was excavating the base ... and the color remains appeared, I immediately called Ernst Herzfeld. One should not argue some 45 years later, that I would not be able to distinguish between blue and red shoes ... Fact is, the king wore red stockings. ... Paint splatters from the blue mantle. It is a fact that the shoes ... when I excavated them personally on the western doorjamb of the door of the Tripylon, were blue (Krefter 1991: 57-59).⁹⁵

In support for his claim for seeing both red and blue on the royal shoes in Persepolis, Calmeyer (1989: 133) referred to the observations by Flandin regarding the shoes on a relief of the Neo-Assyrian king Sargon II in Khorsabad, which were striped in red and blue (Botta and Flandin 1846, vol. I, pl. 14). This interesting historical comparison lends credence to Calmeyer's observation; but the fact remains that we are left with the

⁹⁴ "The blue color indicated by Herzfeld on the king's shoes must have been a mistake, since we found clear traces of red on them." (Tilia 1978: 56-7).

⁹⁵ "... Als ich am 22.2.1933 den Sockel des Rückgewändes ausgrub und die Farbreste ans Tageslicht kamen, habe ich sofort Ernst Herzfeld hinzugerufen. Man sollte 45 Jahre später nicht behaupten, wir hätten blaue und rote Schuhe nicht auseinanderhalten können. ... [...] ... Feststeht, dass der König rote Strümpfe trug. Farbspritzer blau vom Mantel Jedenfalls waren die Schuhe ... in der westlichen Türlaibung der Tür des Tripylon, als sie am 22. Februar 1933 von mir persönlich ausgegraben wurden, in ihrem Farbanstrich blau" (trans. mine). Krefter 1991: 57-9.

bewildering puzzle of two diverging witnesses, as no scientific analysis was conducted, nor were any detailed color photographs or scientific documentation ever published.

As already mentioned, Herzfeld's important observations regarding the applications of color and gilding to stone surfaces were only partially included in the final excavation reports, in which pigments on stone remains are mentioned only briefly (e.g., Schmidt 1953: 82, n.90; 116; 134, n.53; 257). Although many of the observations Herzfeld made on the colors on the monuments on the Takht during his directorship went unpublished even by Herzfeld himself, he did allude to *some* of his discoveries in print. He remarked, for instance, that

... the excavations of the covered parts of the sculptures of the Tripylon also revealed their original colors unchanged: purple red and turquoise blue, with application of metal, possibly gold (1941: 255).

A Case Study from the Hall of 100 Columns: The Figure in the Winged Disk

Despite his tremendous knowledge of an impressive range of subjects, the scientific nature of Herzfeld's approach to polychromy must be seriously doubted at times. Let us examine in some detail the case of the relief of the figure in the winged disk that was originally hovering above the image of the king on four doorjambs on the south side of the Hall of 100 Columns (**Figures 4.5-7**).

In addition to the above mentioned references to the pigments he observed in the Hall of 100 Columns in December 1923, Herzfeld drew the wing of a figure in the winged disk in a sketchbook and noted "excavated with fresh colors in front of the

eastern door on the south side of the Hall of 100 Columns.”⁹⁶ At some later date he added on the same sketchbook page the following annotation: “1931 re-found completely destroyed, dealers broke out the figure of Ahuramazda.”⁹⁷ Working from a second watercolor of the same relief, of unknown date and unknown hand (perhaps Herzfeld’s own), Herzfeld reconstructed the colors of this relief in vivid detail, noting that the background was black, while the colors stood out like “cloisonné enamel” (Herzfeld 1941: 255; there pl. LXIV in black and white; **Figure 4.12**).

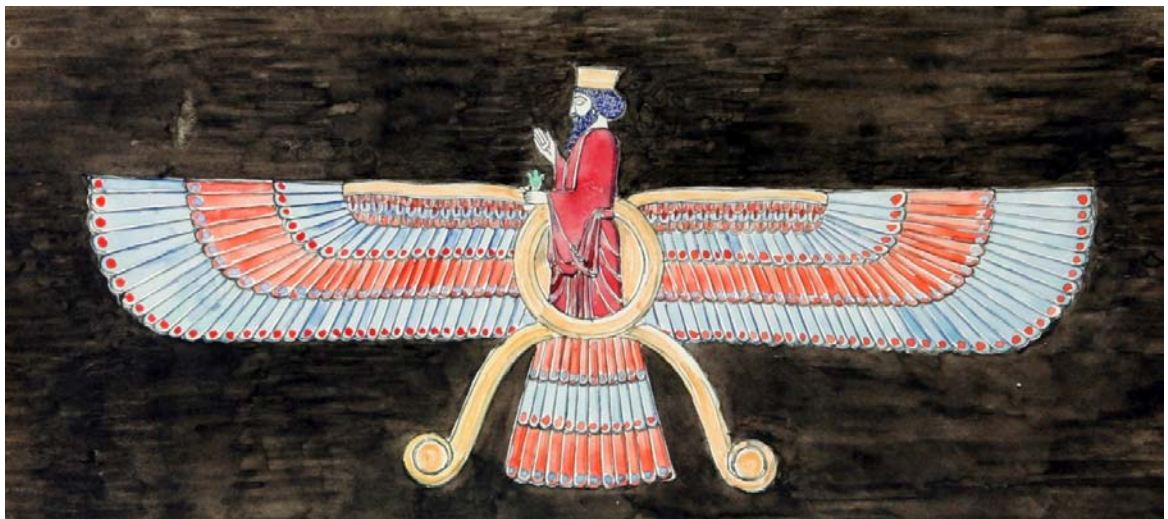


Figure 4.12 Watercolor of figure in winged disk, prepared by E. Herzfeld (?), Herzfeld Archives, Freer Gallery of Art, Washington DC = D 0904.

The issue of the background color for the sculpted reliefs at Persepolis is of great interest. Texier had observed a blue background, and recent research seems to confirm this for a relief from the Apadana, today in the British Museum (see Appendix 1, entry for London,

⁹⁶ Freer Gallery of Art and Arthur M. Sackler Gallery Archives, Smithsonian Institution, Washington, DC, Ernst Herzfeld Papers, Sk-IV Skizzenbuch Persien 1923, 2: “Vor der östlichen Thür der Südseite des 100 Säulensaales mit ganz frischen Farben ausgegraben“ (trans. mine).

⁹⁷ Ibid.: “1931 vollkommen zerstört gefunden, von Händlern die kleine Ahuramazda Figur herausgemeißelt“ (trans. mine).

British Museum 118845).⁹⁸ As we attempt to reconstruct various alternative scenarios to account for certain discrepancies (see below), we appreciate that Herzfeld's statements need to be treated with caution. First of all, the relief in question cannot have been "excavated" in 1923, since it was visible in 1892, when a mold was taken by an English/Italian team that had joined the expedition of Weld-Blundell on the site at the time (Smith 1932b: plate 1; Curtis 2000: 47 Fig. 54; see below Chapter 5). The relief had always remained on the site – it was put back in its original architectural placement in 1973 by the Italian restoration team headed by Giuseppe Tilia in collaboration with his wife, the art historian Ann Britt Tilia. Tilia (1978: 42) found it indeed doubtful that Herzfeld saw any traces of pigments on this particular relief. The evidentiary value of this specific watercolor is highly suspect.

There is, however, a better chance of reconstructing the polychromy of this composition, if we turn to the other reliefs depicting the same motif of the figure in the winged disk (**Figures 4.13-15**). Three such figures, all hovering originally over the enthroned king, and facing the interior of the hall in the southern doorjamb, are preserved. Of these three additional examples, two (like the one Herzfeld claims to have rendered in his watercolor) were restored to their original architectural positions by the Italian restoration team in the early 1970s (Tilia 1972: 51, Fig. 109, pl. XLIX; Tilia 1978, figs. 18-24, pls. XXIV-XXVI; Fig. 29 pl. XXIX). The fourth was removed from the site and entered the private collection of the U.S. art collector G. Winthrop (1864-1943), probably before 1930 (**Figure 4.15**).⁹⁹

⁹⁸ The mural from Susa shows the figure set out against a blue ground. This is considered by some to be the standard practice in Greek relief sculpture of the same approximate period.

⁹⁹ It was acquired by the Harvard University Art Museums after his death: Arthur M. Sackler Museum, Harvard University Art Museums. 1943.1062.

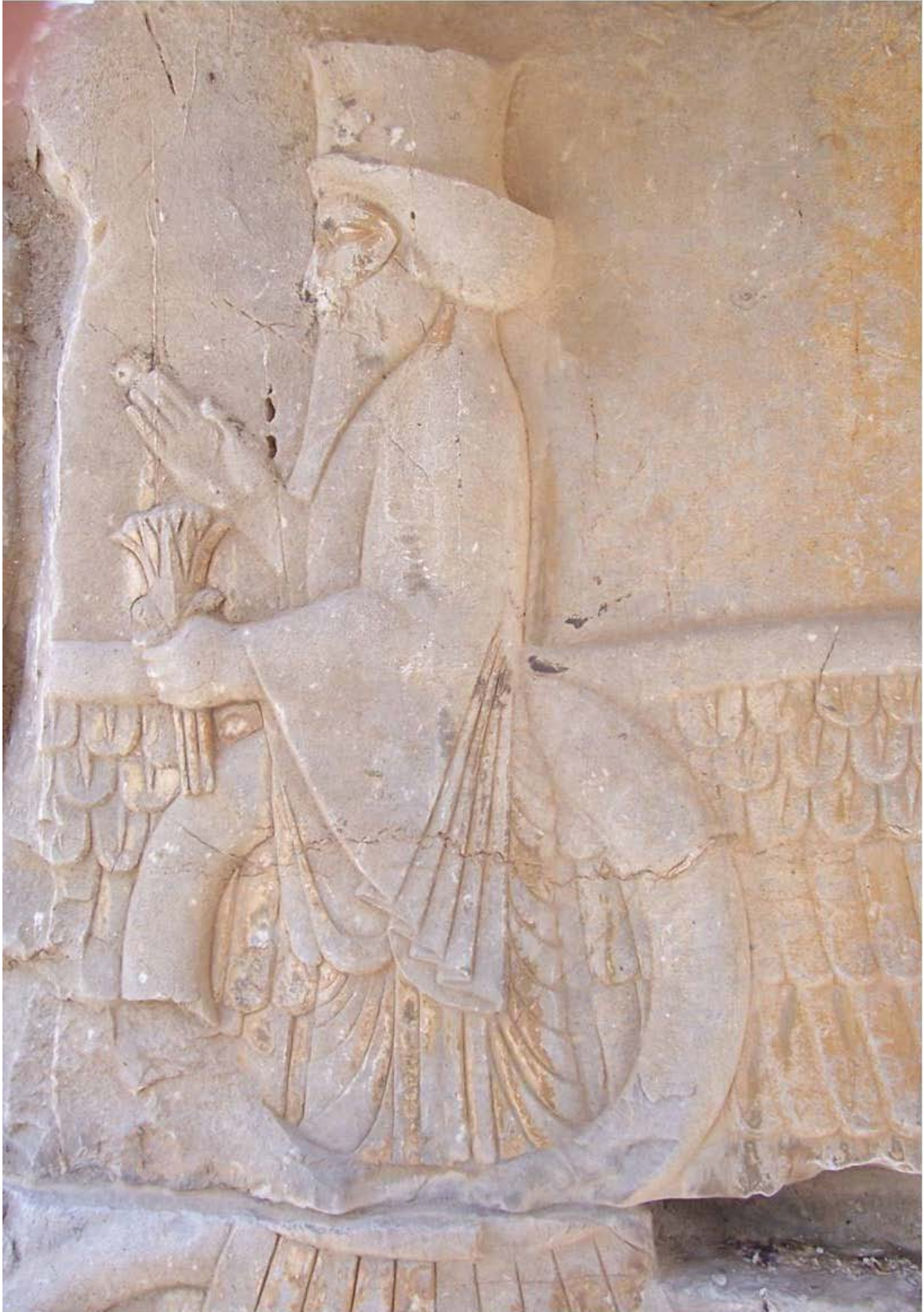


Figure 4.13 Figure in winged disk, Hall of 100 Columns, South, Western doorway, Eastern doorjamb, in situ, 2007 (Photo: A. Nagel)



Figure 4.14 Figure in winged disk, Hall of 100 Columns, South, Eastern doorway, Eastern doorjamb, in situ, 2007 (Photo: A. Nagel)



Figure 4.15

Figure in winged disk, Arthur M. Sackler Museum, Harvard University Art Museums. 1943.1062 (Harvard University), originally from Hall of 100 Columns, South, Eastern doorway, Western doorjamb

Originally mirroring each other, each of the four reliefs on these doorjamb preserves characteristic features allowing us to make some interesting statements about the complex interrelationships between sculptors and painters in the Hall of 100 Columns. They lead us into discussions on specific characteristics of polychromy in the context of the stone carving on the site in the Achaemenid period: certain details on these reliefs suggest that some parts of the reliefs that were not rendered by carving were painted on instead. By observing the reliefs it is striking what is missing and what is there. The eastern relief in the western doorway preserves the most detailed carving (**Figure 4.13**). Incised outlines of the feathers inside the ring and details of the flower held in the hand of the figure prove that this relief was perhaps the one relief considered to be nearly “finished” by the carver. Both the eastern and western reliefs in the eastern doorway, however, lack many details. The eastern relief of the eastern doorway *insitu* lacks detailed carving in the ring, but it does show the curls in the figure’s hair (**Figure 4.14**). The western relief in the same doorway (in Harvard), by contrast, lacks any carved details in the ring, beard, and hair; but the flower is articulated sculpturally. The missing details in each instance were therefore probably supplied in paint (**Figure 4.15**).¹⁰⁰ Within one set of relief sculptures the whole range of possibilities can be identified.

Judith Lerner worked as an independent researcher at Persepolis at various points between 1969 and 1975 (thus overlapping with the era of the Tilia’s restorations and investigations on the site). Lerner had previously worked at Harvard on the Persepolis fragment (Lerner 1971). She was the first to observe and document the remains of pigments preserved on the Persepolis “figure in the winged disk” in the Harvard

¹⁰⁰ The uppermost part with the winged figure was taken down during the conservation/restoration program by Tilia in the 1970s: Tilia 1978: 36. After it was examined for paint remnants it was put back in its original position.

collection. Based on this documentation of pigments, she proposed a color reconstruction (Lerner 1971: 23 figs. 9-10; Lerner 1973: 120-1). Lerner's reconstruction of the colors visible on the Harvard fragment was subsequently contested in some of its aspects by Tilia. The traces of the paints still preserved on the matching segments of the same relief that remained in situ in Persepolis were documented by Tilia as follows:

on the first row of feathers from the bottom there were plenty of green pigments, and ... the circular areas on the tips of the feathers showed traces of scarlet red color. The second row of feathers, on the other hand, showed numerous traces of red color, whereas the circles on the tips of the feathers had been painted blue.¹⁰¹

Tilia proposed a new reconstruction (**Figure 4.16**).¹⁰² None of the colors identified in the small feathers at the top of the wings by Lerner in the relief at Harvard were found in the fragments in Persepolis while the one in Harvard reveals evidence of alternating red and blue rows. The paint motif of the feathers inside of the ring from which the figure is emerging continues the lines of the carved elements of the relief (Tilia 1978: 36).



Figure 4.16 Figure in winged disk, Hall of 100 Columns, South, Eastern doorway, Western doorjamb (Tilia 1978: Pl. A Fig.1)

¹⁰¹ Tilia 1978: 33; cp. *ibid.* Fig. 1a.

¹⁰² It was Giuseppe Tilia and his studio TREERRE with illustrator Franco Trasatti who proposed a new color reconstruction of the winged figure, one of two new color reconstructions (Tilia 1978, 1995; Tilia and Callieri 2001). The documents of Tilia's activities on the site are today in Rome. Among the documents is also an earlier colored draft of a winged figure from the doorjamb in the Triaipylon. ISiAO, formerly Archive of ISMEO, Rome, Drawings, Inv. No. 4879.

An important feature of all the winged figures' feathers on the jambs are the incised circles on the tips. These circles had been observed by Herzfeld (see above with reconstruction **Figure 4.12**), and were studied by both Lerner and Tilia. The latter commented on a whitish substance along the edges, which is also seen on the small feathers on the top of the wings (Tilia 1978 pl. 26, figs. 22-24). Tilia observed that the outside of these framings show a high degree of corrosion and argued that

a special color had been used for a special foundation, which had had a corroding effect on the stone, and possibly one that was meant to imitate a metal, perhaps gold (1978: 36).

No chemical analysis has yet been conducted on these whitish substances. In photographs taken in the early 1970s of the reliefs on both jambs of the Western doorway, the edge of the feathers still showed a whitish substance that is mostly gone today. It has to be noted, though, that a very similar whitish substance remains visible on some other sculptures from Persepolis in contexts where it is rather doubtful that an appearance of metal was meant to be achieved. This is the case, for instance, with the whitish substance I observed in 2007 on the eyeball of a lion capital fragment from Persepolis, in the storerooms of the National Museum in Tehran, Inv. No. 1202 (**Figure 4.17**). It is more plausible in this instance certainly that the whitish substance is a vestige of a white colorant intended to be read as the color white.



Figure 4.17 Fragment of a lion's head from a Persepolis column capital, half life size. Tehran, National Museum, Inv. No. 1202, 2007 (Photo: A. Nagel)

Recently, a micro-sample was taken from the whitish spots on the small feathers on the top of the wings from the jamb fragment in Harvard (Eremin and Kandhekar 2008). The elements found on these indicate that a hydrated iron oxide was used, perhaps indicating a yellow ochre. Such yellow ochre may have been a ground-layer for gilding, but without any further investigation and analysis on the reliefs in situ, Tilia's proposed gold reconstruction must remain hypothetical.¹⁰³

¹⁰³ During recent investigations of a marble statue, c. 520 BCE, from Attica elements of gold foil were identified. They are technically analogous to the gold foil features hypothesized on the figures in the winged disk from the door jambs of the southern doors of the Hall of 100 Columns (Koch-Brinkmann 2010).

The dress of the “figure in the winged disk” on the Harvard fragment as seen through microscopic research reveals it to have been originally incised with patterns for an abundance of ornaments meant to be added in color.¹⁰⁴

Golden appliques may have been indicated on the dress in added paint, based on comparison with those depicted on garments of some honorguards on glazed brick reliefs from Susa as well as on later images depicting an Achaemenid ruler (e.g., the details on the border of the garment of Darius III in the so-called Alexander Mosaic, c. 100 BCE, from Pompeii: Hase 2009: 66 Fig. 4; *ibid.* 71 Fig. 5; Cohen 1997).¹⁰⁵ Finds from within Fars and all parts of the empire, as well as ancient texts support the idea that the actual Elamite and Achaemenid dress was rich with gold applications (Gleba 2008: 61). The holes on the pleats of the garment and on the shoes of king Cyrus on the surviving sculpted limestone reliefs (only the bottom parts are preserved) on the door jambs of Palace P, the “residential palace” at Pasargadae, were intended to keep metal attachments in place (Tilia 1968: Fig. 15; Root 1979: 51-2 and Plates II and III).

There has been much recent interest in and attention to garments as attested in the archaeological record of preserved textiles and depictions of them (Paetz 2009, Alvarez Mon 2009; see also the important observations made by Oppenheim 1949; Bovon 1963; Linders 1984). It is clear that only persons of high status could wear elaborate garments such as those with inweaved gold designs and with bracteates and embroideries (Kantor 1957). The recently excavated fourth century BCE dress ornaments from burials at Vani in western Georgia (Kacharava and Kirkvirkelia 2009: esp. 288-92 grave no. 24, Fig. 47)

¹⁰⁴ These new findings are to be studied by S. Ebbinghaus and J. Lerner.

¹⁰⁵ Stars appear earlier on the dress of Thetis on the relief from the Siphnian Treasury at Delphi in Greece (c. 525 BCE): Brinkmann 2008: 87 is not clear whether this was gold foil. Gage (1993: 25) remarks on the remnants of purple cloth with golden star medallions preserved in the Tomb of Phillip II at Vergina. Many prestige elements of the Macedonian court of Phillip were emulating the Achaemenid court.

and Southern Siberia (Polosmak 2001), add to already abundant evidence demonstrating the widespread use of such lavish garments among elites also on periphery of the Achaemenid Empire.

The Royal Throne: Further Observations on the Reliefs of the Hall of 100 Columns

Tilia states that Egyptian blue covered the molding of the very bottom of the throne leg on the eastern jamb, western doorway, southern side of the Hall of 100 Columns (Tilia 1978: 43 Fig. 2b). Here we must be aware that she is using the technical term “Egyptian blue” (which really should be reserved for a description of a particular mineral substance) simply to describe a blue hue. Both Lerner and Tilia independently noticed that one can also observe alternating red layers of paint (ochre?) as well as very tiny remnants of blue on a throne leg of another of these reliefs on the south site of the Hall of 100 Columns. Lerner has suggested multiple color possible reconstructions here. These are not published to date. Tilia reconstructed a version, apparently of the same area, that differs from any of the reconstructions proposed by Lerner, concluding that the vertical ridges of the throne’s bell shaped leg elements “must have been painted red and blue” (Tilia 1978: 43 Fig. 2a). It is, however, highly likely that the red ochre served as ground layer for a second layer (gold?). Indeed, fine, incised lines along the inner corners of these ridges showed a whitish substance and Tilia herself suggested the employment of gold over the red (Tilia 1978: 44).

In 1975, Lerner was given authority to take samples of pigments for further analysis from the stone relief on the western door of the southern wall, western jamb, and other

features of this monument (**Appendix 2**). She noted at the time that some of the blue pigments came away as thin and flaky, easily coming off the smooth, polished surface of the stone.¹⁰⁶ Based on personal observations made on the doorjamb's royal throne during various times of the day, beginning early in the morning, Lerner stated that "it is very difficult to distinguish blue from green."¹⁰⁷ The same was stated by Tilia (1978: 44, n.1).

Polychromies Compared: Glazed Bricks at Persepolis and Susa

The existence of colorful glazed bricks at Persepolis was already known from the explorations made by Weld-Blundell in 1892 (see above, Chapter 3), and Herzfeld's work on the site in 1928 (see above). During Herzfeld's and Schmidt's fieldwork on the Takht, large numbers of additional glazed brick fragments were found, especially in front of the Apadana: along the eastern facade and near the northeast tower (Herzfeld 1933; Herzfeld 1938: 38-41; Schmidt 1953: 70 Fig. 35). Herzfeld's early 1933 letters to Chicago refer to such fragments:

... We now have heaps of enameled bricks, the sort they have in Babylon and Susa, only they are purely ornamental: circles, rosettes, reed like plants ending in palmettes, triangles etc. One could do a whole wall or whole friezes with them. Their colors are preserved wonderfully, much brighter and more luminous than those at Susa. ... Thousands of tiles, but we need a museum atelier with skilled specialists.¹⁰⁸

¹⁰⁶ Lerner, unpublished log p. 3 sample 12.

¹⁰⁷ Lerner, unpublished log p. 4.

¹⁰⁸ „Wir haben jetzt Berge von emailierten Ziegel, wie die aus Babylon und Susa, nur dass es meist rein ornamental Muster sind: Kreise, Rosetten, schilfartige Pflanzen, die oben in Palmetten enden, Dreiecke etc. Man wird daraus eine ganze Wand bzw. ganze Frieze aufbauen können. Ihre Farben sind wundervoll erhalten, viel leuchtender und heller als z.B. in Susa. ... tausenden Ziegel, man braucht dazu aber Museums-Atelier mit geschulten Mitarbeitern“ (trans. mine). Herzfeld, Letter to James Breasted, January 20 1933. Oriental Institute, Archives. Cp. three further letters, where he indicates new "Berge von Ziegeln" in front of the Apadana, *ibid.*, May 12, 1933 and July 8, 1933, and November 16, 1933. Breasted became keen to restore a portion of this frieze for a new museum as is evident in a letter from June 6, 1933: "... I am very anxious to secure long stretches from the colored design of enamelled brick. If we could put up a small

A tentative reconstruction was soon proposed by Krefter and promptly published in April 1933 (Herzfeld 1933: 488). In an undated sketchbook, Herzfeld reconstructed a panel of these flat glazed enamel bricks on paper and noted craftsmen's marks on their backs.¹⁰⁹ This archival discovery has important implications for our understanding of the working process involving polychrome brickwork. Masons' marks have been well documented on the Persepolitan relief sculptures and columns (e.g., Nylander 1974; Roaf 1983). It will ultimately be necessary to compare the stone working marks with those on the backs of the bricks as recorded by Herzfeld. As further glazed bricks were excavated in the southern parts of the Apadana (southeast tower: Schmidt 1953: 122 notes two separate layers with glazed bricks), we can presume that the upper parts of the Apadana façade were at one point faced with these polychrome treatments.¹¹⁰

A panel with ornamental décor was rather “arbitrarily combined” as Schmidt admits and published in a black and white photograph (Schmidt 1953: 91 Fig. 35). That this restoration made little sense is apparent in Schmidt's own wording and from a quick look at the bordering parts of the panel, where no attention was paid to any matching of the fragments. Three separate panels with ornamental décor have been more recently reconstructed: one is an almost exact copy of Krefter's first watercolor reconstruction (Herzfeld 1933: 488), and is today displayed in the Museum at Tehran (Inv. No. 2003); the other two, in the Museum of Persepolis, perpetuate a model that pays little attention to

Persian museum building alongside our present new Oriental Institute building we could build a frieze of this design of enamelled brick entirely around the exhibition hall.” Breasted, Letter to Ernst Herzfeld, June 6, 1933. Oriental Institute, Archives.

¹⁰⁹ Freer Gallery of Art and Arthur M. Sackler Gallery Archives, Smithsonian Institution, Washington, DC, Ernst Herzfeld Papers, Sk-XVII Skizzenbuch Persepolis, p. 104. Cp. Sk-IV Skizzenbuch Persien 1923 (1928), p. 59. Cp. N-107, p. 73 Persepolis. Apadana, glazed tile frieze (“Feb. 17, 1933”).

¹¹⁰ Only one glazed brick was recorded for the so-called Harem (south of corridor 12: Schmidt 1953: 249 Fig. 107 I).

the combination of the bricks. It remains unknown to me at this point when exactly these reconstructions were made.

A second group of glazed bricks, also excavated in the same areas in the vicinity of the Apadana preserves cuneiform characters “glazed creamy white on a field of light turquoise” (Schmidt 1953: 71). The bricks inscribed with the name of Xerxes could be reassembled, both on paper and in the round.¹¹¹

One tantalizing fragment from a figural brick relief, preserving a segment of curled and wavy hair (unglazed?) has been discovered on the Takht—from room 38 in the Treasury (Schmidt 1957: 183 and pl. 41, Fig. 22—PT5 428). This single fragment proves that some building structures, perhaps within the Treasury itself were adorned with a system of brick relief which is not preserved.

In more recent times, Sami notes the discovery of a glazed tile apparently from an area of the interior of the Apadana during the later Iranian excavations (Sami 1955: 14). His publication does not, however, record details of the motif and its polychrome scheme. The glazed bricks from Persepolis have not yet been systematically inventoried, catalogued, and analyzed.¹¹²

¹¹¹ Freer Gallery of Art and Arthur M. Sackler Gallery Archives, Smithsonian Institution, Washington, DC, Ernst Herzfeld Papers, N -107, p. 73 (February 17, 1933), Herzfeld Archives, Freer Gallery of Art, Washington DC. The *Illustrated London News* of March 25, 1933, covered many of Herzfelds' discoveries with photographs. See Schmidt 1953: 98 Fig. 42: Chicago, Oriental Institute Museum, Inv. No. A 24112. A second reconstructed inscribed brick panel is today on display in the National Museum at Tehran.

¹¹² I plan to analyze the glazed brick fragment from Persepolis in the Freer Study Collection, Freer Gallery of Art and Arthur M. Sackler Gallery, Washington DC, in the near future.

Columns

Reconstructing the original polychrome appearance of the columns in the many halls on the Takht remains difficult. Stone columns were used in the Apadana, the Hall of 100 Columns, the Gate of All Lands, the Palace of Xerxes (Schmidt 1953: 241; Krefter 1971: 37), and the Central Building (Schmidt 1953: 112). Wooden columns set atop stone bases were used elsewhere, for instance in the so-called Harem (Krefter 1971: 27), the Treasury (more than 300 columns, see below), the Hall of 32 Columns and the chambers in what is generally labelled as the Garrison quarters, called the “Küchen-Trakt” by Trümpelmann (1988: 42), as well as in some areas of the Palace of Darius (Krefter 1971: 35), and in the palaces immediately below the Takht.

Important design elements of these columns reflect creative reworking of Egyptian and Ionian formal traditions. Thus it is highly likely that the Persepolis columns (and the similar ones at Susa and elsewhere at imperial centers) were elaborately adorned in ways that relate to traditions of architectural polychromy embellishment known from Western Anatolia, Greece and Egypt. Already in the nineteenth century, it seems that the remarks we encounter for the stone columns on Achaemenid Persia were influenced strongly by ideas current at the time concerning Greek architectural adornment. Evidence in the temples along the western reaches of the empire of relevance for the Achaemenid columns is indeed quite extensive. The columns of the colossal temples in Ionia (e.g., Ephesus, Didyma, Priene) spring to mind, although it is hard to estimate their original appearance. On the volute of an archaic column capital of the temple of Artemis at Ephesus, a channel between two astragal moldings was covered with lead on top of which

gold-leaf was preserved (Jenkins et al. 1997: 38 pl. 14 Fig. 34).¹¹³ Of particular note is evidence from the Tomb of Mausolus (the Mausoleum) of Halicarnassus, fourth century Hecatomnid satrap of Achaemenid Caria. Here, a leaf ornament of an Ionic capital retains copious traces of blue pigment still visible today (Jenkins et al. 1997: 36 and col. pl. 6-7). The nineteenth century excavator of the Mausoleum, Newton, also observed that the column *shafts* were painted as well along with many other elements (ibid. 39).¹¹⁴ Unfortunately, this evidence described by Newton is no longer apparent. Quite recently, the original observations of the monument at the time of its clearance have been viewed with skepticism (ibid.). It has apparently seemed more plausible to Jenkins et al. that a varnish had been applied to the [unadorned?] column shafts in the Mausoleum “producing a white reaction layer.” But it is not clear to me on what basis the rejection of Newton’s observations has been made. The Mausoleum, with its idiosyncratic architectural form and its lavish sculptural decoration, occupies a complicated place in discourses on artistic production and cultural meaning in the ancient world. For many, it stands as an iconic monument in the textbook repertoire of classical Greek art. Classical texts name the sculptors of the relief sculptures of this monument as Greek (Cook et al. 2005: 17-28). Yet it cannot be denied that it is in fact a tomb commissioned by a satrapal court of the Achaemenid Empire, surely speaking to a lively creative patronage agenda (Gunter 1986).

¹¹³ Orlandos argued that the meander pattern on the architrave of the Parthenon may have been gilded against a red background (Orlandos 1978: 645). This enhances the vision of a vividly polychrome Parthenon in areas of the structure closely associated with the columns themselves.

¹¹⁴ Jenkins et al. 1997 quote from an original letter of Newton in 1857: “...The columns, their bases and capitals, were all coloured, so were the cornice, frieze and subordinate architectural mouldings. ... It would be rather important to examine which parts were not coloured, so universally do traces of colour appear.”

Returning specifically to evidence for polychromy on stone columns, there is also testimony of this practice from mainland Greece of the classical age. In the mid-nineteenth century, the French architect Alexis Paccard stated that the columns of the Parthenon were covered with yellow ochre (Burnouf 1847: 847; Blümner 1912: vol. III: 169). It is widely known, however, that the columns of the monuments of ancient Egypt were brightly decorated (e.g., Phillips 2002: 291-303). Egyptian stone columns of the New Kingdom were in many cases covered with a gesso (a mixture of whiting and glue) and painted afterwards, sometimes inlaid with faience tiles. It has been repeatedly argued that the surface decor often aimed at imitating other materials—marble or even gold (Phillips 2002: 291).

Evidence from other ancient Near Eastern sites from later periods offers abundant comparanda for consideration along with the comparanda from around the empire contemporaneous with Achaemenid rule. The columns of the Great Temple at Nabataean Petra had their own distinctive color schemes. While the columns at the northern side entrance of the Great Temple were covered with a plaster coating painted in red, the columns on the other sides alternated between red and yellow and some highly polished surfaces indicated that the polish was meant to resemble marble, the imitation of more expensive materials. The pronaos columns were excavated covered with remains of red plaster, while the columns in the temple were covered with plaster and stucco which had a different decoration in the lower and upper parts (Shaer 2003: 111-113).

It has been argued that the central hall of the Red Building at Parthian Nisa originally had plaster coated wood columns adorned with painted decoration similar to what has been reconstructed for the Persepolis Treasury on the basis of the material

evidence unearthed by Schmidt (Lippolis 2009: 558; see below). At the same site, the half columns from the Square Hall had colored capitals in mud clay (Lippolis 2009: 556). Traces of a red color have been recorded for the column bases and the shafts (Lippolis 2009: 556).

Turning to evidence from the Achaemenid heartland itself, de Miquenem remarked that in Susa the column flutings appeared with yellowish tone, suggesting that they were originally covered with gilding (1947: 38). More data emerge from Persepolis. These are, however, limited to the original decoration of wooden columns. During Schmidt's excavations in the Treasury, painted gypsum plaster fragments, some 8 to 10 cm in thickness with reed impressions on the back, that had once adorned interior wooden columns were excavated close to some column bases in Halls 38 and 41, and carefully documented (Schmidt 1953: 145 and Fig. 72J; Schmidt 1953: 160-61; see color reconstruction by Tilia in Shahbazi 2004: 190 Fig. 153). The reconstruction by Haines labels the color scheme pattern in red, white and blue in "an intricate pattern of interlocking lozenges elaborated with paired scrolls" (Schmidt 1953: 160). These pigments have never been tested in any way and their present location is unknown.

Krefter (1971: 35) suggested that pieces of dark and white onyx (so-called eye stones) that were excavated in the Treasury (Schmidt 1957: pl. 44) may have originally belonged to wooden column capitals that crowned the wooden columns, since a number of these eyestones were also found in the so-called Harem, where wooden columns existed, too.

In excavations south of the platform between 1969 and 1972, Tadjvidi discovered a stone column base with a plastered wooden column shaft, but did not comment on the

color schemes identified (Tadjvidi 1976: 185; Potts et al. 2009: 220 Fig.11). During the excavations at the Shaour Palace at Susa, the excavators noted abundant traces of blue paint and argued that the paints originally covered wooden column shafts in the hall (Boucharlat 2010: 394 Fig. 455).¹¹⁵ A similar treatment with blue paints may have been employed on a column excavated at Qaleh Kali, halfway between Persepolis and Susa. Significantly, a potsherd encrusted with blue pigments was excavated in front of one column base here (**Figure 4.18**).¹¹⁶



Figure 4.18 Sherd, encrusted with Egyptian blue pigments, excavated by the at Qaleh Kali (Photo: D. Potts, University of Sydney)

¹¹⁵ “Les traces de peinture bleue retrouvées au pied de certaines bases proveniennent probablement des fûts en bois étaient recouverts d’une couche de plâtre avant d’être peints.”

¹¹⁶ This building complex may have served to accommodate those who traveled between the two heartland capitals along the Royal Road (Potts et al. 2009).

There is evidence for the decoration of the Persepolitan stone column capitals above the flutings. In 1969, Giuseppe Tilia reported fragments of lime stone composite capitals including fragments of a bull's nose with bright red color in its nostrils, two fragments of eyes with red paint, and a small fragment of one of the bull's eyes with traces of blue on the eye lid at the foot of the southwest corner terrace wall below the so-called Palace H (Tilia 1972: 244 n.3 and 245ff. and Fig. 22). An unpublished fragment of a stone lion's paw with remnants of blue paint excavated on the Takht and today in the Oriental Institute, adds to the evidence, that blue was indeed of ten used to paint the stone sculptures and had particular associations with the lion and the bull (and their cosmic links) (**Figure 6.8**). Schmidt had earlier identified traces of blue paint on the bull capitals represented on the palatial façade depicted in relief on the façade of the Tomb of Darius I (see below). It is generally understood that the renderings on the royal tomb façades depict a faithful vision of actual palace architecture of the time. Among the finds belonging to one (or more) of the buildings in the southern part of the terrace were column capital elements including addorsed bull protomes with small bored holes around the eyes, on the eyebrows, and on the curls of the hair. These holes were presumably originally used to attach metal ornaments (Tilia 1974: 241; 1978: 68 and Fig. 55). Traces of blue paint are preserved on ears belonging to such column capital protomes (**Figures 4.19-20**).



Figure 4.19 Ear of a bull, excavated on the Takht, Persepolis, Museum, Inv. No. 303 (Photo: A. Nagel).

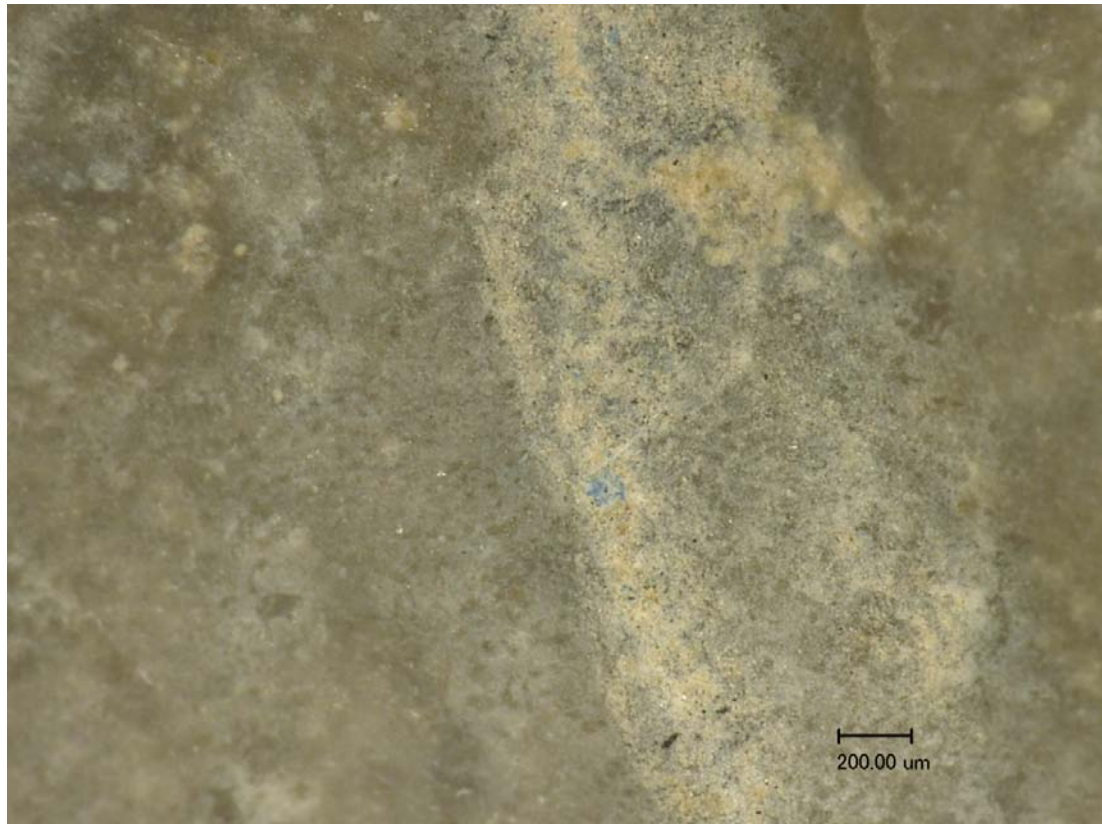


Figure 4.20 Ear of a bull, excavated on the Takht, Detail, Persepolis, Museum, Inv. No. 303 (Photo: A. Nagel).

Other features of architectural and sculptural polychromy in Persepolis

One of the open courtyards of the Treasury became the location for the two original central panels of the Apadana façades, which were removed probably in the reign of Artaxerxes III (“Courtyard 17”: Schmidt 1953: 162-70; Tilia 1972: 175-98). The rosettes carved on the frames of these re-positioned central panels that were rehoused in the courtyard were echoed in painted equivalents on the framing borders of the doorways in the very same courtyard (Schmidt 1953: 160 and Fig. 68B). Although the actual material evidence seems to have been destroyed shortly after, a description of a six-phase application was determined:

1. A solid band of blue was applied to the greenish-gray wall surface.
 2. The outline of a narrower band was sketched on the blue base in a reddish or neutral tone.
 3. A white coat with irregular edges was applied thickly over the narrow strip outlined in the second phase.
 4. The irregularities of the white band were corrected and straightened by applying more blue on top of the white along the edges.
 5. With a small brush the design of rosettes and bordering triangles was sketched freehand on the white band in neutral tone.
 6. Blue and red colors were applied to the design stage of the fifth phase.
- (Schmidt 1953: 160)

It is impossible to verify these observations of a sequence of application or even to understand the evidence upon which the information was supplied.

In 1955, Ali Sami reported on important discoveries made “below the platform of Persepolis” in 1951. He records:

In the course of removing earth pieces of coloured flowers, which decorated the roof and walls of the rooms in red, blue and white were found, and it is plain that, after plastering, the rooms were adorned with various designs of flowers and leaves in fast and beautiful colours, but since these designs were carried out in plaster, which has remained under the soil, damp has disintegrated it, and we were not able to find a single sound piece. The floor of the hall was spread with the same red plaster as we have described in other buildings above (Sami 1955: 59).

The pigment bowls from the Apadana

The Apadana was and remained the landmark building on the terrace platform ever since its construction began in the late sixth century BCE.¹¹⁷ Measuring some 110 m in length on each side, with thirty-six stone columns supporting the central hall, and a group of

¹¹⁷ For a general description see Schmidt 1953: 70-106, 162-69 and pls. 15-61; Krefter 1971: 45-54; Tilia 1972: 125-208; Root 1979: 86-95. The foundations for this massive enterprise, the most imposing and thick walled Persepolis hypostyle hall were laid by c. 515 BCE or somewhat earlier (Root 1988, 2010). Work on the building continued over a lengthy period, from Darius to Xerxes with several later changes. The foundation deposits under the building included a stater from Aegina, a tetradrachm and croeseids from Abdera, and silver coins from elsewhere, all of which are now housed in the Iran National Museum and Marble Palace Museum in Tehran has been found in the excavations. Meadows 2003 has new notes on the Apadana foundation deposit (IGCH 1789) that seek to provide a firmer interpretation of this important numismatic evidence. Zournatzi 2003 argues that these coins were symbols of Darius I's control of western sources of wealth and leading centers of western economic activity.

storerooms between the two southern towers, this building was a colossal enterprise in many respects. It made the entire monument the largest building ever constructed in pre-Islamic Iran. In the corners of the building, stairways once led to upper mezzanines and floors. Seen from afar the Apadana dominated the entire Marvdasht plain (Root forthcoming). The staircases on the north and east are adorned with the famous reliefs of gift-bearers from the subject lands paying homage to the Great King.¹¹⁸

Herzfeld and Schmidt cleared the front of the Apadana according to their objectives. It was only in the 1970s that surprising evidence was discovered during probings below the level of the façades. When removing the lower parts of the inner western flight of the northern stairway in order to repair them in the spring 1978, Tilia noted some 26 cm below the bottom of the rosette border lumps of green, red, and blue colors spread over an area some 2.50 m long and 60 cm wide. Also, they found potsherds with pigments of the same color encrusted on them (Tilia 1978: 69).¹¹⁹ In 2004, further sherds encrusted with red and blue pigments were excavated in front of the east façade of the Apadana. This material awaits analysis. We will return to these significant discoveries in Chapter 6.

Evidence for painter's activity comes also from the in-door structures of the building. In room 6 of the southern tower of the Apadana, Schmidt had already excavated a bowl lined with green pigment, but the substance has never been properly analyzed (Schmidt 1953: 74 and Fig. 32 "Room 6"). Schmidt suggested that the green pigments were used for the repairs of the walls and floors (ibid.). During the final excavation

¹¹⁸ The iconography and artistic program of the facade reliefs has been studied extensively (see, e.g. Walser 1966; more recently: Root 2007, 2008; Gropp 2009).

¹¹⁹ The curator of the Persepolis Museum, Mr. Bordbar and I have not been able to locate the potsherds in the storerooms in 2008.

season in 1939, a sherd encrusted with a blue pigment was found in room 21 of the Apadana and analyzed by Matson as Egyptian blue (Schmidt 1957: 133 = PT 7 381, Plot HE 41). This sherd is said to be housed in the Oriental Institute, but could not be located in 2007.¹²⁰

Elsewhere on the Takht, paint bowls were found, too. As noted earlier, Herzfeld found a bowl containing actual pigments in the so-called Harem area. In the Treasury, Schmidt excavated a “grinding bowl” of gray basalt, smoothed by use on the interior. In the same spot, he found a limestone polisher or grinder retaining traces of red pigment (Schmidt 1953: 191 room 81 = PT 6 452; Schmidt 1957: 102 pl. 80.10). He also found a small stone object covered with “pink matter” (Schmidt 1953: 185 room 51; Schmidt 1957: 102-3, pl. 80. 12 = PT 6 213, lost at sea). In 2008, I identified in the storerooms of the Persepolis Museum a large number of blue pellets, measuring some 2 cm in diameter each (**Figure 4.21**). Their find circumstances are unknown today. They have not yet been analyzed.

¹²⁰ In the same room of the Apadana, pieces of gold foil were found (Schmidt 1953: 75), but their present location is unknown.



Fig. 4.21 Pellets and other objects, presumably of Egyptian blue, excavated on the Takht, Persepolis Museum Storeroom, 2008 (Photo: A. Nagel)

Another large number of paint bowls and associated material of Achaemenid date were excavated by the Italian-Iranian team below the southwestern corner of the platform during work that continued until 1973 in the area of the so-called Palace H. This zone bears remnants of at least three successive buildings, two of Achaemenid date, one post-Achaemenid (Tilia 1974: 239).

In December 1971, after excavations were conducted southwest of Palace H samples from a bowl containing pigments were given to Lerner for analysis (Lerner log p. 7). Especially important, however, was a stay in summer 1975, when Lerner was able to take detailed photographs of a large number of fragments with traces of pigments on

them, and was allowed to take some four dozen samples of pigments from the monuments for further chemical analysis (Stodulski et al. 1985).¹²¹ The samples included pure pigments from cleanings that were conducted below the eastern doorway of the Central Building in spring 1975. A glimpse of these excavations has recently been reported by Mousavi (2002: 245): “During the cleaning mudbrick fragments were found, as well as paint pigments of yellow, red and Egyptian Blue, which had once been applied to the reliefs. Sculpture fragments were also uncovered.” I have not been able to identify any of this material in the museum storerooms in Persepolis.

So far no paint pots per se have been recognized from the Susa excavation finds. But clumps of earth encrusted with paints were noticed by Roman Ghirshman in the 1930s in the area of the Apadana, and by Daniel Ladiray at the Gate of Darius in the 1970s (Perrot 2010: 254 n. 17).

The Façade of the Tomb of Darius I at Naqsh-e Rostam

Already in the nineteenth century, the rock-carved facade of the Tomb of Darius I (†486 BCE) was the subject of important observations on polychromy by Houssay (see above, Chapter 3). Schmidt published the findings of the Chicago 1930’s expedition at Naqsh-e Rostam in 1970, but does not seem aware of this earlier testimony. Despite his inattention to this earlier evidence, Schmidt does offer crucial new information about the original polychromy of this monument, although it is embedded in such a large documentary publication that it has perhaps not achieved the attention it deserves:

¹²¹ I am most grateful to Judith Lerner for providing a copy of her sample log from July 29 to August 9, 1975.

Traces of blue pigments discovered by Boris Dubensky [i.e., the expedition's photographer] in some signs of the DNA inscription behind the king's figure are sufficient proof that all characters of at least the Old Persian and Elamite Versions of this inscription were painted blue, and we see no reason to doubt that all inscriptions on the tomb were treated in the same manner (Schmidt 1970: 84).

Some seventy five years later, during restoration work between 2001 and 2005 it was possible to make new observations on the polychromy of the façade. Abundant evidence of polychromy is now attested not only for the inscriptions, but also for other parts of the façade (**Figure 4.22**).

The central figure in the top register is Darius I, measuring 2.70 m high. He is depicted in profile facing a fire altar and the figure in the winged disk. Darius stands with his left foot forward on a three stepped pedestal. The pedestal itself is resting on a throne platform. Many traces of blue pigment have been identified on the curls of the beard and hair of Darius. Traces of red pigment have been identified on the visible eyelid, eyeball, and the lips. Black lines accentuate the inner eyelid (**Figures 4.23-26**).

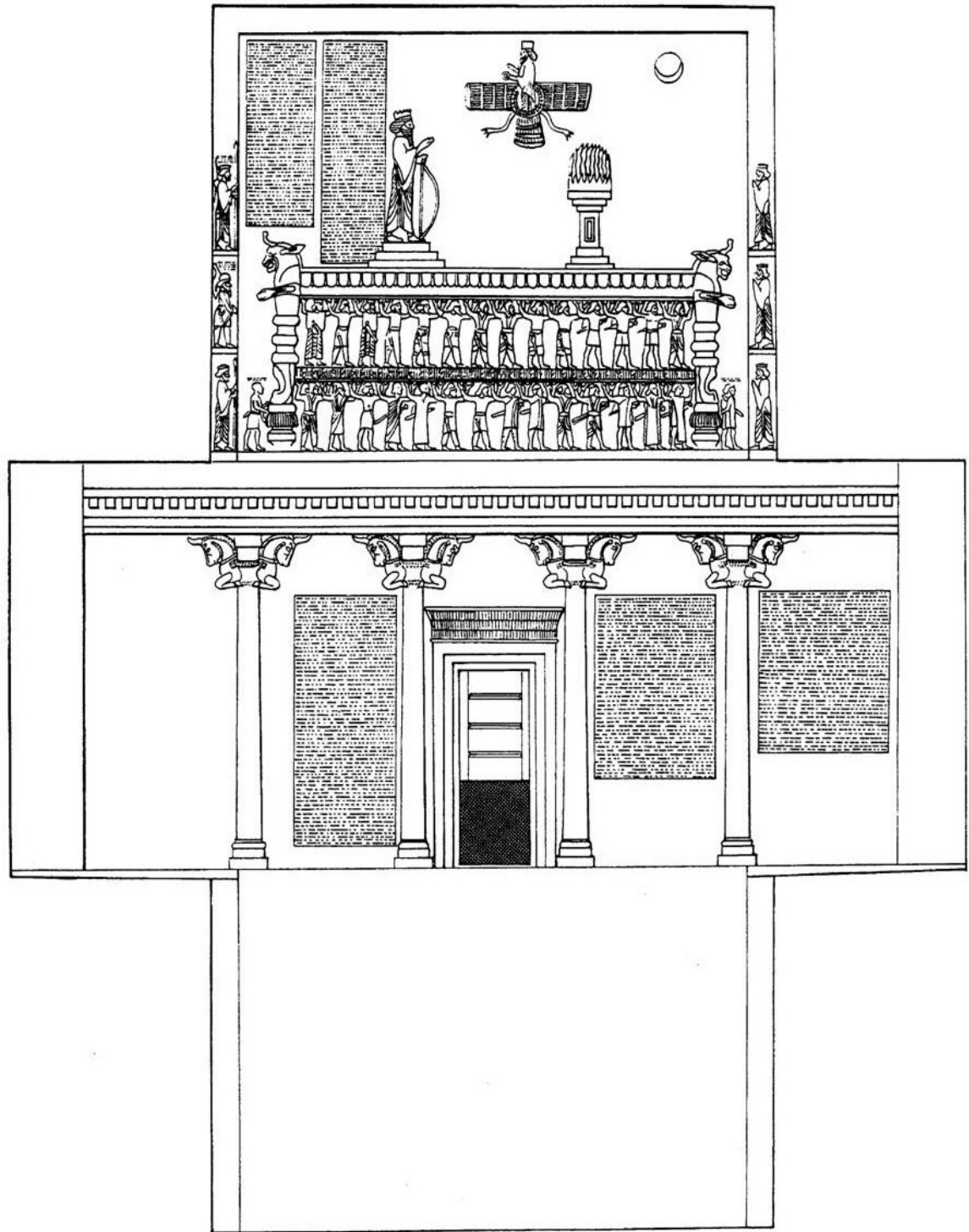


Figure 4.22 Drawing of the façade of the Tomb of Darius I at Naqsh-e Rostam (after Seidl 2003).



Figure 4.23 Traces of paint on the figure of Darius: detail of the headgear, 2003 (photo H. Rahsaz)

Figure 4.24 Traces of paint on the figure of Darius: detail of the beard, 2003 (photo H. Rahsaz)

Figure 4.25 Traces of paint on the figure of Darius: detail of the mouth, 2003 (photo H. Rahsaz)



Figures 4.26 Recently identified paints on the eye of the figure of Darius. Façade of the Tomb of Darius I at Naqsh-e Rostam, 2003 (photo courtesy of H. Rahsaz)

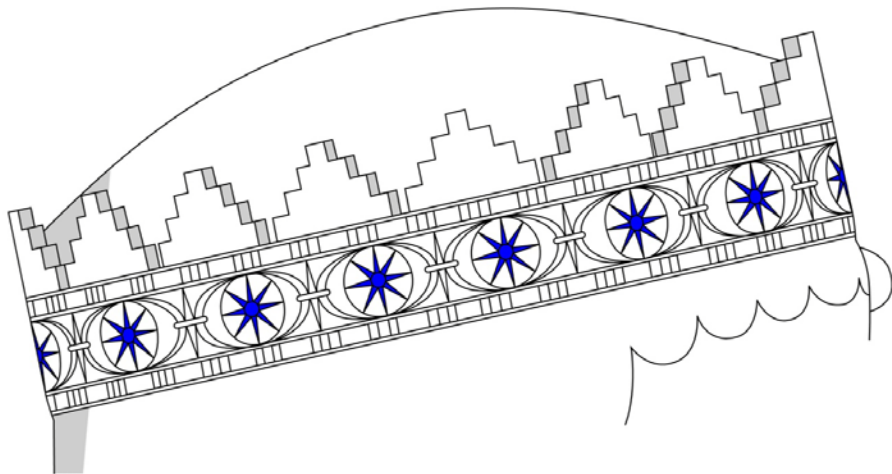


Figure 4.27 Reconstructed color scheme for crown of Darius, based on actual color remnants preserved on the crown of the Tomb façade of Darius I at Naqsh-e Rostam overlaid onto a drawing of the crown of Darius as depicted with details in relief at Bisotun (drawing after Tilia 1978: 58 Fig. 7a, color overlay by A. Nagel)

Traces of blue and white pigments have been identified on Darius' headdress, the royal crown with three-stepped crenellations resembling the one Darius wears on his relief at Bisotun (Luschey 1968: 72, pl. 33).¹²² The illustration below is an attempt to reconstruct this one aspect of the crown of Darius I at Naqsh-e Rostam (**Figure 4.27**).

On the tomb façade, Darius I is dressed in the Persian court robe. The detailed painted motifs detected on similar representations in Persepolis have been meticulously reconstructed by Tilia (1978: 54, Fig. 6; Kuhrt 2007: 532, Fig. 11.25) and may provide a clue to the original appearance of the king as he was depicted on the façade relief at Naqsh-e Rostam as well, even though no paint has been observed on the robe of royal figure here so far. A somewhat dark red pigment has, however, been recorded on the shoes of the ruler on the Tomb façade, perhaps as a priming layer for an additional coating. No traces of paint have been identified so far on either the pedestal or the fire altar depicted in front of Darius. Similarly, no traces have been identified on the figure in the winged disk.

Behind the image of Darius I are inscriptions in Old Persian, Babylonian, and Elamite (**Figure 4.28**). Abundant traces of blue paint from these inscriptions were recovered from paper squeezes Herzfeld made in 1923, which are now in the Herzfeld Archives in the Freer Gallery of Art and Arthur M. Sackler Gallery, Washington, DC (**Figures 4.29-30**). The preserved pigments were examined in the Freer Gallery's Conservation Laboratory by conservator Janet Douglas and myself in October 2009 and

¹²² For various discussions of the crown see, e.g., Schlumberger 1971 and von Gall 1974: esp. 147; Calmeyer 1976 and 1984; Root 1979, in press b; Henkelman 1997. No traces of paint have so far been documented for the great rock relief and inscriptions of Darius at Bisotun. See Luschey 1968: 83: "Von einer ursprünglichen farbigen Fassung ... konnten wir keine Spuren mehr feststellen."

identified as a Egyptian blue.¹²³ In 2003, traces of “red (?) colour pigments” were mentioned to Adriano Rossi by Hassan Rahsaz as having recently been discovered in an inscription on the southern tomb above the Takht (Rossi 2006: 475 n. 105). I have not had the opportunity yet to verify this observation myself at close range. So far, in my examination of this tomb façade, logistical considerations have made it impossible to look at these inscriptions at close enough range. One hopes that eventually any traces of this material might be analyzed to determine their precise chemical make-up. If it turns out that the materials indicate a red pigment we must be aware that these could either have been used to indicate red or as a ground layer for an additional top layer (e.g., gilding?). The exact nature of the color reported seems to be in question. Just before this dissertation was finalized for online dissemination, in July 2010, squeezes of some parts of the inscriptions of Darius (DPd-g) on the south wall of the Takht at Persepolis were rediscovered in the Herzfeld Archive in the Freer Gallery of Art and Arthur M. Sackler Gallery. It remains to identify specifically which segments of this inscription are represented by these squeezes. The squeezes have not yet been subject to levels of examination and testing as appropriate. At issue will be the possibility that some remnants suggesting gilding will be found to confirm the observations of Kaempfer in 1685 (Wiesehöfer 1991: 85). It should be clear that the royal inscriptions, very much like the reliefs themselves, were therefore “animated.”

¹²³ Freer Gallery of Art and Arthur M. Sackler Gallery, Washington, DC: Conservation Laboratory, Record No. LRN 7165 (February 1, 2010): FTIR-analysis, Scanning Electron Microscopy.



Figure 4.28 Detail of Old Persian Inscription on the façade of the Tomb of Darius, 2003 (Photo: H. Rahsaz)



Figure 4.29 Detail of blue paint residues on paper squeeze taken from Old Persian Inscription on the facade, Herzfeld Archives, Freer Gallery of Art and Arthur M. Sackler Gallery, Washington, DC, 2009 (Photo: A. Nagel).



Figure 4. 30 Details of blue paint residues on paper squeeze taken from Old Persian Inscription on the facade, Herzfeld Archives, Freer Gallery of Art and Arthur M. Sackler Gallery, Washington, DC, 2009 (Photo: A. Nagel).

Courtiers and soldiers, representing the two columns of the Achaemenid Empire, are depicted in the flanks, the two top figures left of Darius being Gobryas and Aspathines, identified by their inscriptions, which were highlighted in blue.

Personifications of the lands of the empire in the various peoples who can be identified through their legends, are also accompanied by inscriptions in three languages (Old Persian, Elamite, and Babylonian) highlighted in blue. These labels were framed with fine chiseled lines, also filled in with blue. The frames, first chiselled and then filled in with blue paint have highlighted the message sent with the inscriptions themselves.¹²⁴

¹²⁴ It is important to state that framing monumental inscriptions is a rather unusual feature in contemporary ancient Greece (Herzfeld 1915). For pigments in inscriptions in the greater Mediterranean see: Nagel, forthcoming.

Blue was also found in the leaf-like ornaments which constitute the uppermost part of the throne platform. Furthermore, the lionine creature which is part of the furniture preserves remnants of blue on the body and mane, and red in the mouth.

Traces of paint have been identified on the entablature, separating the middle and top register, measuring 1.60m in height.¹²⁵ This entablature presumably represents the wooden roof of a palace; three horizontal units project into inverted steps in the form of plain bands. On the dentils in the lower unit, there were traces of red, while the background was painted in blue. Traces of red, blue, and green pigments were identified on the fillet of the register. Paints have been identified all over this entablature, and also at the center of the area. On the last royal tombs (carved above the Persepolis Takht), these parts are adorned with a frieze of eighteen lions arranged antithetically with a lotus flower in the center (Schmidt 1970 pl. 75; Calmeyer 2009, pls. 17.3 and 32.1). The painted pattern on the façade of the tomb of Darius I is highly suggestive of this animal frieze found in sculpted form on the later Achaemenid tomb façades at Persepolis. There are traces of green in the fillet's central part indicating the existence of an earlier painted lotus flower in the center.

The middle register evokes an architectural façade featuring four plain columns on rectangular two-stepped bases with a torus and bull capitals carrying a beam below the architrave. As noted above in connection with the evidence for actual stone columns, Schmidt identified traces of blue paint on the bull capitals represented on the tomb façade. This is in accordance with the blue identified on the body of the animal protome capitals of the palaces at Persepolis. The horns of the bull protomes carrying the roof on

¹²⁵ No traces of paint were identified in the lower register of Darius' tomb. Musche's (2006) hypothesis of a free standing wooden stairway enabling access to the tomb and therefore covering the lower register of the façade provides a convincing explanation for this absence.

the top register were made separately. No details have been observed indicating the type and appearance of these horns.

Traces of original paint were also identified on the Egyptianizing cavetto cornice in the middle register's central doorway. The leaves of this cornice were decorated in an alternating blue and red color scheme, with a fin in the centre of each of the individual leaves - a color scheme evoking that scheme known as "painted leaf" from the façades of contemporary Egyptian and Greek monuments (e.g., Brinkmann 2008 figs. 107-8, 119, 179). On the door leading to the tomb chamber of Darius I, the blue leaves were decorated with a red fin, while blue fins correspondingly filled the other scales (**Figure 4.31**).



Figure 4.31 Detail of Cavetto. Façade of the Tomb of Darius I at Naqsh-e Rostam (Photo: H. Rahsaz)

Although all Achaemenid tomb façades in Naqsh-e Rostam and above the Persepolis terrace seem superficially to be similar in form and detail, such similarity must not necessarily mean that all looked the same in the end. Clearly, there was a uniform system of iconographical references but, added colors made differences. One example will be sufficient. Since the publication of Schmidt's volume on the Achaemenid tombs at Naqsh-e Rostam and Persepolis it has been established that the construction of the tomb of Darius I began early in Darius' reign, probably very soon after 520 BCE (Schmidt 1970: 80-89). The Tomb of Darius I became a shrine and a model for all subsequent Achaemenid tombs. The carved iconographic motif of the façade of the Tomb of Darius I was repeated on the façades of the tombs of all subsequent Achaemenid rulers. Such was, however, not the case with the polychrome decoration. While Schmidt did not observe any traces of pigments on the tombs of the successors of Darius (Schmidt 1970: 92) this opinion needs to be revised. Observations in 2008 revealed that the Egyptianized cornice of the doorway of the middle register of tomb V (= tomb of Artaxerxes II?) at Persepolis has green and blue leaves rather than the red and blue found on Darius' tomb façade at Naqsh-e Rostam. No painted fins can, however, be identified on the leaf scheme (**Figures 4.32-36**). H. Rahsaz and I argue elsewhere that the traces of paint on these later tomb façades are vestiges of the original polychromy, applied to the surface of the façade in the months immediately following the carving of the sculptures and inscriptions (Nagel and Rahsaz 2010).¹²⁶

¹²⁶ Naturally, the paints could also stem from later periods of repainting. It is, however, beyond the scope of this dissertation to probe that issue further. Future investigations and technical analysis may well provide additional information about the existence of possible paint preparation layers or re-paints. The interior of the tomb may have been painted, too, but no evidence has been found thus far.



Figure 4.32 Façade of the Tomb of Artaxerxes II, Persepolis, 2007 (Photo: A. Nagel)



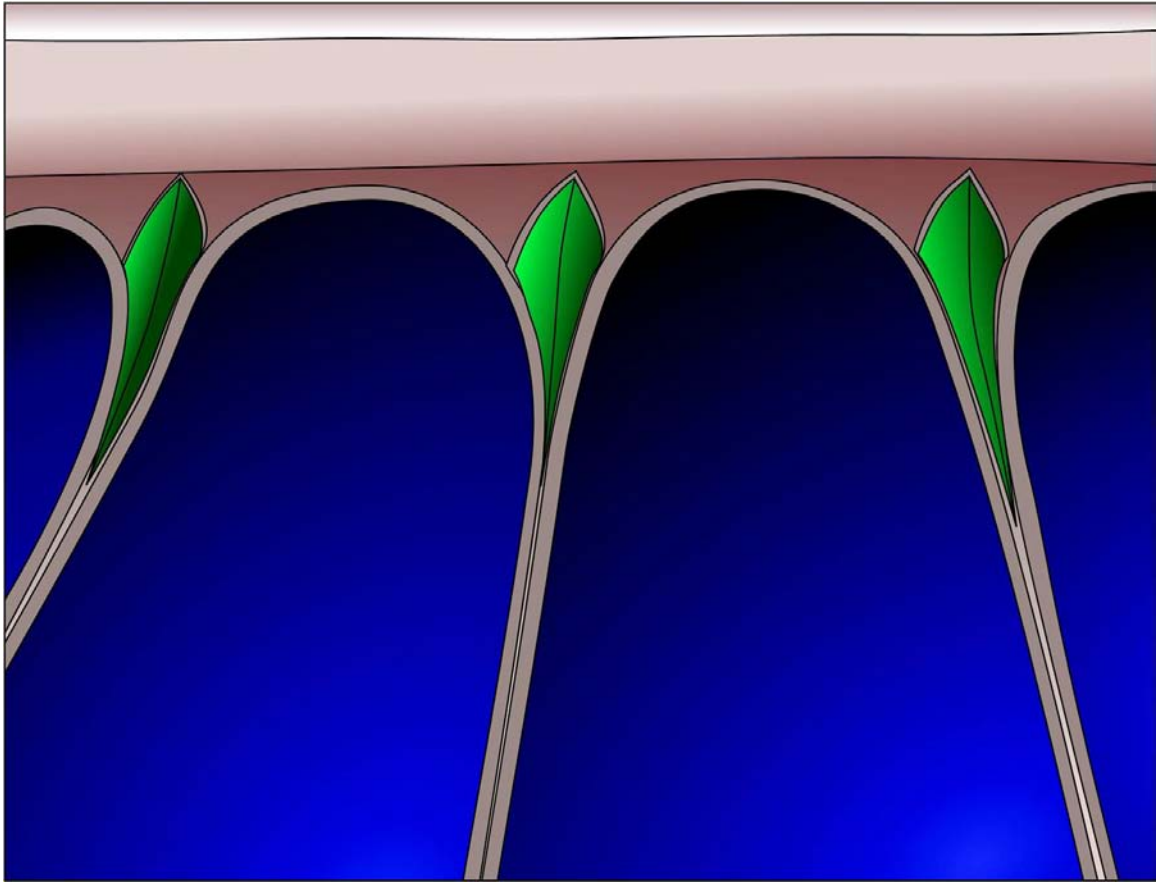
Figure 4.33 Detail of Cavetto. Façade of the Tomb of Artaxerxes II, Persepolis 2008 (Photo: A. Nagel)



Figure 4.34 Details of Cavetto. Façade of the Tomb of Artaxerxes II, Persepolis 2008 (Photo: A. Nagel)



Figure 4.35 Detail of Cavetto. Façade of the Tomb of Artaxerxes II, Persepolis, 2008 (Photo: A. Nagel)



Figures 4.36 Detail of Cavetto. Façade of the Tomb of Artaxerxes II, Persepolis, 2008
(Reconstruction of Color Scheme: A. Nagel)

Conclusions

The historiography of the rediscovery of the notion of polychromy in Achaemenid Persia teaches us several things. At first, although paintings and surface embellishments were discovered in both Persepolis, and Naqsh-e Rostam, and Susa already during the nineteenth century. Important observations were being made by Texier and Wied-Blundell at this time. These findings were not placed in conversation with each other. In the 1920s and 1930s, in his notebooks, letters, and artifact collection, Herzfeld left us

important evidence, but it was never published and the pigment remains he collected were never properly analyzed. Only Lerner and Tilia paid systematic attention to the polychromy of Persepolis after the mid-century. It is striking though, that Tilia never reports about any scientific analysis that were undertaken, nor was there any extensive photographic documentation that included standard color reference charts available at that time. Up to this point, references and commentaries on the motifs and the minerals employed as surface applications at both sites have been marginalized. The review of material evidence for polychromy from Persepolis, Naqsh-e Rostam, and Susa assembled here shows the importance of color in the built environment of the Achaemenid court and, I hope, demonstrates, that further analytical work is now imperative.

CHAPTER 5

UNCOMFORTABLE TRUTHS: CHALLENGES OF

DOCUMENTING, PRESERVING, AND ANALYZING THE PAINTS OF ACHAEMENID PERSIA

The documentation of evidence for polychromy on the monuments of Persepolis and Susa extends back over two centuries. This effort has been intensified in the last several decades, as we have seen in Chapters 3 and 4. In all that time many approaches to the recording, preserving, and analyzing of traces of paint have come and gone. Today there are advanced non-destructive techniques for discerning extremely elusive traces of pigment. The most effective of these are more viably attempted in a museum conservation laboratory on isolated monuments or fragments than they can possibly be at vast open-air sites. Thus, for instance, the use of a portable XRF-fluorescence spectrometer (XRF) was possible when I examined a number of Achaemenid Persian relief sculptures housed in the Vorderasiatisches Museum Berlin (Nagel forthcoming). XRF is currently one of the best methods for identifying traces of surface treatments on stone sculpture (e.g., Gianoncelli et al. 2007; McGlinchey and Trentelman 2007; Trentelman et al. 2010).¹²⁷ I was also able to employ a digital microscope on outdoor monuments in Persepolis and when studying the stone sculptures in museum collections in the museums of Persepolis, in Tehran, and in Washington together with stone conservation specialists.

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¹²⁷ XRF analysis allows for a semi-quantitative overview on chemical elements. In Berlin, an ArtTAX Pro (former Röntec GmbH, now Bruker), an energy dispersive micro-XRF analysis apparatus with a molybdenum tube (30W), non-nitrogen SDD-detector and polykapillarlense (80-100µm Spot), was used. I would like to thank Marisa Pampalona, Sabine Schwertfeger, Regina-Ricarda Pauswein, and Stefan Simon for conducting analyses on fragments from Persepolis with me in Berlin in 2008.

¹²⁸ The digital microscope of Keyence (VHX-500FD) allows the use of two lenses: VH-Z20 (20-200times) and VH-Z100 (100-1000 times). It is possible to use a movable tripod. With this equipment, 3D-imaging is possible.

Efforts undertaken at Persepolis itself in recent years are attempting to deploy systematic methods and up-to-date techniques for the detection of polychromy under the challenging conditions presented by a daunting array of large-scale monuments, many of which have remained exposed on site since the late sixth century BCE. Since that time they have suffered the war depredations of Alexander, the subsequently heavy-handed harvesting by collectors, and even (as we shall see below) the interventions of some destructive techniques that were innocently intended as modes of documentation.

On the site itself, beyond traces of pigment visible to the naked eye on readily accessible sections of monuments, many coatings and paints are often found hidden in rather inaccessible parts of the same monuments. Investigations with an electrical crane and ladders, supplied by the conservation team at Persepolis, enabled me to identify a selected number of paint residues and painted patterns on monuments in areas not easily reached, and therefore overlooked in the past. The scope of the site necessitated a step-by-step approach and, further, took in considerations the limitations of time, and logistical feasibility. Additionally, my preliminary studies in the storerooms of the museum at Persepolis have revealed excellent prospects for identifying more paint traces and well-preserved surfaces on fragments from the site that are stored there. These fragments have been protected from the elements and have not been subjected to cleaning and restoration procedures. In the future, however, the evidence from the façades of the tombs will play a key role.

Analytical Methods

Today, there are excellent research facilities and laboratories in the Islamic Republic of Iran. Furthermore, museum collections around the world that house fragments of Persepolis sculpture often very supportive and allow access to experts and resources for pigment analysis and identification. More museum collections worldwide house Persepolitan limestone sculptures than house all categories of artifacts from the Athenian Acropolis combined (cf. Appendix 1). This highlights the fact that the conservation of the monuments of Persepolis is a major responsibility not only of Iran but also of the entire international community.

A number of samples of pigments from Persepolis and Pasargadae removed from Iran long time ago have already been analyzed and the results published (Stodulski et al. 1985). Because of governmental restrictions, it is no longer possible to remove samples from Iran. But much remains to be accomplished in identifying and then analyzing the pigments already removed. Techniques of pigment analysis, enabling a characterization of the surface and internal structures of samples in the laboratories involve use of Scanning Electron Microscopy with Energy dispersive X-ray analysis (SEM/EDX) and FTIR.¹²⁹ Often, fairly small amounts are enough to produce reliable results. Oftentimes one can identify pigments by matching them with existing samples in scientific collections. One such reference collection is the Forbes pigment collection.¹³⁰ Today, there are also non-destructive methods to determine specific pigments such as Egyptian blue, and it is hoped that these can be applied in the future (see, e.g., Verri et al. 2009).

¹²⁹ I would like to thank Janet Douglas, Conservation Scientist at the Freer Gallery of Art, Smithsonian Institution, for examining pigments preserved in the squeezes from the inscriptions of the façade of the Tomb of Darius I at Naqsh-e Rostam with a Philips XL30-FEG ESEM. For a brief introduction into this method see Shaer 2003: 17.

¹³⁰ Carriveau and Omecinsky 1983 and <http://cameo.mfa.org/pigments/index.asp>.

By their very nature, mineral-based pigments fade over time, they change color, and they disappear completely (e.g., Green 2001). For these reasons, there are the challenges of rendering color reconstructions that satisfy the public's curiosity to see the way a monument "really looked." There are also challenges of even simply describing colors and hues verbally of what we see in the preserved record in ways that do not embed assumptions that cannot be sustained by the actual evidence. The Munsell-Chart for many years has been used as a standard of reference for describing hue in archaeological work in several media (e.g., ceramics, glass). The objectivity of this standard of reference has, however, been questioned (see, e.g., Gerharz et al. 1986). Thus, at the present time, much ambiguity exists in descriptions and discussions by various scholars of what they see on the monuments as they are now. Standardization, however, should be a goal, and efforts have been undertaken to resolve this problem by the employment of colorimeters (see, e.g., Strudwick 1991). This points also to the importance of sample studies. By tracing chemical elements in the samples that "produced" these hues, so to say, a fairly common communication problem and the complexities of an objective measuring system can be partly resolved (Braenne 2009; Bregnhøj and Christensen 2009; Vandenabeele et al. 2009).

These factors make it impossible perhaps to be definitive about the total original look of the polychrome environment of a large site such as Persepolis. Nevertheless, there is much to be gained from a documentation of the empirical evidence (with all its frailties). A push toward expansion of data under controlled and recorded conditions offers expanding possibilities of interpretation as time goes on.

Information or Preservation?

While natural weathering and damage caused by other environmental challenges are by far the most important factors determining the deterioration of architectural and sculptural remains that have been exposed to the elements (see, e.g., for Persepolis: Mohammadi and Krumbein 2008; and for ancient pigments in general, Daniels 1987; Gutscher et al. 1989; Schiegl et al. 1992; McCormack 2000). This chapter explores how certain strategies of site documentation have caused unintended damage to the evidence of polychromy at Achaemenid sites in the past. In recent years, cultural heritage experts have begun to realize that there is an uncomfortable truth in the fact that those who have in the past acted in the name of conservation have at the same time done irreversible harm to monuments (see, e.g., Richmond and Bracker 2009: xiv). I hope to contribute here, furthermore, to recent efforts to understand the complex strategies employed for the conservation of the monuments of Persepolis. Understanding the history of archaeological fieldwork *and* conservation efforts at Persepolis—for the monuments still on the site as well as for those now in museums—is essential in determining a viable plan for the future. This chapter thus reviews the challenges related to the study of polychromy (e.g., pigments and minerals in light of weathering) and the development of discourse on issues of the state of preservation of the site throughout the nineteenth and twentieth centuries. I must state from the very beginning that this is a preliminary survey of the evidence. Many archives remain unexplored regarding their information on conservation practices on the Takht's monuments. Besides a number of archives outside Iran, such as those of the non-Iranian archaeologists already mentioned in previous chapters, the

archives of Mohammad-Taqi M. Mostafavi, Ali Sami, A. S. Hapur Sahbazi, and Akbar Tadjvidi will certainly yield additional important information. Attention should also be paid to the archives of André Godard (1881-1965), since Godard played a key role in the twentieth century in his role as a advisor for the archaeological activities conducted in Iran.¹³¹

Conservators and Archaeologists

The term “conservation” needs to be clarified. Languages bring all kinds of cultural baggage with them. In the English language, the term “conservation” can be distinguished from “preservation” and “restoration” (Muñoz-Viñas 2005). Although the three terms work together on many levels and must do so for many reasons there is a clear distinction in what each means in relation to current strategic and theoretical thinking. According to Muñoz-Viñas’ recent definition (2005: 213), conservation is “a way of maintaining and reinforcing the meanings in an object; it is even a means through which the appreciation for what an object symbolizes is expressed.” The guidelines of the American Institute of Conservation prefer the term “stabilization” for this restricted area of the modern conservator’s range of expertise. I use the term conservation in opposition to that of restoration. Restoration aims to “return an object into a former state” (Muñoz-Viñas 2005: 17). By their very nature, pigments and the analysis of pigments ought to belong to the field of the conservation specialist. I do not think, however, that only a collaborative effort will bring us closer to understanding aspects of polychromy at

¹³¹ The Godard papers are presently kept in the Islamic Department of the Musée du Louvre, Paris, and in the National Archives, Paris. See, however [in addition?], Mousavi 2004: 471, n. 66.

Persepolis. The obligation to record and preserve evidence for future investigators must be inherent from the very beginning.¹³² Already in the early twentieth century, it was widely known that

... in the case of coloured objects it is of greatest importance to take in hand the treatment immediately after they have been dug up, for they rapidly lose their colour or become bleached, or the colour may even come off in the form of dust. As soon as an archaeologist discovers objects of this kind he must at once protect them from light, rubbing, etc. until they can be handed over to an expert (Rhoussopoulos 1911: 143).

Deterioration starts within hours of initial excavation.¹³³ This very moment of discovery is the time when the artifacts offer the greatest amount of information.

A key element in tracing the modern historiography of the study of polychromy in Persepolis is an investigation of conservation (i.e., stabilization) efforts that accompanied archaeological fieldwork that took place over time. A detailed documentation of conservators' efforts accompanying the various excavation campaigns would be an extraordinary benefit as we attempt to understand the current condition of individual monuments and fragments. So too, detailed records of stabilization procedures in museums would help tremendously. Unfortunately, this type of data is often obscure, if it exists at all—especially, but not exclusively for the early years.

Programs of conservation conducted by past generations prove how important collaboration is in detecting remains of polychromy and then in preserving them for

¹³² Today, much more sophisticated techniques in archaeological conservation can be employed than when modern 'scientific excavations' began (e.g., Pye 2009). Publicizing reports of conservation efforts conducted on ancient monuments leading to new revelations on polychromy is crucial. The impact of such energetic efforts to disseminate findings are startling apparent for the Parthenon on the Athenian Acropolis (e.g., Kouzeli 1989 and 1990; Mallouchou-Toufano 2006 a and b; Orlandos 1978: 645-8; Jenkins et al. 1988; Summitt 2000: 420-4; Williams et al. 2007; Vlassopoulou 2008).

¹³³ It has been noted, that pigments are certainly best preserved by earth. Reade noted that large scale figures freshly re-excavated at Nimrud in the 1960s had much more black paint preserved on their hair than those in museums usually have (Reade 2000: 618).

analysis. Conservation can not be a technical activity ancillary to archaeology. It must be a component of fieldwork, often involving critical and decisive intervention, if studies in polychromy are to proceed. The Italian conservation specialist Melucco Vaccaro (1996: 369) stated that in the past:

art historians and curators of major museums were the very ones responsible for destroying traces of ... color, patination and toning layers, ... The ravages of time and pollution have been nothing compared to the damage done by restorers: removal of the surface and violent cleaning with hot water and ashes, or washing with sponges soaked in nitric acid, have almost completely destroyed any traces of polychrome finish spared by the effects of time.¹³⁴

Only in recent decades has the stabilization of the monuments of pre-Islamic Iran become a real agenda, especially stimulated by the earthquakes that caused tragic destruction to the monuments in Bam. However, compared to an overwhelming amount of literature on the history of archaeology of Achaemenid Iran, less has been written on the conservation of the Achaemenid monuments (see, however, now Soheil 2001; Bazljou 2004a, 2004b; Ardestani 2004; Sheikoleslamy 2004; Aminzadeh 2004; Mahmoudzadeh and Oudbashi 2004).¹³⁵ Since early work on the Takht and the Naqsh-e Rostam is reflected mostly through the writings of Europeans, it is important to understand European approaches to polychromy and conservation within a historical perspective before evaluating their relevance to the polychromy of the material culture of Achaemenid Persia.¹³⁶ One has to

¹³⁴ Cp. Melucco Vaccaro 1984. In November 1970 the periodical “Studies in Conservation” published a special issue on the “Conservation, Technique and Examination of Polychromed Sculpture”: e.g. Philippot 1970.

¹³⁵ There is a significant bibliography on the history of archaeology in Iran, both on a national and site specific level. See e.g., Niknami 2000; Abdi 2001; Mousavi 2002 (Persepolis); Nasiri-Mogghadam 2004 (for the early years of Susa) On the history, politics, and efforts of conservation in Iran see esp. Jokilehto 1999: 270-4; Paone 1977; Vatandoust 1994; Soheil 2004 and 2009.

¹³⁶ While the history of architectural conservation is in itself a developing field with its own ethics, philosophy, and theories (e.g., Jokilehto 1986; 2009; Orbasli 2007; Stanley-Price et al. 1996; Richmond and Bracker 2009), lack of communication and exchange between archaeologists, conservation specialists, and other professionals has been the major obstacle to overcome (Muñoz-Viñas 2005: 117-9). One of the early milestones in theories on conservation and restoration is Brandi 1963. Institutional milestones include the establishment of the *Istituto Centrale del Restauro* (ICR) in Rome, founded in 1939; the inaugurations

stress, though, with Mousavi (2005: 445) that in many areas Iranian archaeology “two sets of literature exist, one written in Western languages, the other in Persian.”

The early eighteenth century witnessed the first modern documented removal of limestone sculptures from the Takht. The Dutchman Cornelius de Bruijn (1652-1726) took fragments from the Apadana and the Palace of Darius for transport to Europe. De Bruijn, who visited the Takht between 9 November 1704 and 27 January 1705, removed a figure from the Apadana and sent it to Holland where it arrived broken in pieces.¹³⁷ Already by 1811, almost the entire upper half of the top row of reliefs on the Northern façade of the Apadana had been removed (Porter 1821 vol. 1: 601; Cp. Barnett 1957: 57; **Figure 5.1**). The removal of elements continued well into the early decades of the twentieth century; but other practices also increasingly became important challenges to the preservation of evidence of the site as a whole and of polychromy specifically.

of the *Istituto Central International Centre for the study of the Preservation and Restoration of Cultural Property* (ICCROM), active since 1959, and of ICOMOS in 1965, originally to complement ICCROM, and the *International Council of Museums* (ICOM) in 1946.

¹³⁷ Drijvers 1991: esp. 96; de Bruijn 1720, vol. II: 9-44; Benveniste 1951; Drijvers 1993: 89, n. 14 with further references.



Figure 5.1 Apadana, North Façade, Western side, uppermost register, 2008 (Photo: A. Nagel)

Mold Making and Squeezes

At least from the eighteenth century onward, we encounter another destructive practice that had a tremendous impact on the surfaces of the monuments on the Takht: that of making squeezes and molds. Squeeze-making was a method of recording ancient monuments (especially carved inscriptions) for study off-site. Its goal was laudable; but its results were often highly problematic. Squeeze-making, by its very nature, has endangered evidence of polychromy, as we shall see below, and it has inadvertently created confusion in the record of polychromy. In the early years especially, the materials used in the process produced misleading residual “evidence” of coloration on the stone. In the eighteenth century, for example, Karsten Niebuhr (1733-1815) had, for instance,

produced hand copies of the cuneiform inscriptions on the Takht for about three weeks in the spring of 1765. He also took an early form of wet squeeze from some of the inscribed surfaces. According to the early nineteenth century traveler Claudius Rich (1787-1821), Niebuhr had brushed a dark material onto some inscriptions in order to take a form of a wet squeeze. Rich noted traces of this material on the inscriptions on one of the portals of the Palace of Darius (Rich 1839: 252). Remains of this modern substance are still visible on a fragment from the Palace of Darius (DPc), today in the British Museum (Simpson 2007a: 343= BM ANE 118852).

Niebuhr (along with many others) was not sensitive to the damage he was inflicting on the walls of Persepolis by applying this dark coating in order to make his squeezes. The notion that anyone might wish to examine the stone surfaces at some later time for other scientific purposes was completely alien to his context. He observed that de Bruijn had marked his name in red crayon on several structures on the Takht. But clearly this was not meant in a critical way. Morier (writing in 1816) commented that Niebuhr had written his own name in red chalk so that it “seems to have been done just yesterday” (Simpson 2007a: 344). Out of the 158 names of travelers and antiquarians tabulated by Simpson via graffiti on the Persepolis platform (sixty-four alone on window frames and the inner walls of Palace of Darius), many are highlighted with colored pigments. So the investigator of polychromy today must be mindful of the possibilities of intrusive elements of color certainly from the eighteenth century onward.

The nineteenth century was the age of the cast (Haskell and Penny 1981). Plaster casts were made from negative molds taken from original ancient sculptures. Almost

everywhere in Europe large collections were formed.¹³⁸ The travelers in earlier centuries had taken draughtsmen with them, who recorded antiquities in a non-invasive way. Now, paradoxically, a new method began to be employed –one, which heralded an age of “scientific” documentation. Often, these plaster casts were expensive to make, and a high level diplomacy was involved in getting permission for taking molds. The casts were then used to teach students in fine art and art history and became important display items (e.g., Berchtold 1987; Donati 1999; Bauer and Geominy 2000). Simultaneously, cast-making ushered in an era of practice that proved devastating to evidence of polychromy.

The practice of taking wet squeezes and making molds from casting off details and entire reliefs of the monuments on the Persepolis Takht continued well into the twentieth century. Countless negative impressions in the form of squeezes and molds were taken from inscriptions and monuments all over the platform. The details of the procedures used were seldom documented, and most of the squeezes and molds are lost. But one report of mold-making in Persepolis gives a vivid idea of one method used early on. A report by J. Alexander written in 1826, attests that in this year the Irishman, Ephraim Gerrish Sannus (1784-1850) “made several long shallow boxes of wood, in which he put quick lime, applied them to the sculptures, and allowed them to remain until thoroughly dry” (Alexander 1827: 97-8). Alexander continues with his story: “... The case was then taken off and sent to Bushir, containing the impression, from which the casts were again taken in lime” (ibid.).¹³⁹

¹³⁸ In fact, many European antiquarians went to Athens and Egypt to take casts from the monuments, long before they collected original objects. Already in 1783 the French had obtained permission to take casts of the Parthenon sculptures, and Lord Elgin’s original intention was to take casts of the monuments as well. His *formatori*, the actual makers of the molds and the casts, were known by name: Connor 1989: 187-8.

¹³⁹ Cp. Simpson 2007: 159.

The earliest series of casts made from the molds by Stannus were displayed in the British Museum in London along with ten original sculptures from the Takht in 1825. When they were re-arranged in 1865, since the British Museum had in the meantime acquired another large number of original sculptures from Persepolis (Mitchell 2000: 52), the casts were deliberately painted brown by Brucciani, owner of a cast gallery nearby. The reason behind such coloring of the casts needs to be investigated further. In 1937 the casts were relocated to the new Iranian gallery of the museum. Most of these early casts are today in the British Museum's *Enlightment Gallery* (Simpson 2007a).

On his visit to Persepolis on 29 June 1826, Alexander not only made observations on the techniques employed by Stannus, but also found excavations by John MacDonald Kinneir in progress. He noted, for instance, that Kinneir was “employing people in clearing away the earth from a staircase” (Simpson 2007b: 159). Little is known about Kinneir's investigations on the site, but he is known to have been a regular visitor, judging from his graffiti dated 1808, 1810, 1820, and 1826 (Simpson 2004; 2007b: 159). In the early decades of the nineteenth century a large group of sculptures and architectural fragments were removed from the site (e.g., Mitchell 2000). By the 1830s, both the casts and originals from Persepolis found their new home, along with Roman and Egyptian sculptures in the recesses of the British Museum's Grand Central Saloon, where they remained at least until 1851 (Jenkins 1992: 114, 121).

Grateful as we are for Alexander's descriptions of Stannus' mold-making process it would be helpful to know exactly what type of quick lime Stannus applied. Calcium oxide (CaO), for instance, turns into calcium carbonate over time. This affects the surface of the limestone reliefs considerably. An investigation of (or reconstruction of) the

practices of mold-making at the time would help us today to understand how much these episodes are likely to have caused changes to the surface of the reliefs—changes that now affect our ability to retrieve ephemeral evidence of polychromy.

In 1844, the Frenchman Lottin de Laval came to the Takht to make molds for the productions of casts destined for France (Fontan 1994; Fontan 1998). He treated the reliefs with water and a sponge before applying thin papers onto the stone to make the negative impressions. The technique used by de Laval is described in detail by Zapata-Aubé (1997: 35-36). The casts from these squeezes are today in the Musée de Bernay and in the Louvre.¹⁴⁰ From the preserved documents we learn that most molds of relief sculptures and inscriptions made by de Laval were taken from several places: the then-visible reliefs of the north stairway (eastern wing) of the Apadana, the reliefs on the stairways of the Palace of Darius, details of figures depicted in the standing doorjambs of the Hall of 100 Columns, and several inscriptions from the site.

Only a few decades later, the Englishman Cecil Harcourt Smith (1859-1944) recommended that a more complete set of casts be commissioned for the British Museum “since so much of the monuments in Persepolis faced destruction due to the subsequent looting” (*The London Times* September 9, 1892).¹⁴¹ This new episode of mold-making took place in early 1892 and produced the largest set of replicas ever made at Persepolis and other sites in Fars. The results are still to be seen in the British Museum. This time, paper maché molds were made by the Italian Lorenzo Giumini (1844-1920) on relief

¹⁴⁰ For a de Laval cast of an inscription, see, e.g., Chevalier 1997: 33 Fig.18 (H. 58.5 cm; W: 97.5 cm). See also Simpson 2007: 352 with further bibliography. According to Perrot and Chipiez 1890 (826 n. 1) the casts in the Louvre must have gone on display in the 1890s. The history of the display of these casts remains to be written. I hope to explore this topic in the future.

¹⁴¹ Harcourt-Smith would later become Keeper of Ancient Greek and Roman Antiquities at the British Museum.

facades from the Apadana (north), the Hall of 100 Columns, the Palace of Darius, and from monuments in Pasargadae (Weld-Blundell 1892; Smith 1893; Smith 1932a, Smith 1932b; Simpson 2007b: 160-1). After their return to England, the molds were used to make multiple casts which were then sold to institutions including the Nottingham Museum and Art Gallery, the Louvre, the Kaiser Friedrich Museum in Berlin, and the Smithsonian Institution in Washington DC.¹⁴² The molds themselves were deliberately destroyed soon afterward to ensure that the casts derived from them would remain a limited edition (Simpson 2007a: 353 and 2007b: 161).

The London Times for September 9, 1892 notes, regarding one of the reliefs in Pasargadae, that:

The Cyrus monument is in itself a striking proof that Mr. Cecil Smith's expedition has not come before it was needed; already, since this mold was taken, the monument has been thrown down and broken; in a few years probably no trace of it will remain. It is, therefore, to be hoped that, while there is yet time, the *work will be continued until every fragment of Persepolitan sculpture within reach has been molded, and so placed, in a measure, beyond the reach of absolute destruction.* The first set of casts from the new molds will be presented to the British Museum, the second will go to the great museum of casts now being formed in New York, to the committee of which Mr. Cecil Smith is indebted for financial co-operation [emphasis mine].¹⁴³

Assembled piecemeal during many decades the various casts of reliefs and inscriptions that remained on the Takht became highly valued.

Mold-making of Persepolis sculptures was not limited to monuments still on the site. Throughout the nineteenth century, European museums holding examples of Persepolis reliefs took molds from these as well in order to produce cast series for display

¹⁴² During Weld-Blundell's stay, another set of molds for casts of both inscriptions and relief sculpture were made for the American diplomat Truxton Beale (1856-1936) on the site. These casts remain as of today in the storerooms of the National Museum of Natural History, Smithsonian Institution, in Washington D.C. (Adler 1895). Cp. also Simpson 2007: 161-2.

¹⁴³ I thank Betsy McCormick, University of York, for sharing this information with me.

and sale.¹⁴⁴ Since the first half of the nineteenth century, the British Museum had sold numerous museum plaster casts from those relief sculptures from Persepolis. In 1872, nine casts of reliefs from Persepolis, then in the British Museum, were exhibited in Berlin (Bötticher 1872; Crüsemann 2001: 39 Nos. 34-43, and plate 54; e.g., 118843, 118845). The South Kensington Museum in London (later to become the Victoria and Albert Museum) acquired British Museum casts of Persepolis stone reliefs in 1872 (Anon. 1874: 10). Two casts of the set made by Giuntini in 1892 were sold to the Metropolitan Museum.¹⁴⁵

In Mediterranean countries, throughout the later decades of the nineteenth century, it became increasingly difficult for museums to obtain casts made from new molds taken from monuments. There was ever more sensitivity to the damage the process could cause to the surfaces of the art—and particularly to vestiges of polychromy. In the case of the polychrome Archaic maiden, excavated between 1886 and 1891 on the Athenian Acropolis, for instance, official measures were taken to avoid repeated molding in order to safeguard the abundant evidence of original color. The practices deployed in Persepolis and other Achaemenid Persian sites, however, did not reflect this growing awareness—even well into the twentieth century. This was true even though the method of taking wet squeezes was already being criticized. In 1924, A. Lucas, for instance, wrote: “Stone objects, which bear inscriptions, must on no account be wetted until the painted surface has been protected from the action of water, or the paint will probably be

¹⁴⁴ The Phigaleia and the Parthenon sculptures in the British Museum also became attractive mold-making targets for several series in the nineteenth century, as documented in 1817 and 1836-7. In some cases the stone was washed with “soap lyes or some other strong acid” (Jenkins 1990: 101-5; Oddy 2002: 146; Jenkins 2001: 16-17). In 1852, Charles Newton was sent to Greece to complete the series of Parthenon casts for the British Museum: Connor 1989: 189.

¹⁴⁵ One cast is now in the George Mason University. I thank Carol Mattusch, GMU for this information. (http://chnm.gmu.edu/courses/mattusch/plaster/raw_images/Flandin%20et%20coste.jpg), the other is still in the Metropolitan Museum of Art.

destroyed. The necessary protection may be given by spraying or otherwise treating the surface of the stone with some materials that is insoluble in, and unacted upon by, water” (Lucas 1924: 105).¹⁴⁶

A photograph from 1923 shows Herzfeld’s team making impressions of the great inscription of Darius (DPe-f-g-h) on the south wall of the Takht (**Figure 5.2**). Herzfeld’s documentation of the monuments also included squeeze-taking of a number of inscriptions on the façade of the Tomb of Darius I at Naqsh-e Rostam. Herzfeld took squeezes not only from the inscriptions but also from several details of the sculpted reliefs of the facade of the tomb at Naqsh-e Rostam, the Apadana at Persepolis, and of the figure of the winged genius from Gate R in Pasargadae. The Museum of Islamic Art in Berlin has nine casts from these Herzfeld squeezes, though the molds seem to have been destroyed.

We have two very brief notes of the actual squeeze-taking process for 1923 and 1933 (see also Herzfeld 1926: 246-247).¹⁴⁷ In November 1923 Herzfeld used wet squeezing to copy inscriptions by beating a sheet of soaked paper into every crevice and hollow of the surface, then peeling off the paper. Once it had dried the resulting

¹⁴⁶ Lucas, who worked for the Egyptian Antiquities Service between 1923 and 1932, was instrumental in the consolidation and preservation of the finds from Tutankhamun collection, and wrote later the *Ancient Egyptian materials and industries*, introduced above in chapter 2.

¹⁴⁷ Ernst Herzfeld Papers, Freer Gallery of Art and Arthur M. Sackler Gallery Archives, Smithsonian Institution, Washington, DC, N-84 (1923-24), November 22, 1923, p. 18: “I did them all with cigarette paper, folded three times. The result is good.” Busse, assisting Herzfeld in 1933 in a letter to his father (September 23, 1933, p. 4): “... We had made casts, ..., one takes enough large sheets of extremely thin cigarette paper, that is carefully hammered on with a hard brush, while damp. When it is well molded to the form, new layers are progressively overlaid ... Once it is dry one can lift off the paper layer, which are now firmly stuck together, and one has an exact reproduction of the original.” See also another letter to his father from August 15, 1934 referring to the squeezes made at Naqsh-e Rostam. Fifty-seven of these squeezes including parts of the Old Persian, Elamite, and Babylonian version, are today among the Ernst Herzfeld Papers, Freer Gallery of Art and Arthur M. Sackler Gallery Archives, Smithsonian Institution, Washington, DC: Herzfeld Archives Subseries 6.3 (Cuneiform scripts). Blueprints of squeezes of further inscriptions from Naqsh-e Rostam are kept in the Freer Gallery of Art and Arthur M. Sackler Gallery Archives. Herzfeld Archives Subseries 6.4 Nos. 114-125. It may well be that these were the photographs taken by Busse in August 1934 (see below).

impression was, however, not only a negative mirror-image record preserving the inscription at actual size, but it was also (unintentionally) the receptacle for pigments that must have been embedded in the carved cuneiform characters and stripped off in the squeeze-making process. We have no indication in the archival materials that Herzfeld ever commented on this, but the squeezes from Herzfeld's work at Naqsh-e Rostam, that partly preserve pigments of the inscriptions, are today in the Herzfeld Archive in the Freer Gallery of Art and Arthur M. Sackler Gallery of Art, Smithsonian Institution, in Washington DC (Hennessey 1992: 134).¹⁴⁸

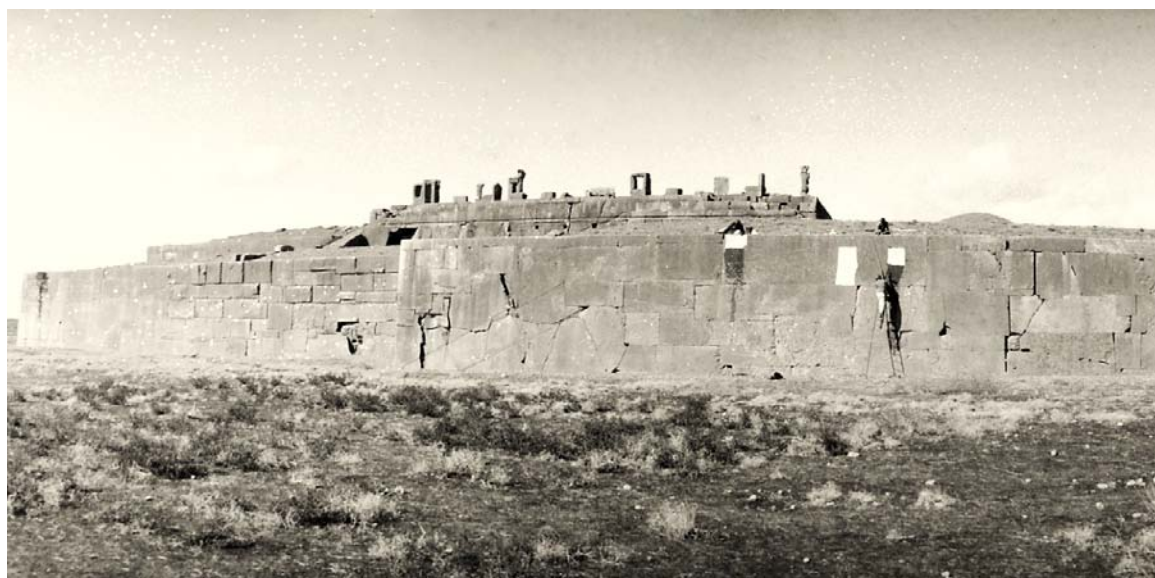


Figure 5.2 Process of squeeze making of inscriptions on the southern façade of the Takht, November 1923, Herzfeld Archives, Freer Gallery of Art, Washington, Photo Files Subseries 4.5.2 Neg. 4072.

It is indeed surprising that the pigments survived the paper-mâché squeezing. As already mentioned, Herzfeld did not comment on the pigments that came off in the squeeze

¹⁴⁸ Since as of this writing, not the entire group of squeezes in the Herzfeld Archive in the Freer Gallery of Art and Arthur M. Sackler Gallery of Art have been registered, further squeezes from Achaemenid inscriptions from Persepolis might soon be recovered. In July 2010, squeezes containing inscriptions from the southern façade of the Takht were rediscovered in the Herzfeld Archive.

process, yet they are visible on many squeezes, and ironically they provide additional proof for us today that these inscriptions were indeed colored in blue (see Chapter 4). Moreover, the pigments captured on Herzfeld's squeezes offer further proof that pigments can be lost during the process of mold-making and squeezing, an issue of some debate in the past. Although it has been repeatedly stressed that casting does not remove traces of paint (e.g., for Greek Art: Jenkins 1990: 194-7; Jenkins 2001: 17), the doubts of many conservation experts have been repeatedly substantiated by traces of paint adhering to squeezes and molds.

Squeezes continued to be taken from the inscribed monuments on the Takht. In August 1934 Hans von Busse mentions some fifty sheets of squeezes measuring 60x80 cm each, which he photographed.¹⁴⁹ In retrospect, it is striking and almost paradoxical to read the words of Herzfeld from a lecture held in Tehran on August 13, 1925:

To prevent the vandalizing of historical remains, the government should establish appropriate regulations, and forbid the destruction of historical monuments. ... One should get the people interested in their national heritage and its *preservation*.¹⁵⁰ (emphasis mine).

Although Herzfeld professed keen interest in the preservation and documentation of the ruins of Iranian sites and was the architect of legislation to protect Iranian antiquities, he remained apparently oblivious to issues of conservation that had already become well-appreciated for classical antiquities in the Western Hemisphere.

¹⁴⁹ The present location of these squeezes is unclear. Blueprints of squeezes of inscriptions from the Great Old Persian inscription on the Takht's south façade as well as from inscriptions on the Apadana, Palace of Darius and Palace of Artaxerxes are kept in the Herzfeld Archives in the Freer and Sackler Gallery, Washington DC. Nos. 60-113. It may well be that these were the photographs taken by Busse in August 1934.

¹⁵⁰ Trans. Mousavi 2005: 450-51.

In a lecture on May 18 1927, Mohammad Ali Foroughi (1877-1942), minister at the Persian court, lamented after he had seen Pasargadae and Persepolis that

all the calamities that could have happened to it have already happened. *Both the inscriptions and the decorations are gone.* Only the wonders of the time remain, and they must be preserved (emphasis mine).¹⁵¹

Some six years earlier, the future Shah Reza Khan had organized a “Society for National Heritage.”¹⁵² After he had visited Persepolis in the fall of 1922, he had complained about the poor condition of the ruins (Mousavi 2004: 458). Herzfeld’s original plan for the monuments on the Takht was, therefore, strongly focused on “conservation” (Herzfeld 1926).¹⁵³ He explicitly named two sets of reasons for the lamentable state of the site: the fire caused in the sacking by Alexander of Macedon (the main reason), and damage from earthquakes, water, plants, and human impact (the secondary reasons).¹⁵⁴ He suggested various measures that ought to be employed on the site, including that:

... Large stones still standing must be protected on their upper surface by a thin layer of cement, or if we cannot get real cement, any material which may replace it. The cracks within the large blocks must be treated in the same way.¹⁵⁵

¹⁵¹ Trans. Grigor 2004: 35; further parts of his lecture in Mousavi 2004: 457-8. The first Royal Museum in Tehran was constructed in 1876. Already in 1910 and then in 1914, the first Iranian Antiquities Service was created and, in March 1917, a new Museum of Antiquities in Tehran was opened in the basement of the Ministry of Public Works. It was open to the public three days in the week (Hodjat 1995; Nasiri-Moghaddam 2002: 290-309; Mousavi 2005: 448-9).

¹⁵² The various names of this institution such as “Society for the Protection of National Monuments” or “Committee for the Preservation of National Heritage” bear interesting insights into the semantics of wording: Grigor 2004: 17 n. 1; Grigor 2005b; Mousavi 2005: 449-50.

¹⁵³ At the same time, it shows how little interest there was in conserving traces of the surface. In retrospect, it can only be lamented that the interest in the ‘protection’ of the stone monuments did not play any role, although various publications and institutions were in place: e.g. Rathgen 1898 (Engl. 1905); Rhoussopoulos 1911; Lucas 1924. This should be a lesson that interdisciplinary research is not only appropriate but obliged by all means.

¹⁵⁴ Herzfeld 1926: 20: “... Enfin, récemment, les voyageurs soi-disant scientifiques, enlevaient des pièces de sculptures avec leurs mains sacrilèges, pour les ensevelir dans les musées d’Europe.” (“Finally, in more recent times, self-declared scientist travelers, who removed pieces of sculpture with their sacrilegious hands, to bury them in the museums of Europe.”)

¹⁵⁵ “Les grandes pierres en core debout doivent être protégées sur leur surface supérieure par une mince couche de ciment, ou, si l’on ne peut se procurer de vrai ciment, par quelque matériel qui peut le remplacer.

Conservation of the monuments on the Takht was repeatedly emphasized and advertised. Even in 1933, Herzfeld stated that one of the main aims was the preservation of the architectural sculpture and “protection against damage by rain, frost and man” (Herzfeld 1933: 407).¹⁵⁶

It is not clear whether Herzfeld or Schmidt after him made certain, that there was a conservator present during the excavations conducted from 1931 to 1939. The preserved records do not indicate the presence of any such staff member, though pottery mending was one of the main on-site activities. As we read in the preface to Schmidt’s final excavation publication, “damaged columns and other stone parts of the structures were expertly repaired and partly restored in reinforced cement” by Signor Dante (Schmidt 1953: x). The omission of any discussion of the earlier pillaging, and the lack of commentary on conservation efforts was addressed in a review by Barnett of the first excavation volume on Persepolis (Barnett 1957: 57), who also commented that it “is strange that the excavators have not attempted this relatively simple task [to identify the dispersed sculptures from Persepolis in Western museums] (ibid. 60).”

It is also interesting that, although Herzfeld enthusiastically wrote to Breasted about his discoveries of the paint on several facades (see above), he (as well as Schmidt) obviously did not even try to initiate any investigation, however preliminary, of the pigments preserved on these surfaces.

Les fissures des grandes blocs aussi doivent être traitées analogiquement. Il semble être à propos de donner un petit profil saillant à cette couche supérieure pour empêcher les eaux de couler en bas et de toucher la surface des bas-reliefs” (trans. mine) (Herzfeld 1926: 21).

¹⁵⁶ As Mousavi has already stated, however, “It is not clear how the initial work of preservation and restoration was subsequently transformed into a real archaeological excavation” (Mousavi 2002: 225).

Cleaning, Restoration, Consolidation

Some cleaning efforts on the site must have begun, however, with the fieldwork by the Oriental Institute. While not explicitly stated in the preserved records, a documentary movie filmed in 1933 shows workmen involved in cleaning the reliefs with brushes and sponges.¹⁵⁷

As stated above, it was the sculpted reliefs on the north facade of the Apadana that suffered most. As the entire north façade was the most exposed to weather conditions, and repeated mold-making was also done on this facade, traces of paint are, understandably, hardest to find there now. To protect the site from repeated pilfering, in November 1930, Iran implemented a law regarding the preservation of national antiquities. It became strictly forbidden to export any objects out of the country without governmental permission. The practice had been common in the previous decades, and is the reason for the presence of many reliefs in collections outside Iran.¹⁵⁸

Following the era of Herzfeld and Schmidt, Iranians were actively beginning to supervise fieldwork at the site. H. Ravanband, director of the excavations in 1939 was followed by Ali Sami, who not only established the “Scientific Institute of Takht-e Jamshid” in 1941, but worked on the site until 1961 and became a professor at the Pahlavi University in Shiraz in 1962 (Mousavi 1990). Under Sami, work took place in front and in the Hall of 100 Columns and between 1955 and 1957 in front of the tomb of Artaxerxes II with the help of archaeological inspectors like Ali Hakemi.¹⁵⁹ Once the

¹⁵⁷ <http://persepolistablets.blogspot.com/2010/06/persepolis-sequence-from-human.html#> at 9:30.

¹⁵⁸ Mallampati 2005: 113-5; Wawrzyniak 2007: 48. Since 2003, antiquities from Persepolis have become embroiled in a bizarre legal claim that has reached the US District Court (Fincham 2007).

¹⁵⁹ From 1949 to 1951 Sami also conducted excavations in Pasargadae.

Iranian team had complete responsibility for the protection of the monuments, in 1952 a roof was constructed to protect the eastern facade of the Apadana from the repeated impact of weathering like sun, rain, or snow (Khiabani 2004; Mousavi 2002: 245; **Figure 5.3**).

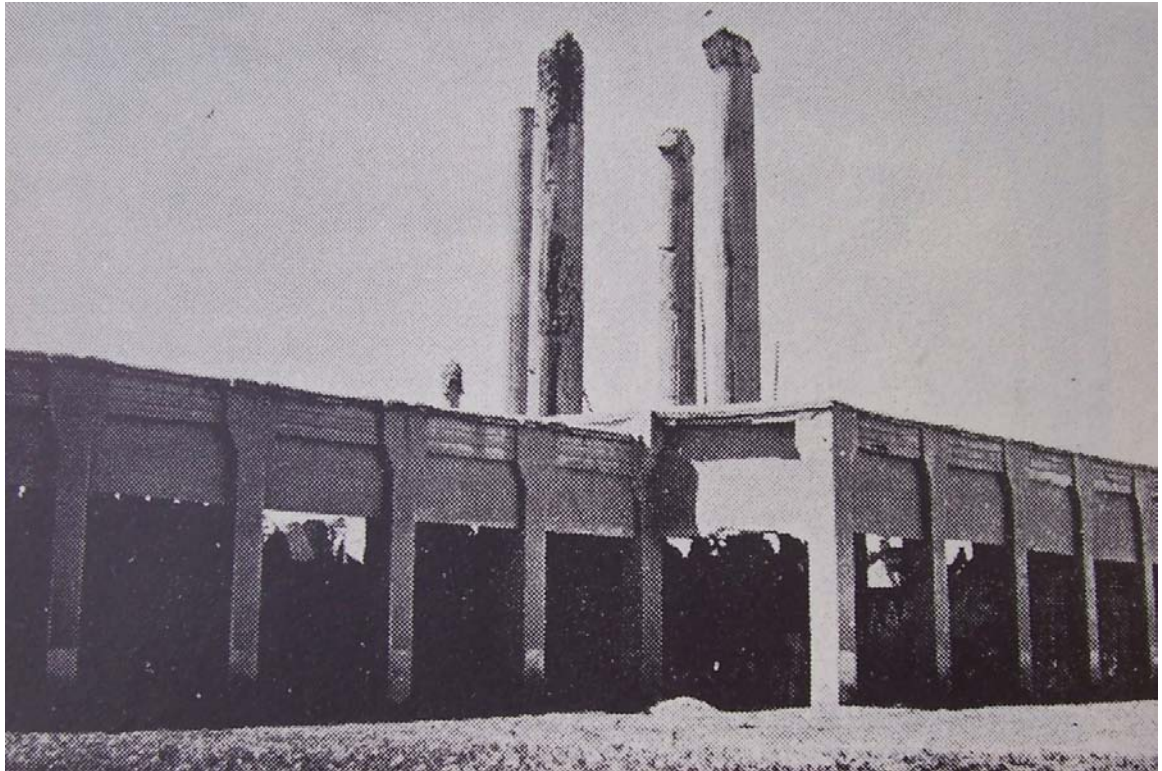


Figure 5.3 Roof above Eastern Facade, Apadana, constructed in 1952 (Mostafavi 1978: 120 Fig. 52)

The years between 1965 and 1979 produced a remarkable body of work and documentation in the fields of conservation and technical studies on the site. Over the long history of Italian work in Persepolis, various methods were tested on how to strengthen and to stabilize the relief surfaces. A 1965 photograph shows a series of tests

of a special wax extract on the eastern Apadana reliefs.¹⁶⁰ The Italian restoration program included the training of Iranian conservation specialists on the site. Once the Italian methods for conservation and documentation were established, they continued by Hassan Rahsaz, who became the director of the conservation programs carried out on the site following the 1979 Iranian Revolution.

It is not clear how much restoration work was done with the inauguration of the Institute of Achaemenid Research, founded at Persepolis in 1974 by Alireza Shapur Shahbazi (1942-2006). We do know, however, that in 1998, the UNESCO World Heritage Foundation (WHF) co-sponsored the training of stone conservators on site.¹⁶¹ Documentation, combining sophisticated conservation methods and research into the composition and technology of materials, however, is fairly recent. It was made possible only through the efforts of the Parsa-Pasargadae Research Foundation (e.g., Talebian 2007), which has its own Architectural Conservation and Restoration Group. Today, the tradition of training students in archaeological conservation at Persepolis continues.

Between 2001 and 2005, a conservation and restoration project at the Tomb of Darius I was conducted under the auspices of H. Rahsaz, primary consultant of the Architectural Conservation and Restoration Group.¹⁶² The first phase of the operation comprised a six-month survey period aimed at taking careful rescue measurements of the façade and documenting damage to all parts of the surfaces severely compromised by natural erosion and humidity. A thorough examination, followed by a complete inventory

¹⁶⁰ ISiAO Archive, Rome, Neg. R. 3379/5 (-C.C. 65/11). Often, materials used in previous conservation treatments will have left some traces. This is attested for other ancient materials treated in the last two centuries (e.g., Parker 2008).

¹⁶¹ <http://whc.unesco.org/archive/periodicreporting/apa/cycle01/section1/ir-summary.pdf>

¹⁶² In order to give access to the façade, a 50-meter steel-tube-coupling scaffolding was constructed. According to Schmidt, the original height from the bottom to the top of the cliff was about 64 m (Schmidt 1970: 80). The distance of a visitor at the foot of the façade, is today about 6 m, would have been approximately 15 m in Achaemenid times.

and reassessment of the causes of decay and damage identification, was the primary goal of the preparatory period. A basic preservation concept for the tomb façade was worked out, with guidelines and procedures for restoration and documentation. Natural erosion, pollution, and humidity caused by nearby agricultural activities, along with changing weather conditions, have resulted in heavy incrustations on the surfaces of the façade.¹⁶³

During the surface cleaning of the sculpted façade not only were rich traces of polychromy revealed (see Chapter 4), but also important insights into the history of the monument itself were gained. Directly above the tomb's façade, for instance, a previously undocumented area of drainage channels was found. These channels were probably cut into the rock sometime during the preparations for the carving of the façade relief, probably in the early phases. The architects working under the Achaemenid rulers were thus aware of the cracks in the natural rock and built channels to divert the rainwater, preventing it from flowing into the cracks. Such preventive measures demonstrate the high technical standards and knowledge of the Achaemenid craftsmen.¹⁶⁴

Closer inspection of the façade uncovered surprising information about the Achaemenid process of carving the sculptures. In addition to tools such as a flat chisel, toothed chisel, and claw chisel, a pointed hammer was also used. Close examination also

¹⁶³ The greatest cause of concern was erosion that had formed its way through the entire part directly to the right of the central figure of Darius I in the top register. Water, which originally would have dropped off the edges of the top register of the façade, eventually caused washouts in the elaborately carved surface. Plant growth covered some parts of the façade. Humidity retained in the plants and vegetation caused damage to the surface of the rock, while their roots caused the stone to split in some parts. Finally, rainwater damage has resulted in an almost amorphous appearance of the sculpted forms on some parts of the façade, especially on the left of the top register, where fissures have penetrated the surface of the rock itself.

¹⁶⁴ A drainage system of channels was also found inside the tomb chamber. Over time, however, these channels clogged and allowed water to attack the tomb's carved façade and the interior. As a result of the new conservation work, these channels were cleaned. The channels above the tomb's façade were directed towards the channels running parallel to the tomb façade, already existing in the early Achaemenid period. The cracks and splits of these channels were filled with a mixture of lime extract, sand, and appropriate materials, which are reversible and allow for stabilization. All conservation work was documented and photographed.

revealed that some parts of the tomb underwent restoration in antiquity. At some unknown point, parts of the head, including the face, of the winged figure in the top register were stabilized with a clamp. A hole to the left of this figure was refilled in antiquity. Also, the face of Darius I himself underwent restoration in antiquity. Overall, ancient restoration work seems limited to the top register of the tomb façade (see below, Chapter 6).

The monuments on the Takht continue to be exposed to the environmental elements causing threats to their survival. A recent study has documented the present state of biodeterioration on the Apadana's northern facade reliefs (Mohammadi and Krumbein 2008). As the site is on the itinerary of almost every visitor to Iran it faces serious challenges. As of summer 2009 glass facades were placed in front of fragile components. A new diagnostic survey was carried out in September and October 2008 in order to determine the influences caused by atmospheric pollution and will eventually lead to new ways of integrating modern conservation techniques (Guidi et al. 2008), as the main goal will be preventive conservation, not restoration (e.g. Leatherbarrow and Mostafavi 1993 and 2002; Petzet 2003; Fort 2006; Domaslowski 2008; Sneath 2008). With sophisticated methods and advanced modern analysis the caretaking of the monuments on the site has become a truly international collaboration.



Figure 5.4 Roof above Eastern Facade of Apadana, 2009 (Photo: A. Nagel).

The Two Stone Bulls in the Portico of the Hall of 100 Columns

Although we should not judge early efforts and treatments of these sculptures of Persepolitan monuments by today's standards of conservation and its modes of documentation, the modern history of two colossal bulls from the Hall of 100 Columns presents an interesting but as yet unrecorded lesson in the history of the treatment of archaeological materials in museums. In the debris in front of the northern portico of the

Hall, two colossal stone bull heads were excavated by Herzfeld in 1932, the bodies of which had been in situ for centuries before (**Figures 5.5-6**).¹⁶⁵

The heads of the stone bulls were excavated in front of their original positions on the *anta*, the angles leading to the portico, where they had fallen off at an unknown time. Standing originally some 63m apart, each bull - some 6m in height - had flanked one side of the portico, mirroring each other in guarding the entrance to the hall's portico. In their original position, each was elevated on a separate stone socle. The stone surface of the western bull's head, which is in situ, appears today remarkably different from the heavily restored and polished head, brought to the Oriental Institute in Chicago after negotiations with the Iranian government in 1936 (Kantor 1985).¹⁶⁶ A series of photographs preserved in the University of Chicago Library, Special Collections Research Center shows how the Eastern bull's head fragments, once they arrived in Chicago, were "restored" by the Italian sculptor-restorer Donato Bastiani (1869-1953), presumably to resemble their original appearance.¹⁶⁷

Photographs showing the Eastern head at the time of excavation and then at the time it was first installed in Chicago show the heavy restoration; but, it is, at present unclear which methods Bastiani employed. Future research in the archives of the department of conservation of the Oriental Institute may possibly yield further information about the specific techniques used. It is clear though, that no remains of pigments whatsoever are preserved. While the Chicago head appears almost black due to its modern treatment, the one still in Persepolis, as restored to its original position by G.

¹⁶⁵ Chicago, OIM photograph records P 12870 and 12872 (33.483 and 486); Archival Photographic Files [apf301707-8], Special Collections Research Center, University of Chicago Library.

¹⁶⁶ University of Chicago, OIM Inv. A 24065.

¹⁶⁷ University of Chicago, Library: Archival Photographic Files [apf301714-24].

Tilia in May 1967 (Zander 1968: 41, figs. 97, 99; Tilia 1972: 49-50, figs. 99-103, pls. XLIV-XLVI), is of a bright gray appearance. Furthermore, the head in Persepolis preserves a bundant traces of polychromy. For unknown reasons, however, Tilia did neither record or comment on any traces of paint visible on the head.

My own close inspection of the head of the western bull in Persepolis in 2007 and 2009 revealed that the skin preserves a layer of blue paint. In some areas, this layer is up to 1 mm thick, while in others only faint traces can be observed (**Figures 5.8-10**). The pigment is very shiny, almost glassy in appearance, and appears of a crystalline structure. Macrophotography reveals that the pigments appear flaky.¹⁶⁸ It is likely, therefore, that a semi-vitreous substance like Egyptian blue was employed (see below). The good state of preservation permits the reconstruction of parts of the surface of the bull's head as blue.

Pigments are also to be found in the nostrils of the western bull. The left eyeball preserves abundant traces of a red pigment (ochre) (**Figures 5.7, 5.10**). The same red pigment can be found in the tear duct (**Figure 5.6**) and on the eyelids of other bulls at Persepolis (Tilia 1978). Other than that, traces of paint have yet to be documented in more detail on the western bull.

Further finds from the portico attest to the abundance of polychromy in this part of the terrace. Among the notable finds in the portico, excavated by Schmidt in 1936 near the colossal western bull was a fragment of small limestone teeth with traces of a reddish pigment, which must have originally belonged to another zoomorphic sculpture.¹⁶⁹

It must be noted therefore, that conservation studies should not be restricted to the monuments on the site. During my research it became very clear, that even in the

¹⁶⁸ No sample could be taken for analysis at the time.

¹⁶⁹ OIM A 23408 = PT 4 1105; Schmidt 1957 pl. 41: 18.

museums little documentation about earlier treatments of Persepolitan reliefs have been kept. In some museums, the tradition of mold-making continued (Berlin, Kaiser Friedrich Museum), reliefs were cleaned and often so heavily restored and treated that any search for remaining paint traces will be hampered. The colossal Persepolitan artifacts today housed in the Oriental Institute at Chicago, were heavily treated by the Italian restorer Donato Bastiani in the late 1930s. Furthermore, not only the treatment, but even the display methods and exposure to museum conditions present their own challenges to archaeological objects (e.g., Eibner 1911; Scott 1921-6).

Many of the most recent studies stress the impact of atmospheric pollution, salt crystallization, and biodeterioration on the surface of monuments. Under the auspices of the Parsa-Pasargadae Research Foundation, new scientific programs have targeted the preservation and conservation of the structures on the platform (e.g., Guidi et al. 2008). It is under the new conservation program initiated by the Parsa-Pasargadae Research Foundation in 2009, that some facades have been protected by glass. Despite their survival, the stone sculptures and reliefs in situ can only be considered to be moderately in a good state of preservation. Weathering and deterioration can be observed, and there is evidence of flaking along with cracks running through many of the stone reliefs. Original sculpted features are unrecognizable in many areas. As stated above, remains of paint layers are especially sensitive and react poorly when unearthed.



Figure 5.5 Head of Bull, Portico, Western Anta, Hall of 100 Columns, in situ, 2008 (Photo: A. Nagel)



Figure 5.6 Head of Bull, Portico, Western Anta, Hall of 100 Columns, in situ, Detail, 2008 (Photo: A. Nagel)



Figure 5.7 Eyeball of Head of Bull, Portico, Western Anta, Hall of 100 Columns, in situ, 2008
(Photo: A. Nagel)



Figure 5.8 Traces of blue paint on eyelid of Head of Bull, Portico, Western Anta, Hall of 100 Columns, in situ, 2008 (Photo: A. Nagel)

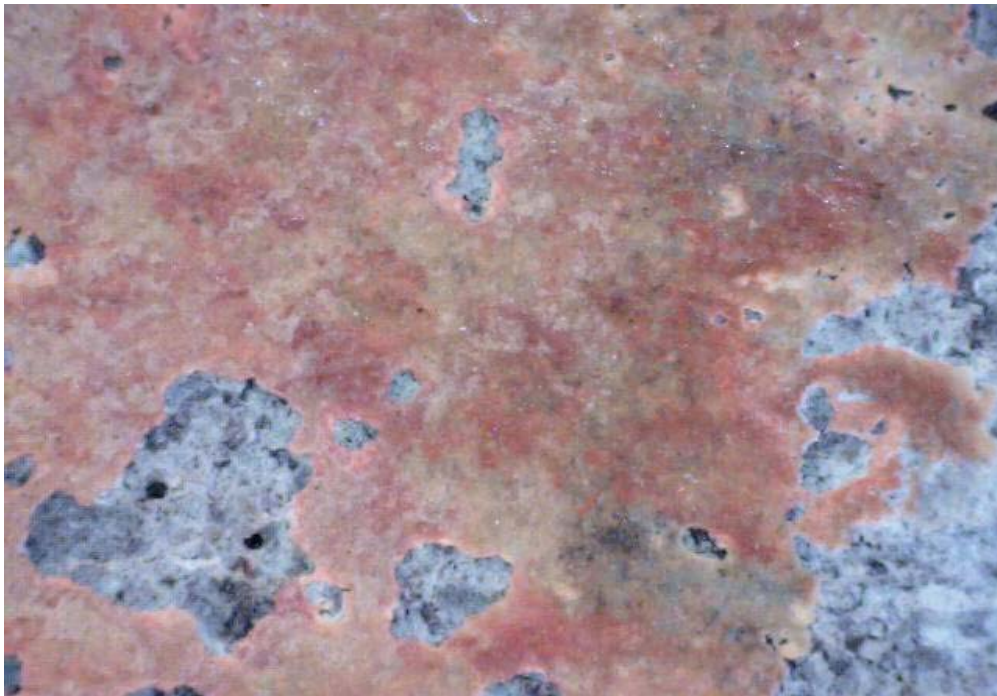


Figure 5.9 Microscopic image from the surface and blue pigment on eyelid of Head of Bull, Portico, Western Anta, Hall of 100 Columns, in situ, 40 times magnification, 2009 (Photo: A. Nagel).

Figure 5.10 Microscopic image from the surface and red pigment on eyeball of Head of Bull, Portico, Western Anta, Hall of 100 Columns, in situ, 30 times magnification, 2009 (Photo: A. Nagel).



Figure 5.11 Nostril of Head of Bull, Portico, Western Anta, Hall of 100 Columns, in situ, 2008 (Photo: A. Nagel)



Figure 5.12 Nostril of Head of Bull, Portico, Western Anta, Hall of 100 Columns, in situ, Detail, 2008 (Photo: A. Nagel)

Aspects of Conservation at Susa

The situation of conservation efforts and restoration at Persepolis is complex, but in many respects it is not as complex as it is for the other major Achaemenid site discussed in this dissertation. As Susa was almost exclusively a French project, both material and documentation is spread today between Iran and Paris (e.g., Abdi 1994; Mousavi 1996; Chevalier 1997; Nasiri-Moghaddam 2002, 2004).¹⁷⁰ While the reconstruction of the monuments of the Achaemenid period was mainly left to the French (e.g., Perrot 2010), almost nothing is known about the treatment or conservation efforts on the site.

In fact, the preservation and protection of the heritage of Susa is causing challenges not only on the site but also in museums charged with stewardship of exported materials. As the conservation report accompanying the 1992 exhibition catalogue of “The Royal City of Susa” stated, it has proven extremely difficult to find out exactly when, how, and by whom earlier restorations were undertaken in Paris on Achaemenid brick fragments (Bourgeois and de Lapérouse 1992: 281).¹⁷¹ Lamenting the insufficient documentation, Bourgeois found evidence that the bricks were treated with *spermaceti*, and that between 1920 and 1940, one G. Le Batard, a “very seriously disabled veteran” (ibid. 285) became responsible for the restoration. Le Batard seems to have worked on the excavated material brought from Susa to Paris. Furthermore, between 1950 and 1960 extensive restoration of Achaemenid panels took place in a marble-cutter’s workshop in Paris (ibid.). Approximately 950 fragments of glazed bricks were cleaned, inventoried,

¹⁷⁰ In 1895, the French obtained the exclusive right to excavate in Persia, in a treaty that was renewed in 1900 and active until 1930.

¹⁷¹ Bourgeois and de Lapérouse 1992: 284. In the author’s words: “While the discovery of glazed bricks from the Achaemenid period is a recurring motif in the writings of archaeological digging in Susa, the different stages of their successive restorations have fallen into oblivion.”

and photographed in Versailles in 1991 to 1992, and then repositioned in new displays by the restorer Michel Bourbon (Caubet 1997: 101). Parts of these went on display in 1995 (Caubet and Kaczmaryk 1998; André-Salvini and Bourbon 2000; André-Salvini 2010: 319). These recent reconstructions of conservation episodes reveal interesting results. For instance, it was determined that the surface layer of the glazed bricks with the low relief decoration was in several cases molded separately with a different clay layer which gives interesting insight into the working technique of polychromy in glazed brick (Daucé 2010: 328-30).

In a recent multi-authored paper on the state of preservation at Susa, Iranian scholars have discussed past and present efforts to save Susa from further deterioration (Abdi, Zareh, Sallehi and Baghai 2009). Zareh, stressing the importance of the site, stated that when people have no understanding or appreciation of older periods of culture, and even no knowledge of some of the more recent ones, they are in no position to protect their cultural heritage (ibid. 8-9). According to Abdi, the preservation of Susa is not only the duty of the government, but also that of every individual in Iran (ibid. 12). He admits that, given the extent of Susa, it is impossible for the Ministry of Cultural Heritage alone to protect the site, and that it is critical for every Iranian, especially those living in Susa, to participate in the protection and restoration of the site. Abdi maintains that it is critical to preserve and protect Susa and deliver it to the next generation. An anonymous author in the same article comments that the French, who left after the Islamic Revolution but have returned now for collaborative efforts, find the conditions of the site to be dire. Apparently, the Louvre is trying to assist in the refurbishment of the local museum; but despite this, the anonymous author is critical of the Louvre for not welcoming Iranian

students and archaeologists and encouraging them to study relevant works in Paris (ibid. 22). The history and historiographic burdens of archaeology continue to present challenges to the advancement of open channels of communication and to a furtherance of truly collaborative inquiry into the important project of studying the polychromy of the Achaemenid Persian Empire.

CHAPTER 6

DISCUSSION: THE 'BEAUTIFUL ILLUSION' AND OTHER ASPECTS OF NON-VERBAL COMMUNICATION IN THE ACHAEMENID PERSIAN EMPIRE

In the preceding chapters, my focus has been on documenting traces of polychromy and on related matters of historiography, archaeology, and conservation. In this chapter I attempt to clarify why knowledge of polychromy in the Achaemenid Persian Empire matters. I intend to show that systematic strategies for studying and analyzing pigments and polychromy in Persepolis and other heartland Achaemenid sites are not merely ends in themselves. They are not merely (however importantly) strategies of data development relevant to documentation in the practice of field archaeology and site conservation. The study of polychromy has the potential to greatly enhance our appreciation of the meanings of the Achaemenid visual vocabulary. And because the Achaemenid Persian Empire was so vast and so interconnected with the cultures within and contiguous to it, analyses of Achaemenid polychromy are critical ultimately to our growing understanding of polychromy throughout the entire greater Mediterranean region. This agenda draws my project into ongoing discourse in material culture studies. According to D. Young (2006: 173), colors “animate things in a variety of ways, evoking space, emitting brilliance, endow[ing] things with an aura of energy and light.” Polychromy is therefore a key feature in concepts supporting an *anthropology of luminosity* (Bille and Sørensen 2007), since the very material components of color are elements of the light source itself.

In addition, this chapter extends a discussion that has received much attention, following Root's groundbreaking monograph on the importance of understanding the

official art of the Achaemenid Empire (“Achaemenid art” in her definition) as a program carefully and knowledgably created to project an ideology of kingship (Root 1979: esp. 1-45). If it is true that Achaemenid rulers sought to legitimize their power by various means, including art and its iconography, how do pigments and related architectural finishes, as part of that representational reality, fit into the message of such a program? This question was not addressed by Root; but the time has come to undertake such a task. Furthermore, Root’s definition of an imperial program was one that allowed variant visual languages in different regions of the empire. It now invites us to consider the question of how polychromy worked within that larger project. If, as I argue below, Achaemenid palaces in the Iranian heartland were “microcosms” of imperial polychromy and paint, how can we imagine the processes of deliberation and labor that produced these different microcosms?

This chapter discusses issues of artistic practice and patronage in the imperial program as they relate to Persepolis and Susa—practices and systems that led to the production of the lavishly polychrome built environments that we have begun to grasp through material remains in Chapters 3 and 4. It then offers preliminary ideas about *interpreting* the evidence assembled in the documentary chapters on the polychromy of Achaemenid Persia. These ideas, however, represent only the first step toward a long term goal. This chapter aims to move us beyond the notion that colorful surface decoration was *merely* decorative in order to pursue polychromy as an integral element of the symbolic content and impact of the court environment. In my opinion, a case can be made for a far more complicated and nuanced set of meanings for the polychromy of the Achaemenid court than the notion of a purely decorative function allows.

The House of Paint: A Scenario involving Architect, Sculptor, Painter: International Labor and Interconnected Craft Traditions

The rich textual corpora of the Persepolis Fortification and Treasury tablets found on the Takht in 1933 and 1936 respectively have helped us tremendously in reconstructing aspects of the social history of the Achaemenid court in the Persian heartland. These administrative records provide data on the bundling of work resources and many aspects of daily business at the imperial center in the late sixth and early fifth centuries BCE. Our knowledge has improved steadily in recent years, as these sources continue to receive attention.¹⁷² These texts provide evidence of labor forces brought to Persepolis from all over the empire to work on the construction of this imperial capital. Although we lack similar administrative texts for Achaemenid Susa, the Susa Foundation Charters (notably DSf—to be discussed below) are documents of imperial display that reinforce in rhetorical terms the sense of an “international labor force” that we receive in reliable laconic terms from the disbursement records of Persepolis. The phenomenon is rich in ancient Near Eastern precedent (e.g., Zaccagnini 1983).

Achaemenid Persian art was certainly planned at the highest level of court patronage, making strategic use of guidance from regional informants (Root 1979). The art was executed by teams of artisans who came from near and far, bringing with them multiple traditions of artistic practice. The polychromy of Persepolis and Susa must be understood within this scenario. Craftsmen traveled, providing their services to rulers.

¹⁷² Fortification tablets: For the texts see particularly Hallock 1969; Henkelman 2008; papers in Briant, Henkelman, and Stolper 2009 with vast bibliography citing overviews of work by scholars worldwide. For the seals on the tablets and related issues, see Garrison and Root 2001 (with extensive bibliography to that date) and forthcoming a-b; papers in Briant, Henkelman, and Stolper 2009. Treasury tablets: For the texts see Cameron 1948. For the seals ratifying them see Schmidt 1957 for the basic preliminary documentation.

Goossens, Nylander, and Uchitel have summarized the evidence for foreign workers at the Takht, specifically, and have come to the same conclusions. The epigraphic evidence from Persepolis documents Egyptian, Babylonian, Indian, and Ionian craftsmen involved in the shaping and decorating of Achaemenid architecture (Goossens 1949; Nylander 1968; Uchitel 1991). The administrative tablets from Persepolis provide a clear image of an ethnically mixed population working in Persepolis (e.g., Henkelman and Stolper 2009). Many travelers who may have been involved in the construction and are mentioned on travel-ration texts, came from the East, i.e., Bactria and India (Hallock 1969: 6); other crews came from Assyria, Babylon, Egypt, Ionia, and elsewhere to the west. The administrative documents supply the most reliable textual evidence, but literary sources reinforce their testimony.¹⁷³ All this evidence shows that in our investigations of working methods relating to polychromy judicious recourse to analogy from these other areas is appropriate.

In the Achaemenid palaces, it is quite certain that the carvers prepared parts of the surface for paint application, and that the connection between sculpting and painting was very close.¹⁷⁴ There is evidence of careful preparation by the sculptor of the surfaces that were to receive separately attached ears, horns, crowns, beards, and other elements. In the case of some relief sculptures, details that are fully carved in some areas were sometimes left uncarved in parallel areas elsewhere on the same monument. The various craftsmen who built and decorated the monuments were, therefore, part of a collaborative network.

¹⁷³ We hear, for instance, that the Greek sculptor Telephanes of Phokaea worked at the courts of Darius and Xerxes (Pliny, *Natural History* 24.68; Miller 1997: 103).

¹⁷⁴ For aspects of the relationship between sculptors and painter in the working process in the ancient Mediterranean see, e.g., Ridgway 1983; Brinkmann 2003: 63.

This network had to operate on many levels. The imperial capital at Persepolis was intended by its patrons and planners to address an international audience of a vast empire; the craftsmen who executed this program performed in a setting of multilingual and multicultural activity. Within this multi-cultural community of production, the efforts of masons, sculptors, painters, and gilders required interactive participation. Paint was even a tool used in construction methods, just as it was a tool used in embellishment and iconographical enhancement. Carl Nylander (1965, 1970: 28) has argued, for example, that some of the reliefs at Persepolis were stippled with a toothed chisel for the purpose of preparing them for paint (compare **Figure 5.7**), and that finely incised lines attested on several reliefs served as guidelines for the painters. He also demonstrated convincingly that a reddish layer still observable on many surfaces on the Takht was used as a guide for joining blocks such as column drums to achieve a close fit (Nylander 1970: 37-8). This technique of using red paint in the construction process has a direct link to Ionian stone-working tradition, as explicated by Nylander. Likewise, techniques of and approaches to *embellishment* by painting and gilding as well as embellishing the monuments with metal or precious stone inlays at Persepolis doubtless also depended greatly upon venerable traditions of the arts of the peoples within the empire.

It has been argued that various parts of the sculpted façade of the Apadana at Persepolis were left unfinished (Sweek and Simpson 2009). However, since the entire façade was certainly in my view painted, I would argue that “unfinished” is a misleading term here. Parts, that may appear unfinished to us today since they are not fully carved out, may simply have been painted over.

In anthropological discourse and in the arenas of classical and Near Eastern archaeology, the status of craftsmen has received much attention. There is now a vast bibliography on the subject.¹⁷⁵ It remains difficult, however, to establish any evidence of status distinction between different craftsmen engaged at Persepolis. Administrative documents offer little so far to allow us to assess status differentials between, e.g., specific *types* of painters, gilders or ornament makers at the Persian court (see above, Chapter 2). Interesting comparative information, related specifically to painters and sculptors, comes from Athens at the period contemporary with the Achaemenid Persian Empire. Of the more than 100 workmen epigraphically attested to have built the Erechtheum on the Acropolis in Athens at the end of the fifth century BCE, most of whom were foreign workers (*metics*), only three are referred to as painters, only one is explicitly called as a gilder (IG I³467 ll. 54-59; 291-5; 351-4; Randall 1953: 201; Paton 1927: 409; Schultz 2009: 77-78 n. 29-33). These inscriptions also reveal that, compared to the wages of sculptors, the compensation the painters and gilders received was low.¹⁷⁶ Although the records are very specific, they are not complete. We do not know, for example, who was responsible for inlaying the multi-colored glass beads that were part of the decoration (Stern 1985; Jenkins 2006: 129 Fig. 117). The information provided on the payments to workmen is, however, in sharp contrast to the payment documented for an early third century BCE painter at Delos, who received the same compensation as the

¹⁷⁵ Greece and Rome: e.g., Gummerus 1913; Randall 1953; Burford 1972; Meissner 1999; Fischer-Hansen 2000; Pipili 2000; Harris 2001; Cuomo 2007; Near East: e.g., papers in Gunter 1990.

¹⁷⁶ The sculptor would make 60 drachma per figure, the painters would get only 4 to 5 drachma per foot or coffer lid (Randall 1953: 208). There is abundant evidence for polychromy and original metal attachments on the Acropolis in Athens: with the identification of (Egyptian) blue pigments and hematite on the Parthenon, it is clear that similar techniques will have been used throughout vast areas (Vlassopoulou 2008; Verri et al. 2009). In 1989, a commission published the results of XRF and electron MS on geisa, metopes and triglyphs attesting the presence of Egyptian blue (CaCuSiO) and Iron ochre (FeO) (Kouzelis 1989). Also, the pediment sculptures themselves were painted (Jenkins et al. 1988).

sculptor (Collignon 1898: 57-8). In contrast to the records from Athens and Delos, to date, the Persepolis Fortification and Treasury tablets do not indicate unequal compensation for these different jobs.

Workshops of the craftsmen employed at Persepolis may have existed immediately to the north of the terrace. Lack of sufficient documentation from the excavations prevents us from drawing definitive conclusions at this time.¹⁷⁷ That work and life probably intermingled in the area close to the Takht is clear, nevertheless, from parallels from other ancient Egyptian and Near Eastern sites (e.g., Drenkhahn 1995 esp. 341-42 for Egypt; Lodging 1974; Luciani 2006).¹⁷⁸

On Find Contexts and Symbolic Meanings

Evidence available from other ancient Near Eastern sites provides additional glimpses into the work processes involving color and polychromy. Large lumps of pigment were excavated by Place in the corners of a chamber in the Assyrian palace at Khorsabad. A red lump ‘en quantité considérable’ weighed about twenty kg (!), and a blue lump about one kg (Place 1867-70 vol. II: 251). In the same chamber, Place noted three unfinished sculpted stone slabs with chips of the same stone and pigment lumps scattered on the

¹⁷⁷ An unpublished letter in the Oriental Institute (April 26, 1934), sent by Herzfeld from Tehran to James Breasted refers to a recent excavation north of the terrace in what may have been such a workshop. “Grabung nördlich der Terrasse, am Fels: 3 Schichten übereinander, die zwei oberen nachachämenidisch. Darunter liegt eine achämenidische Schicht, die kleine Häuser zu enthalten scheint, wie Häuser einer kleinen Stadt. Aber vielleicht sind es Häuser und Werkstätten für Arbeiter, die Persepolis bauten. Das bisher am vollständigsten untersuchte Haus scheint eine Werkstätte eines Goldschmiedes zu sein: seltsame technische Einrichtungen, mit Ofen und da fanden wir sehr hübsche Stücke von Goldschmuck, auch viel Sachen aus Halbedelsteinen ...“ A metal slag fragment found by Herzfeld during his earlier investigations north of the platform is today in Berlin (Islamisches Museum). The recent Italian excavations west of Persepolis uncovered further evidence for workshops in the area around the platform: Callieri, pers. comm. October 2009.

¹⁷⁸ New evidence has very recently emerged giving further indication of the presence of painters in the MarvDasht plain. This will be published, soon.

floor (Place 1867-70 vol. I 92-93; vol. III pl. 48). This evidence suggests that this was a workshop in which both painters and sculptors labored closely together. In room SW 6 of Fort Shalmaneser at Nimrud, the excavators discovered “large lumps of bright Egyptian Blue ... certainly stored” (Mallowan 1966: 408). Excavations at a Hellenistic/Roman temple in Petra in Jordan identified a subterranean painter’s workshop inside the temple (Hammond 1996: 49-50; Shaer 2003: 125-26). In this workshop, pigment bowls were excavated and the materials have been analyzed (Shaer 2003: 127-28). This workshop was part of the original building plan at Petra, and it is assumed that it “was meant to be for activities related to the maintenance of the building” (Shaer 2003: 126).¹⁷⁹ Abundant evidence for a factory and paint shops from ancient Egypt is available from Tel Amarna of the New Kingdom (Spurrell 1895: 230-35). These assemblages include tools such as paint boxes.¹⁸⁰ There have also been important investigations on the complexities of studying the technical process involved in creation of painted Egyptian tombs (e.g., Bryan 2001; Owen and Kemp 1994; Miller 2008a).

Ongoing painters activities are revealed by the many bowls containing pigments as well as the pellets and lumps of pigments in Persepolis, some found in secure contexts close to the monuments. We may infer that touch-up work was a constant reality of the maintenance of polychrome reliefs and other architectural elements on the site.

¹⁷⁹ The same may have been the case on the Athenian Acropolis. “Closed jars containing actual pigments” were said to have been discovered near the south east angle of the Parthenon during excavations in 1836 (Donaldson 1851: 44; Semper 1851b: 43). The actual excavation record (Wordsworth 1837: 281) casts doubt on this later commentary, however, since it mentions only a fragment of a vase with an inscription on it. For the materials, tools, and circumstances surrounding the activities in the painter’s workshop at Olympia see Heilmeyer 1981.

¹⁸⁰ This find is especially valuable because many of the paint containers from Egypt lack specific archaeological context. A wooden paint box from Egypt, purchased by the Oriental Institute in 1928, has been dated to the Late Period—to sometime between 1070 to 332 BCE: OIM 13704.

Archaeological evidence for paint pots and paint containers also reveals important symbolic associations. It is striking, that in most cases, the paint equipment known to us from Greek and Roman spheres comes from tombs, often, but not exclusively, from the tombs of the painters themselves (e.g., Blümner 1912 vol . IV: 457 ; Bachmann and Csyzsk 1977). In most of these cases, the paint containers still held pigments. This suggests that such materials were considered as appropriate offerings to the deceased. In the tomb of Tutankhamen a miniature ivory paint box made for “Princess Merytaten, Daughter of the Great Royal Nefertiti” (c. 1350 BCE) was found directly between the front paws of a statue of the god Anubis (Berman and Bohac 1999: 312). The evidence demonstrates that such implements of the painterly crafts were recreated as elite accouterments with possible religious meanings. At the same time, it seems that members of the elite often positioned themselves as painters. An example of such figure is Amenemope who served as vizier under Amenhotep II.¹⁸¹ In the New Kingdom, members of the royal family were known to have painted (Silverman 1982: 287-88 cat. no. 398; Berman and Bohac 1999: 312).

Additional material evidence from elite contexts in the western reaches of the empire suggests the validity of this concept of prestige attached to the intrinsic value of pigment-as-pigment. In the tomb of the Carian satrap Mausolus—the Mausoleum of Halicarnassus a shell containing a large amount of blue pigment was found, although the exact circumstances of the find were not reported in the nineteenth century record (Jenkins et al. 1997: 36 pl. Fig. 5). Pigment cakes have been found in other tombs

¹⁸¹ (e.g., Berman and Bohac 1999: 311 No. 249 and color pl. 57 with the inscription “the overseer of the city and vizier [Amenemope].”) A second example belonging to the same person is in the Metropolitan Museum of Art. Berman argues that the palette was used by Amenemope “for his own pleasure” (ibid.).

(unfortunately of uncertain date) in the same region (Jenkins et al. 1997: 36 and color Pl. 3, from a tomb at Kamirus, Rhodes).

It is now time to return to the evidence associated directly with the Apadana at Persepolis. As noted in Chapter 4, potsherds with pigments, as well as pigment lumps were excavated by Tilia in front of the northern staircase, inner western flight (reds, blues, and greens); and very recently, more were discovered (in reds and blues only) in front of the Apadana's eastern staircase, northern flight. On each side, the material was discovered at some depth (c. 26 cm) below the base of the visible façade. The position of both these burials of materials stretched out along the files of gift-bearing delegations from the subject lands depicted bringing praise-offerings toward the central panels of the two façades. Originally the central panels depicted the king about to receive these offerings.¹⁸² I put forward the hypothesis that these paint materials were deposited by the artisans themselves, intended as buried offerings to the Apadana (and the King). Further investigation is clearly needed, but the specific find context raises provocative questions.

Making Decisions in Persepolis

At the top of the hierarchy of effort leading to the polychrome environment of Persepolis, we can, with Root (1979), consider it a given that the king himself was engaged in the creation of a visual imperial message. Members of the royal family and the nobility acted as advisors to the king. For the early years of the Achaemenid Empire under Darius I, names of such individuals are preserved in Persepolis. From the Fortification tablets we

¹⁸² These were the central panels that were removed to courtyard 17 of the Treasury, perhaps under Artaxerxes III. We do not know, however, at which point of the building's history the pigments were deposited.

learn that Parnakka son of Aršam, who was perhaps an uncle of Darius I, oversaw the administration of Persepolis and its hinterland and was permanently based there. As the chief administrator of the royal capital, Parnakka had access to the king, no doubt recording his orders before having them carried out.¹⁸³

Below Parnakka were other administrators such as Ziššawiš, who figures prominently in the Fortification archive as Parnakka's chief assistant carrying out similar tasks, including issuing and recording.¹⁸⁴ The office of *unsak* (probably meaning second-in-command) has its own official seal used on the tablets by successive holders (Karkiš and Šuddayauda) who were specifically concerned with disbursements to workers (*kurtaš*).¹⁸⁵ In the context of a larger imperial setting, the figure of Udjhorresnet exemplifies a type of individual who was well-positioned to advise the Achaemenid court on *regional* traditions and cultural perspectives. Udjhorresnet was an Egyptian official, a former member of the Saite court, who went on to serve as an adviser on matters Egyptian first for Cambyses and later for Darius I in Egypt (Root 1979: 22; Lloyd 1982; Bareš 1999). Through the mediation of high-level courtiers such as these, the mandates of the king were translated into effective artistic achievement by international groups of artisans in Persepolis and other imperial capitals.

¹⁸³ Brosius 2007, 29 n. 24; Henkelman 2008, 4 n. 10. 398 texts have so far been tabulated to refer to Parnakka, next only to Darius himself with 524 texts. For the seals of Parnakka: Garrison 1991: 9-10, Fig. 9-12; Garrison and Root 2001: PFS 9* and PFS 16*. For earlier work on the Achaemenid court and titular cp. Hinz 1971.

¹⁸⁴ Ziššawiš is probably identical with Tithaios, referred to in Hdt. 7.88. His seal is PFS 11* (a royal name seal of Darius I) depicting the king before an altar (Garrison 2000: 141 and fig. 18; Garrison and Root 2001: 18-19, forthcoming a; Kuhrt 2007 fig. 11.44).

¹⁸⁵ This seal (PFS 1*) is used more times than any other in the Fortification archive (Garrison and Root 2001: Cat. No. 182). PFS 1* and the issue of the titulary of *unsak* are discussed in Garrison 2000: 127-130 and fig. 2.

How were choices of color determined in this environment? Were they as carefully calibrated as (in Root's view) were choices of sculpted iconographical content? For the sake of argument, one might suppose that determinations of color may have been made based simply on the availability of certain pigments or other raw materials at the necessary moment. But even such a possibly simple effort as the application of blue to the inscriptions at Naqsh-e Rostam or to the surface of a monumental bull implies decision-making.¹⁸⁶ Increasingly the evidence suggests programmatic consistencies in uses of color schemes—consistencies that imply planning with high intentionality of message. It appears that the standards of applying certain colors and color schemes, even gilding, on the surface of monuments in the empire were dictated by the nature and importance of the monuments and the wealth of the Achaemenid rulers and by those who commissioned or supervised the work.

Much research has been done on systems of patronage in art across a range of cultures and historical settings, the involvement of rulers and government in commenting on issues of paint and polychromy, and in the supply of materials as features of centralized structures of economy and control. The guidelines on revolutionary murals of the Artistic and Cultural Bureau of the Qom Seminary's Office of Propaganda during Iran-Iraq War 1980-1989 (trans. Chelkowski and Dabashi 1999: 291) are particularly interesting:

... The ultimate objective should be brevity of message, deliberate and *emphatic brush strokes*, clear cut shapes and *brilliant colors*. Every mural should be framed by *solid colors*, selected from one of the *dominant colors* of the picture (emphasis mine).

¹⁸⁶ For psychological studies related to the subject of decision making in color applications see, e.g., de Destefani and Whitfield 2008.

Well-documented examples of state-engagement in artistic production include the involvement of Assyrian rulers, Renaissance Dukes,¹⁸⁷ and the Spanish king in the sixteenth century.¹⁸⁸ After Charles Texier had visited the palace of the Persian Shah at Isfahan in the mid-nineteenth century he stated that

all paintings in the palace ... were made according to a uniform program. It seems that each of the paintings had to conform to the requirements of some official patron. One painting would serve as a model for all subjects of its type, which were then reproduced in both miniature and large scale historical paintings. ... The other paintings were reproduced almost without variation for different palaces in Isfahan, and they were without doubt different copies of the original paintings, the copies often indistinguishable from their primary models (trans. Ekhtiar 1998: 52).

In these cases, painting and polychromy were utilized throughout to convey the power of members of elite in the public sphere. The Achaemenid king's use of art as a means of centralizing power and consolidating diplomatic relations with far flung regions within the empire and zones on its peripheries may also have placed painting and polychromy at the center of the court's visual vocabulary. The evidence assembled here is moving in that direction.

Pigment and Empire: Supplying the Courts with Material

The stone material for the palaces of Persepolis was supplied locally. At Persepolis, the quarries have long been known to be located close to the Takht (Tilia 1968; Krefter 1967 and 1971; Zare 2004). The stone monuments recovered at Susa (discounting the statue of

¹⁸⁷ For fifteenth century Florence, scholars have detected a networking system between commissioners and executing painters (McGrath 2000).

¹⁸⁸ Bruquetas Galán (2008) has shown that the Spanish king Philipp II (1527-1598) was directly responsible for the acquisition and buying of pigments.

Darius – see below) were made of local Susiana limestone (Trichet and Vallat 1990: 205; Razmjou 2002b: 102). It is interesting that Darius specifically boasts in the so-called Susa Foundation Charters of Darius (DSf), that the stone for the soaring columns of the Susa palaces came from a certain village in Elam.¹⁸⁹ It has also been determined through scientific analysis that the raw materials for the bricks employed at Susa stemmed from the rich geological sources available locally (Ruben 1979; Trichet and Ruben 1980). Even without the benefit of similar materials sourcing for Persepolis, Schmidt had stipulated earlier that the glazed bricks at Persepolis must have been produced “in the neighborhood of the site” (1957: 93).¹⁹⁰ He then explains that despite his view that the Persepolis bricks were *produced* locally, “we are quite certain that the makers of these bricks were foreigners, presumably Babylonians, here as at Susa” (ibid.).

Were the pigments and gold for embellishing the monuments of Persepolis also locally derived, or did they come from further afield? Only recently have scholars attempted to reconstruct the process of supplying paint pigments and related materials for ancient capitals (e.g., Gliozzo 2007 (pigments) and Wilson 2007 (metal) for Rome; see also: Hejl 2005). Matson and Schmidt (1957: 133 n. 4) suggested that in case of Egyptian blue, two scenarios can be postulated for its acquisition and use in Persepolis:

1. that the ingredients of the compound were imported and that the artisans who made the objects were foreign experts either from Egypt or Mesopotamia, and

¹⁸⁹ Kent 1953: 142-44. Root 2010 and forthcoming discuss the political valences of this and other attributions of labor and material in DSf, including comments on Elam, Babylonia, and Media.

¹⁹⁰ Taking the DSf text at face value as fact in its statement that the makers of the bricks were Babylonians, Schmidt (1957: 93). See Root 1979: 7-8 and Root 2010: 178 on dangers of reading the DSf and companion texts as fact on a literal level. Indeed, here above, Schmidt used a rhetorically charged imperial text to determine as fact the trajectory of an archaeological inquiry.

2. that lumps or powder of Egyptian blue could have been imported for use as pigments, to be mixed locally with a carrying agent – water, egg white, etc.

These scenarios are not necessarily mutually exclusive. It can be argued that in dry form, pigment cakes and cubes formed entities that could be transported long distances elsewhere and then crushed, ground, and pulverized thoroughly with mortars, mixed with binders, and converted into the coloring agents—all on the work site itself. In discussing the few traces of paint preserved on the architecture and sculpture at Susa, de Mecquenem argued that some raw materials including the red ochre came “sans doute” from islands of the Persian Gulf (Mecquenem 1947: 95). Today, such atribution is questionable, and it is only recently that the raw materials excavated at Susa have been properly analyzed, though the evidence remains difficult to interpret (Razmjou et al. 2004; Caubet and Daucé 2010).

It can be assumed that in both Achaemenid and earlier periods the manufacture and distribution of raw materials and the manufacture of pigments and gilding must have played an important role in the economy and networking of entire social groups. Demand for and supply of the materials must be seen as two factors in the network system of polychromy on a site. Egyptian blues, as well as all other materials applied to the surface of the monuments in the Achaemenid courts required an understanding of manufacture, application techniques, and techniques for fixing and preserving colors.¹⁹¹

Though archaeo-metallurgical studies focusing on pre-Islamic Iran have made much progress, our knowledge about various raw materials supplies in Fars in the

¹⁹¹ Among our earliest preserved records on how to produce red colors from yellow earth is an Assyrian cuneiform tablet of c. 1,700 BCE (Thompson 1926: 31-2; Leicester 1971: 8).

Achaemenid period is still rather limited. Minerals and raw materials were exploited in mines close to Persepolis in the Achaemenid period: for example, a copper and two iron mines have been investigated since 2003 (Emami 2005). A copper mine has been identified in the Bavanat boundary with several tunnels up to 40 m deep, where copper sulphide and copper oxide were excavated. The two iron mines are located in the same region, called Faryadan and Kan Ghobar, which have deposits of magnetite and siderite. Both mines have two large gates some 14-17 m below ground, again with several tunnels, with pottery found there that suggests metallurgical processing for the Achaemenid period (Emami 2005).¹⁹² It is possible that the green-producing malachite used for pigment ($\text{Cu}_2[(\text{OH})_2\text{CO}_3]$), a copper oxide identified on the monuments on the Takht and easily melted in a crucible, originated from these mines near Persepolis; but further investigation is needed.¹⁹³

While mines for some raw materials are documented in the area around Persepolis, some materials needed for the embellishment and finishing of architectural sculpture on the monuments would have traveled from distant regions of Iran and of the empire more widely. Gold, for example, was available from numerous places in the empire. More than one hundred gold and gold-bearing deposits and occurrences have been identified in Iran. Thirteen had clearly been exploited in the pre-Islamic period,

¹⁹² Recent archaeological research has confirmed that the Iranian plateau remained an important source of metals for early cultures in the neighboring regions (e.g., Pigott 1999a, 1999b, 2004). More than 400 copper deposits have been attested in Iran, and though widely distributed across time and space almost eighty of these deposits show indications of ancient mining (Bazin and Hübner 1969; Momenzadeh 2004). Today, the Sar Cheshmeh copper porphyry mine in Kerman province in southeastern Iran and the Sungun and Meiduk deposits in the same region make Iran one of the major copper producers of Asia (Momenzadeh 2004; Aliani et al. 2009).

¹⁹³ Excavations at Tappeh Ghabristan near Qazvin in northern Iran have produced evidence that from much earlier times professional metallurgists had a profound knowledge of techniques involving malachite mining (Benoit 2004: 185). Malachite was also mined together with azurite in the silver mines of Laureum near Athens: Brinkmann 2008: 211.

some of these located in southeast Iran.¹⁹⁴ In addition, east of Fars, the River Hyctanis in the province of Carmania (Old Persian: *Karmanâ*, Elamite: *Kurman* = PF 1348 = Hallock 1969: 381) is mentioned in ancient texts as a source for gold dust (Pliny, *Natural History* 4. 98).¹⁹⁵ There were also mines of silver, copper, and ochre in Armenia. Strabo refers to a gold mine and other mines, particularly one in northern Armenia, that produced *sandyx*, “which they call Armenian color” (Strabo, *Geographica*, 11.14.9; Kuhrt 2007: 706).

Important as is the further development of actual data on the sources of the raw materials for Achaemenid polychromy in Fars and Kuzestan, perhaps even more important is the rhetorical dimension of the supply system. The very *concept* of raw materials (and labor) for palatial constructions coming from all over the empire to the centres of power was also a significant rhetorical motif in the formative years of Darius I. Raw materials as prestige commodities of empire under the King’s control was a key element of the royal expression of power. The Susa Foundation Charters (DSf, DSz, DSaa; e.g., Kent 1953: 142-44; Kuhrt 2007: 492-495 No. 13; Root 2010) make this clear even though they do not explicitly refer to pigments.

Keeping Polychromy in Place

On the Takht of Persepolis and on the facades of the tombs of the Achaemenid rulers, architectural elements and sculptures were repaired and certainly cleaned during the Achaemenid period. The many restorations which can be attributed to this period have

¹⁹⁴ Momenzadeh 2002, 2004. According to field observations gold was obtained from both hard rock and alluvia, by panning (Momenzadeh *ibid.*; Stöllner et al. 2004).

¹⁹⁵ According to the Persepolis Fortification tablets, the name of one of the first governors of Carmania was Karkiš, and it is known that there was a royal road through Carmania.

been documented in exemplary publications of the Italian restoration team between 1965 and 1978 (Tilia 1968, 1969a, 1969b, 1972, 1974, 1977, 1978). In fact, there is not a single structure on the Takht in which repairs have not been identified. Achaemenid efforts to restore and preserve relief sculptures have also been identified on the facades of the reliefs at Naqsh-e Rostam (Nagel and Rahnaz 2010). On the monumental relief depicting Darius I at Bisotun Luschej counts at least ten “repairs” (Luschej 1968: 83). Evidence of ancient restorations in the palaces of Achaemenid Susa has also been documented (e.g., Boucharlat 2010: 393 Fig. 453: column bases from the Shaour Palace). It would be revealing to undertake linguistic studies of the Old Persian, Elamite, and Babylonian words preserved in inscriptions and translated as “restored.” When, for instance, Artaxerxes II (404-358 BCE) claims to have “restored” the palace of his grandfather at Susa, what did he mean?¹⁹⁶ Is this yet another rhetorical motif meant to express a metaphorical concept of kingship? Or does it refer explicitly to actual physical restorations of a structure? As old or broken pieces of stone were replaced by new ones, paintings may have been vanished once the colors became dull and over-painted. However, thus far investigations have not revealed any over-painting on relief sculptures. This, of course, does not mean that there was no such over-painting.

¹⁹⁶ Darius I restored certain structures at Susa (DSe § 5 – Kent 1953: 141-42). In this aspect it is interesting to note that according to Calmeyer (1992: 107) and Potts, “Darius never speaks of restoring buildings, ... a clear break from his Elamite predecessors (Potts 1999: 325). See now Root 2010: 186, making explicit that it refers to the restoring of the order in an empire and a rebuilding of a wall: cp. the trans. by Kuhrt (2007: 491): “There was much earlier building which was not in a good state; at Susa I saw that the fortress had collapsed. Then I built there another fortress.” On temple “restorations” in the Ancient Near East see now: Schaudig 2010. The term used in ancient Greek was “kosmesis” and is attested for the monuments on the island of Delos: Brinkmann 2003: 24.

Polychromies in Empire - Color as a Signifier of Wealth

Achaemenid Persia offers an excellent case study for the multitude of issues related to the interrelation between color and power. The remains of Persepolis (and Susa) allow us to employ theories concerning methods and levels of communication and issues of imperial message embedded in the programmatics of polychromy. Specific minerals employed to enhance the surface of monuments and artifacts may have signaled important messages.

Plutarch, describing the Macedonian campaigns against the Achaemenid Empire, stated that Alexander discovered at Susa some 5,000 talents of porphyra hermionike, “purple from Hermione,” which had been stored for 190 years and “was still fresh in color” (Plutarch, *Alexander* 36.36). This suggests that a trove of molloskan pigment for purple color was kept as an intrinsically as well as symbolically valuable prestige commodity held in a royal treasury context, and it may provide an analogy for what we see on the Takht at Persepolis, with its remnants of a diverse range of materials (Schmidt 1957; Cahill 1985).¹⁹⁷

The purple purportedly hoarded in the royal treasury at Susa may have been used for dyeing textiles of the elite. It seems increasingly likely that by the Achaemenid period purple had become something of a royal prerogative, although Gage (1993: 25) has argued that purple did not become a royal prerogative until the Roman Empire (e.g., Pliny, *Natural History* IX, 36.126). He acknowledges the discovery of remnants of purple cloth with gold medallions from the Tomb of Philip II in Vergina, Greece (ancient Macedonia). In my view, the Macedonian court of Philip II (contemporary with the late

¹⁹⁷ See Gage 1993: 25-26, 80 on high quality purple as a very expensive commodity (see also, e.g., Reinhold 1970; Hermann 1975; Blum 1988; Stutz 1990; Cooksey 1994).

Achaemenid empire) arguably reflects cultural norms of the Achaemenid kings, whose courtly arts were certainly emulated in other features of the Macedonian record. An alabaster vessel, introduced below, is an item of great interest in relation to the connection between purple and royal power in the Achaemenid Empire.

In a compelling article, Aufrère has convincingly set an analogy between ancient Egyptian temples and treasure mines of minerals (Aufrère 2001). From the observations on Achaemenid palace architectural decoration offered in previous chapters this might be a useful way to consider the meaning of the polychrome appearance of Achaemenid palaces as well. One can argue that color served as an indication of wealth (Summitt 2000: 146-9).

White on Blue – Gold on Blue: The ‘Beautiful Illusion’

Research on the linguistic aspects of color in the written sources available for the ancient Near East is thriving (e.g., Brenner 1999; Rossi 1996 and 2006).¹⁹⁸ However, there are many gaps in our knowledge that linguistic approaches cannot fill. Color naming, color perception, and color meaning are different concepts, as the responses to the influential study of Berlin and Kay (1969) on the seven-stage evolutionary sequence of color terms has proven (e.g., Borg 1999). The widely accepted theory that color designations in earlier times were not as exact as in our own day is true for ancient Iranian languages as well as for others. Thus, for instance, “the area of blue-green was often indeterminate,

¹⁹⁸ Rossi has recently reviewed the linguistic aspects of color terms relevant in Indo-Iranian Studies (Rossi 1996; 2006). He has investigated aspects of color terms referred to in the *Avesta* updating an earlier work on colors in the *Avesta* (Jackson 1890). Rossi laments the absence of studies related to the color aspect, and calls for a multi-disciplinary research project on ancient Iranian color terminology.

simply suggesting something dark, whereas the red-yellow hues often formed a single, light category” (Schimmel 1993: 46; cp. Rossi 2006: 461).¹⁹⁹ This dissertation is *not* a systematic inquiry into linguistic aspects of color and therefore does not focus on the terms that may have been used for the pigments applied for the polychromy of Achaemenid Persian architectural sculpture in palaces, as attested in the many languages written and spoken in Persepolis and throughout the empire. Here, I discuss only selected issues relating specifically to language and color in Persepolis.

Blue in fact, occupies an important place not only in the material records preserved from Persepolis, Naqsh-e Rostam and Susa, but also in modern discussions of the meaning of color in the ancient Near East and in the Achaemenid Empire more widely.

Names for colors are known in Elamite and Old Persian (Tavernier 2007: 36, 80 and 441-2). However, we need to be cautious in using them. For instance, while Kent has translated the term *aranjanam* as “ornamentation” or “decoration” (Kent 1953: 170), Tavernier has proposed that it refers to “colour, painting materials” (Tavernier 2007: 36). The word for blue is particularly relevant here: the term *kapautaka* is identified as blue (Tavernier *ibid.*), based on Cameron’s reading (1948: 42). But what did *kapautaka* signify? A discourse on issues related to the meaning of “blue” in Achaemenid Persia can be a case-in-point.

The confusion of modern scholars (who “translate” Achaemenid Persian attitudes towards names for colors, minerals, and actual appearance and compare them with modern concepts of color) causes difficulty. A startling yet intriguing case of the scholarly confusion is that of doorknobs/wall pegs excavated on the Persepolis Takht

¹⁹⁹ The study of color terminology in Akkadian and Sumerian by Landsberger remains crucial: Landsberger 1967.

(**Figures 6.2-3**). Highlighted by white paste, the cuneiform inscriptions DPi and XPi on these knobs include the term *kāsakaina* (Herzfeld 1938: 23; Kent 1953: 109). This term has troubled philologists from the beginning. Various translations have been suggested. In his early authoritative edition of the Old Persian, Kent translated it simply as “door knob of precious stone, made in the house of Darius the King” (1953: 137), while the authors of the 2005 British Museum exhibition catalogue, *Forgotten Empire*, translate “peg of lapis lazuli made in the house of Darius the King” (Curtis and Razmjou 2005: 96, No. 83).²⁰⁰ Schmitt, arguably the most authoritative scholar of Old Persian texts in our day, has translated it as “knob of precious stone (imitation), produced at the court of King Darius” (Schmitt 2009: 120).²⁰¹

In fact, the object is made of Egyptian blue (Curtis and Razmjou 2005: 96). We seem to be faced with combined problems of: (1) the vagaries of translating ancient texts, in original languages some of which (particularly Old Persian and Elamite) do not have deep attested lexicons for terms of this sort; (2) the probability of embedded ambiguities and fluidities of the ancient languages themselves; and (3) the possibility that some scribes (especially those operating in a polyglot environments such as existed in Persepolis/Susa) were sometimes out of their depth in rendering certain nuances. The door knob artifacts as features of Achaemenid palatial furnishing operate therefore on several levels of evidence. At the most basic level, they exemplify another way in which polychromy existed in the Persepolis palatial environment in that a blue-color object projected out from doors or walls in a dynamic three-dimensional form. Beyond that level, however, their blue color certainly evoked the visual/material idea of lapis.

²⁰⁰ Cp. Amiet 2010: 355: “pommeau en lapis-lazuli fait dans la maison de Darius, le roi.”

²⁰¹ “Knauf aus Halbedelstein(imitat), an des Königs Dareios Hof hergestellt” (trans. mine).

Although not literally made of lapis lazuli, their blue color and particular hue strongly resemble lapis. They were, therefore, evocative of lapis as the opulent commodity it was. The fact that they are inscribed with the royal name, adds an extra symbolic aura to them as colored entities punctuating the architecture. The inscriptions on the knobs bring us face to face with the ambiguities of “blue” as a language term in the culture.²⁰²

It is not only interesting that blue materials depicting key iconographic elements, like lions and bulls, were found throughout the empire, but it is also important to note that blue was used as colorant to paint parts of the Persepolitan column capitals. In particular, the animal protome elements of the capitals in the form of bulls and, less frequently, lions (Chapter 4), strongly suggest the multiple layers of meanings of blue. The lion and the bull had strong cosmic associations as wild creatures symbolizing celestial forces of sun and moon (see, e.g., Root 2002). The color blue, as universally recognized, is directly linked to the heavens and by extension to qualities of shining aura (e.g., Landsberger 1967; Borg 1999). A closely related meaning of blue is conveyed by the blue coloring of hair and beards of elite male figures on the Persepolis reliefs.²⁰³ In this context, the surrounding of the face with blue connotes a framing of gleaming splendor (Rossi 2006: 475-76).²⁰⁴ In both of these situations in Persepolis we can also speak to the intertwining

²⁰² It is recognized ethnographically that the absence of a specific dedicated term for “blue” in many cultures does not mean that there was an absence of the presence of the color blue. The existence of the sky alone makes such a thing unimaginable (Powels 1999: 153). Powels, certainly deriving from Landsberger’s seminal 1967 study, notes (155) that “blue” presents difficulties for us in ancient Semitic languages. Akkadian renders blue by *uqnû*, which is a term used interchangeably for lapis lazuli or turquoise.

²⁰³ Persepolis figures, where traces of blue have been detected on beards include the beard of Darius at Naqsh-e Rostam, and the southern tomb above the Takht (see, e.g. Tilia 1978: 43 Fig. 2a). For an actual finding of an inlaid beard made of blue composition, see Tilia 1978 Pl. C Fig. 2. As for the Susa glazed bricks, there are many variables how the colors appear today, including conservation treatments and wear patterns. Unlike Persepolis, so far from Susa we have no rendering of a royal figure depicted in the glazed bricks.

²⁰⁴ In this regard, it is worthwhile looking at immediately post-Achaemenid cultures. It has been suggested that in the Sogdian paintings at Panjikent (Tadjikistan) “blue is associated with the flesh of individuals whose attributes and iconography indicate their supernatural status” (Azarpay 1981: 165).

of the color blue rendered often with paint and the semiprecious stone of great value and symbolic association, lapis lazuli. The work of Herrmann (1966, 1968), Winter (1999), and Moorey (1994: 85-92) has shown that lapis was charged with meanings. According to Moorey, “lapis-like was a standard metaphor for unusual wealth from early in the extant literary tradition [of ancient Mesopotamia], and this stone was for long synonymous with gleaming splendor, an attribute of gods and heroes” (Moorey 1994: 85).

Fragments of miniature lions made entirely out of lapis have been excavated in Persepolis (Curtis and Razmjou 2005: 102 No. 95, excavated east of the Palace of Xerxes in 1951; further examples in the Persepolis Museum and the Oriental Institute Museum, University of Chicago: PT 2.151, excavated by Herzfeld, body of lion of lapis). At least one other well-preserved lion – unfortunately without a specific find context – was recovered from the art market (Hori and Ishida 1986: 13 No. 26 and color image page 15 – **Figure 6.6**).

The intertwining of cosmic or spiritual connotations with the colors and materials of blue is further attested through the Persepolis Fortification tablets. Here, color terms were used not only to literally describe colors; they were also used to name individuals or to define aspects of the natural landscape. In a recently published tablet presenting a religious journal, reference is made to the divine mountain *Ak-se-na-na*, which was part of the wider Persepolis region (Henkelman 2008: 393 and 536 = PFNN 2259: 4). The Elamite term *Ak-se-na-na* (Old Persian: *axsaina*), meaning blue-green or turquoise, has also been identified as a qualifier of precious stone in inscriptions of Darius I (Tavernier

2007: 47), and in addition, as a personal name (PF 479: 2; PFNN 522: 14, PFNN 1467: 2, PFNN 2127: 2 = Henkelman 2008: 393).

I would argue that material imitations are one important aspect when studying the polychromy of Achaemenid Persian sculpture. The blues may well have been painted to create an illusion of actual lapis.²⁰⁵ Thus, if we see traces of blue on the head of the bull we can interpret it as an imitation of lapis, or an evocation of this precious stone. “Beautiful illusions” (Kühlenenthal 2004: 17) is one term to name a characteristic feature of polychromy of the Achaemenid environment.



Figure 6.1 Brick from the Achaemenid Palace of Darius at Susa (Dieulafoy 1891, pl. 12)

²⁰⁵ So far, no ultramarine (the pigment made from lapis lazuli) has been attested on any of the relief sculptures at Persepolis. Recently, tests have been done on the wall paintings from the Shaour palace at Susa. The results of this analysis await definitive interpretation by F. Moohseni. According to Moorey (1994: 85), “... it [lapis lazuli] was not ground up and used as a pigment in either paints or glazes in antiquity in Mesopotamia. Ultramarine ... seems first to be documented about AD 500 in wall-paintings in Central Asia. In Mesopotamia it appears at Ctesiphon in the sixth to seventh centuries AD.”



Figure 6.2 Fragment of Door Knob or Wall Peg (diam. 11.4 cm) with trilingual inscriptions (DPi), excavated in the area of the so-called Harem, Tehran National Museum, No. 2408 (cp. Schmitt 2009: 120; Photo: A. Nagel)



Figure 6.3 Fragment of Door Knob or Wall Peg (diam. 11.4 cm) with trilingual inscriptions (DPi), excavated in the area of the so-called Harem, Tehran National Museum, No. 2405 (cp. Schmitt 2009: 120; Photo: A. Nagel)

On Color, Materiality, and Surface in Persepolis

Our discussion on the blue paints and precious colorful materials attested at Persepolis invites us to investigate further aspects of color, materiality, and surface at Persepolis. The first issue we discuss will be the materiality of the limestones used for stone architectural/sculptural elements at the site. Two limestone quarries very close to the Takht were identified many years ago as the sources for the stone elements at Persepolis (Tilia 1968: 76). More recently, Zarehasi identified additional quarries in the area supplying materials for the architecture and relief sculptures (Zare 2004; Guidetti al. 2008). A systematical documentation in which specific buildings or on which elements of the buildings which of these materials is at this point still a desideratum. For our purposes here, this is an issue because scholars noted variations in color of local limestones from a light-colored to a dark hue at Achaemenid sites.

For Pasargadae, Boardman (1959: 217) and de Francovich (1966: 233-34) once argued that the mix of light and dark limestone used for architectural elements of Palace R and Palace S, were employed in a systematic fashion that reflected Ionian influence. Reviewing the material evidence, Nylander (1970: 142-43) concluded that (1) such systematic variation in color is only attested in selected contexts, and that (2) such accentuation by color contrasts might have been used for purely aesthetic considerations that may or may not have reflected input from a specific craft tradition (ibid.).²⁰⁶We must

²⁰⁶ Nylander 1970: 143 cites Palace P at Pasargadae, where the various stones were used in an “entirely unstructural way.” He therefore concludes that “What we find in Pasargadae is thus not a bichromatism evincing structural analysis and an accentuation of the constituting parts but a predominantly optical, atectonic play of contrasts, based, no doubt, on purely aesthetic considerations.” Tilia had argued that such would reflect a distinction between a purely decorative and structural use, in that the dark stones were used for “decorative elements” (Tilia 1968: 68), while the light-colored stones were used for all “constructive elements” (ibid.).

ask therefore, whether the bichromatism as apparent through the various inherent limestone characteristics, where it does exist at Pasargadae, was originally meant to be seen, or whether we just miss one element in the chain: would a final coating of paint have obscured these variations in the material? As seen above, the observations made by Herzfeld and Lerner revealed clear evidence of paint on the stone reliefs of the monuments at Pasargadae (see Chapter 4 and Appendix 2). So far, the evidence for polychromy on stone columns at Pasargadae is limited to remnants of painted plaster that once covered wooden columns.

Turning to Persepolis, Nylander made the important statement that such systematic bichromatism in stone deployment as *does* appear at Pasargadae (in selected places) is not evidenced at Persepolis at all (ibid. 143). By contrast, we have abundant evidence for added paint. I argue that it is important to systematically record the locations of the various limestones used at Persepolis. The ultimate goal of such systematic documentation could of course reveal any heretofore unacknowledged use of a systematic bichromatism on the Takht. Such a finding would be an exciting new discovery about modes of polychromy here. But I do not anticipate a reversal of our current understanding that the variegated colors did not occur for some consistently applied aesthetic reason intended to highlight the natural surface appearance of the stone as a material. Rather, I would argue that such systematic documentation might help us to understand other important issues involved in the material aspects of the stone. Some of these quarries may have yielded better blocks for massive scale entities, for instance, such as bull capitals. Particularly interesting to me is that various limestones might have

had different abilities to receive and hold pigments. This in turn would potentially provide useful information about the processes of stoneworking and stonepainting.²⁰⁷

Let us now contemplate the issue of material, surface, and polychromy in relation to two examples drawn from the portable courtly arts of the Achaemenid Persian Empire. We are accustomed to imagine the royal splendour of royal garments and rugs—now lost to us in their materiality for the most part (see, e.g. Vogelsang-Eastwood 2006). As I mentioned in Chapter 2, such items are all part of our understanding of polychromy in the empire. Less commonly considered, however, are the polychromatic aspects of sumptuous ivory and alabaster objects. Both of these luxury items might seem to us moderns as valuable for their inherent material characteristics. Both fine alabaster vessels from Egypt and furniture inlays of elephant ivory are prestigious features of the visual environment of the Persian court, which we, from our modern day perspective, think of as valuable for their natural appearance as well as expensive because of their exotic nature. Thinking about both of these commodities in relation to polychromy, however, enables us to consider them in a rather different way. The very material that these objects were made of may be only one crucial element signifying their value. It is now clear that these same materials acquired added value and meaning through the overlay of other materials.

Let us begin the review of evidence with an inscribed white calcite alabaster jar associated with the court of Darius I. This vessel, measuring 37 cm in height, bears the name and title of Darius I in Old Persian, Elamite, and Babylonian as well as in Egyptian hieroglyphs (Koren 2008). Unfortunately, the vessel lacks any specific find context. The entire exterior surface of the pot was originally painted in purple (**Figures 6.4-5**). This

²⁰⁷ The painting process at Achaemenid Persepolis is still too little understood to allow statements on how the pigments were applied onto the surface of the monuments. The issues I am discussing here about stone qualities will ultimately need to be coordinated with such investigations.

technique of application here mimics somewhat the technique that would have been used to apply paint to stone sculpture. By the same token, the molluscan pigment used here could also have been employed for textile dyeing (Koren pers. comm. June 16, 2010).²⁰⁸



Figure 6.4 Alabaster vessel with purple paint, Darius I, c. 486 BCE, Bible Lands Museum, Jerusalem, Inv. No. 1979 (Seipel 1997 vol. 2: 117).

Figure 6.5 Detail, A labaster vessel with purple paint, Darius I, c. 486 BCE, Bible Lands Museum, Jerusalem, Inv. No. 1979 (Seipel 1997 vol. 2: 117).

These alabaster vessels may have been used as containers for documents (Giron 1921: 144) or for cosmetics or ointments (Schmitt 2001: 191; Stolper and Westenholz 2002: 12-

²⁰⁸ This alabaster vessel is only one item of a significant corpus of similar alabaster vessels inscribed with the name of an Achaemenid king. Additional examples have been described by Stolper (1996: 167), Schmitt (2001), and Amiet (2010: 354). They include one bearing the name of Xerxes and another bearing the name of Artaxerxes, both from the Tomb of the satrap Mausolus of Caria. Other excavated examples of Darius, Xerxes, and Artaxerxes come from Susa (Curtis and Tallis 2005: 129 Nos. 140-5; c.p. Schmidt 1957: 86). Another example (Xerxes) comes from the temple precinct at Uruk in Mesopotamia; an Artaxerxes jar, a surface find, from the University of Michigan excavations at Sepphoris, Palestine (modern Israel), and another from an Achaemenid period burial in Orsk, southern Russia. Additional examples derive from the market, and were purchased in Baghdad, Aleppo, Egypt, and now recently Afghanistan (Schmitt 2001). A jar of Artaxerxes acquired in Egypt is now in Berlin. Black pigments have been noticed embedded in the cuneiform inscription (Posner 1936: 74).

3). Or perhaps they were never intended to contain anything, but rather were meant to stand on their own as precious objects whose ephemeral painted surfaces would have precluded much handling on any kind of day-to-day basis (Koren 2008: 391). In the opinion of the philologist Schmitt (2001: 192), they were all probably carved in Egypt.

Their wide distribution throughout the Achaemenid Persian Empire in the fifth and fourth centuries BCE, combined with the funerary or temple findspots of those with known provenience, and their royal-name inscriptions, suggests that they were gifts from the Achaemenid king to particularly worthy subjects (Schmidt 1957: 199). Work on the seals ratifying the Persepolis Fortification tablets has greatly increased our understanding of the meaning, cultural implications, and administrative roles of royally inscribed *seals* as tightly controlled courtly items given by the king (Root 1979: 118-122; Garrison 1991; Garrison and Root 2001: PFS 7*; Garrison and Root forthcoming a: PFS 11* and PFS 93*; Garrison in press: PFS 93*).²⁰⁹ In this respect, the inscribed alabaster jars are also similar to royally-inscribed Achaemenid phylai of precious metal (Gunter and Root 1998).

In light of all this and the report by Koren for the alabaster vessel of Darius I with its purple-painted exterior, the entire corpus of these alabaster items deserves to be examined closely for possible traces of pigment. It is probably not a coincidence that “royal” purple was the color coating the jar currently displayed in the Bible Lands Museum in Jerusalem. It is most interesting that a fragment of an alabaster vessel stand bearing the cartouche of the Egyptian king Amasis (Ahmose II), who ruled Egypt immediately before the conquest by Cambyses in 525 BCE, was excavated in the

²⁰⁹ Garrison and Henkelman are working on a synthetic study of all royal name seals of the Achaemenid Persian Empire now documented—particularly those documented in securely provenance archival contexts.

Treasury at Persepolis (Chicago, OIM A 23397: Schmidt 1957: 83 = pl. 47.3 and 48.5 = PT 4 1070). Schmidt (1957: 83) comments that "...the red stain noticed on the lowest hieroglyph may be the remnants of original pigments... We do not know whether the other hieroglyphs had been filled with blue pigment, traces of which were found on the object." This artifact, presumably booty from the first conquest of Egypt, creates a material link between a Late Period Egyptian tradition of royally-inscribed alabaster ware, apparently coated with pigment, and an Achaemenid court tradition building on that concept. On the evidence of the jar of Darius in the Bible Lands Museum, the Achaemenid vessels provide a crucial glimpse of the way the application of a *particular* color (purple) may have added special value to an item intimately connected to the persona of the king.

As with the alabaster vessels excavated at Susa and Persepolis, and in many places of the empire, so were precious ivories, excavated in a cache at Susa or in the Treasury of Persepolis, found with traces of paint and gilding (Amiet 1972: 168; Schmidt 1957: 71; Amiet 2010: 358-63).²¹⁰ In the case of ivories, there is an earlier tradition, especially attested for Neo-Assyrian contexts, that these were once coated with paint and gilding and inlaid with semi-precious stones. Examples were excavated at Nimrud (see, e.g., Mallowan 1966: 528 No. 441; and 560 illustrating a winged sphinx overlaid with gold with reddish stain beneath gold leaf). According to D. Collon, "the rarity of the material made ivories a highly prized commodity although, paradoxically, it seems that

²¹⁰ Furthermore, at Susa, ivory rosettes are attested, still retaining blue paint (Amiet 1972: 320).

they were often gilded so that the ivory would not have been visible; they were also coloured and some were fire-blackened, probably intentionally” (Collon 1995: 161).²¹¹



Figure 6.6 Lapis Lazuli Lion, probably Achaemenid Period, Iran (Hori and Ishida 1986: 15)



Figure 6.7 Egyptian blue Lion paw, in laid colours missing, Chicago, Oriental Institute, Museum (© Oriental Institute, Chicago, Photo: A. Nagel)

Figure 6.8 Limestone fragment of a lion paw with traces of blue paint, Chicago, Oriental Institute, Museum, Inv. No. 24117 (© Oriental Institute, Photo: A. Nagel)

²¹¹ On the ivories from Nimrud, see now also Herrmann, Laidlaw, and Coffey 2009. Out of one hundred ivories examined from the Byzantine World, ninety-five had some remaining color or gilding (Connor 1998).

CHAPTER 7

CONCLUDING REMARKS

Although not a comprehensive survey of ancient realities and modern approaches to the extent and role of polychromy in Achaemenid Persia, this dissertation has attempted to demonstrate that polychromy indeed played important roles in Achaemenid culture and society beyond their role as mere surface decorations. The significance of color went beyond bringing pleasure, or the enjoyment of shade and hue. The evidence discussed above not only leaves no doubt that polychromy was a constituent element of the monuments at Persepolis and Susa, but also shows that color was an important agent in the transmission of information. Psychological studies have stated that “pleasure in bright saturated colors was common to all periods and people” (Gage 1993: 208). The Achaemenid palatial environments were no exception to this rule. In a vast empire where multi-ethnicity was the order of the day, a visual program of imperial art, that used color as a feature of meaning would have increased the ability of the king to convey imperial messages of magnificence and wonderment.

The polychromy of Achaemenid Persia is complex, and there are no easy answers to many questions regarding the preparation, use, and meaning of the pigments used. Until very recently, modern scholars have not considered the notion that polychromy played a truly substantial role among the craft’s that generated the physical appearance of Achaemenid sculpture.²¹² Similarly, the potential role of polychromy as a shaper of

²¹² See, e.g., Farkas 1974, who does not mention color at all in her discussion of the stylistic and formal backdrop of Achaemenid sculpture. Roaf’s important work (1983) on sculptural process in Persepolis is also lacking in attention to the issues of applied color and attachments.

meaning in the imperial environment has not been considered.²¹³ The data and interpretation brought together in this dissertation now enable us to consider Achaemenid art in new ways.

If we take examples like the different color schemes employed for the doors of the facades of the Tomb of Darius at Naqsh-e Rostam and the Tomb of one of his predecessors above the Persepolis platform, alternative readings can be suggested, in which color marked a remarkable degree of diversity. For the façade of the tomb of Darius I at Naqsh-e Rostam, the blue that filled in and also framed the inscriptions certainly helped to make the forms legible as magnificent writing to viewers looking at them high above their heads. On a microscopic level, the surface coatings on exterior facades like the Apadana reliefs and monuments like the stone bulls on the portico of the Hall of 100 Columns may have additionally protected the stone from weathering.²¹⁴

The polychromy of Achaemenid Persepolis has two main characteristics:

1. the colors employed formed clear contrasts with their environments, and
2. within the Achaemenid palaces there was a system of cross-references between precious stones and painted applications. Blue painted bull column capitals

²¹³ E.g., Root 1979, whose project actually to define a concept of Achaemenid art *as* a program focused on representational iconography. The possibility of polychromy as a key element in such a program did not enter in. Root's work was resisting a typical view of Achaemenid art as repetitive and meant to serve only as blunt instrument of imperial propaganda. As late as 1988, Calmeyer argued, for instance, that it is repetition that defines Achaemenid iconography *per se*. There has been a steep learning curve on dealing with issues of program for Achaemenid art.

²¹⁴ Its once thick application may have been the reason why so many of the sculptures at Persepolis are so well preserved, today. One open question remains, however, how structures like the two outdoor monumental bull sculptures would have been protected originally from bird's ordure and other elements like the changing weather conditions on the terrace platform. In contemporary Greece the practice is well known (though not well studied), that rods on the summit of the cranium, so called *meniskoi* would have sufficed to keep birds away: Ridgway 1990, 200-201 with examples from Attika. See also the metopes in Olympia, temple pediments at Korfu, and the still valuable article by Petersen 1889. Ridgway 1990 argues, however, that they may have also been originally meant to support stars as ornaments.

referred to precious lapis, and painted plaster applied to wooden columns may have been intended to imitate expensive stone columns. The very colors of the stone, though, were hidden and remained largely invisible. Research indicates that the elaborate polychromy was employed to imitate precious stones.

Suggestions for Future Directions of Research: The search for authenticity: Too many tasks, too few or too many pigments?

A more thorough investigation of the surfaces of the stone monuments on the Takht opens up many possibilities to understand ancient Near Eastern arts from a multitude of new perspectives. There is a great potential for comparing the polychromy of Achaemenid Persia with that of later cultures. Polychromy played an important role in the Parthian and Sassanian empires: in the palace of Ardeshir (222-240 CE) at Qal-e Dukhtar, at Firuzabad, and in the palaces of Bishapur traces of paint have been documented. D. Huff, for instance, has noted at Qal-e Dukhtar large sections of Egyptianizing leaf friezes with traces of red paint that imitate leaf friezes at Persepolis (Huff and Gignoux 1978: 134-5 n. 36; cp. Kröger 1982).²¹⁵ Excavations at the site of Nisa in modern Turkmenistan have yielded an abundance of evidence for the polychromy of both the architecture and sculpture (Pilipko 2002; Lippolis 2009). In Hatra (Iraq), a limestone stele depicting the god Nergal preserves a bundant pigments (Downey 1977; Dirven 2005: 123 Fig. 3; Dirven 2009). While the materials employed have been less studied on these later monuments, a new generation of scholars is assuming responsibility for documenting the pigments and is learning more about the paint techniques at these

²¹⁵ It would be important to document traces of paint on the colossal statue of Shapur: Ghirshman 1948.

sites. There is a clear awareness of the achievements of past civilizations in the region, and interest in disseminate that knowledge using advanced technologies to identify ancient pigments.

As early as 1818, Quatremère de Quincy argued that “people in general, ... foreign to the essence, science and practice of art, want to be captured through the eye, and are often put off by incomplete works.”²¹⁶ Reconstructions, incomplete works, however, have the potential to be misleading. This is also true for color reconstructions, whether on paper, virtual, or in the round.²¹⁷ Drawings made in the field may seem irrelevant once a traveler returns home and files them in the office. The watercolor by Herzfeld of a relief depicting the figure in the winged disk discussed above is a case in point. Moreover, interpretations have not always been consistent. Different observers saw different colors on the very same sculpted architectural elements at different times. The disagreement about the colors to be observed on the shoes of those depicted on the doorjambs of the Central Building proves that only a detailed examination of the extant remains themselves (including photography and measurements) can stand the test of time. Interpretations have not always been straightforward;

Taken as experiments rather than as definitive *evidence*, the process of restoring colors, even if only through physical and digital means can help us to address a number of puzzling questions. But striking a balance between the demands of conservation and the interests of the public to experience a restored whole is a difficult challenge.

²¹⁶ Quatremère de Quincy, A. 1818. *Lettres écrites de Londres à Rome et adressées à M. Canova sur les Marbres d’Elgin à Athènes*. Letter 4. Paris: 87. Here quoted from Rossi Pinelli 1996: 296.

²¹⁷ When in 2002 the Sistine chapel in Rome was re-opened after restorations that had removed dirt over the decades, people were rather irritated and shocked of the bare bright colors. It leaves the question whether there should be time when we *can* repaint old masterpieces. Another example: The exterior colors of the domes of the St. Basil’s cathedral in Moscow, finished in 2006.

Naturally, there are more issues that need to be taken into account when working on the colors on the monuments. On many free-standing monuments lichens, algae, and bacteria will continue to cause major damage to stone surfaces. Preserving and restoring aspects of the polychromy of Persepolis is a complex task in which a number of professionals with different educational backgrounds and professional experience must collaborate. Conservators, restorers, architectural historians, archaeologists, and natural scientists alike are important for such diagnostic studies. Multidisciplinary collaboration in investigating pigments and coloration is challenging, to be sure, with much potential for difficulties of communication on evaluation and interpretation once data have been retrieved (Braenne 2009; Breghoi and Christensen 2009; Vandenabeele et al. 2009). Caring for the pigments in museums and in more stable environments is also challenging. Today, departments of conservation have become increasingly important for assessing and addressing these challenges (Pye 2001; Keene 1999). Restoration should be avoided until conservators fully understand the full array of factors affecting their preservation and decay. Cleaning of ancient stone sculptures and architecture has often resulted in controversy.²¹⁸ Increasing attention has to be given to research, climate control in museums, as well as to the theory and history of archaeological conservation and stone consolidation (e.g., Fassina 2000; Rodrigues and Mirroso 2008; Senehlage 2008). In particular, the documentation and conservation of pigments on limestone monuments such as preserved at Persepolis is a very sensitive issue (e.g., Zehnder et al. 2000).

²¹⁸ The reliefs from the temple of Athena Parthenos in Athens that became part of the British Museum's collection of ancient Greece have been heavily cleaned with destruction of much of the surface in the first part of the twentieth centuries. The same happened on monuments in Athens itself in the Hephaestion (Jenkins 2001). The controversies around cleaning methods and techniques have been ongoing for many decades in western conservation practice (Carras 1972; Bomford and Leonard 2004).

As difficult as it is, documentation with ever evolving developed equipment and facilities, new techniques like portable equipment and perhaps even a pigment and paint laboratory at Persepolis will enable us to appreciate the past as it really was: not always bright, but surely colorful. In addition, polychromy needs to be promoted in the academic world, too. The question that follows is how can we preserve the existing polychromy? How can we educate future generations to not forget about such evidence?

The preamble of the *Code of Professional Standards* of the Archaeological Institute of America states that archaeologists “should work actively to preserve the archaeological record in all its dimensions and for the long term.”²¹⁹ Why not include the architectural surface in this regard? The existing literature on Persepolis and its sculptures in museums deals little with the concepts behind restoration and with the techniques used in the last two hundred years. This is, again, in no way exceptional and there are multiple reasons for it (Marijnissen 1996).

There is a need to write a history of restoration of the monuments of Takht-e Jamshid. Much like it has been suggested to have a *Corpus Restaurationum* for works of art in general (Marijnissen 1996: 275), recent efforts into this very direction signal awareness. Conservation and care has always been attempted in Persepolis, in the first two hundred years and in the last two hundred years, and documenting the history of conservation is part of investigating the polychromy there—a crucial agenda for the new era.

Recent years have seen an increasing interest in modern architecture and in its assimilation and adaptations from Achaemenid architecture (e.g., Curtis 2005; Grigor 2005a, 2005b, 2009). Many palaces of nineteenth century Persia have in one way or

²¹⁹ Website: www.archaeological.org

another imitated or echoed the monuments of Susa and Persepolis. The nineteenth century Afifabad or the Narenjestan Palace in Shiraz, and later in the twentieth century the first National Bank (**Figure 7.1**), and the Mausoleum of the Iranian Ferdawsī in Tuš (**Figure 7.2**) are excellent examples. While many of their forms are conscious echoes of the Achaemenid past, their colorless surfaces betray the power of western chromophobia transferred to Iran and to its own imagining of ancient heritage. We have come full circle here when we realize that the architects of Ferdawsī's chromophobic mausoleum were none other than Ernst Herzfeld and André Godard (e.g., Grigor 2005 b: 145-246; 2009: 277).

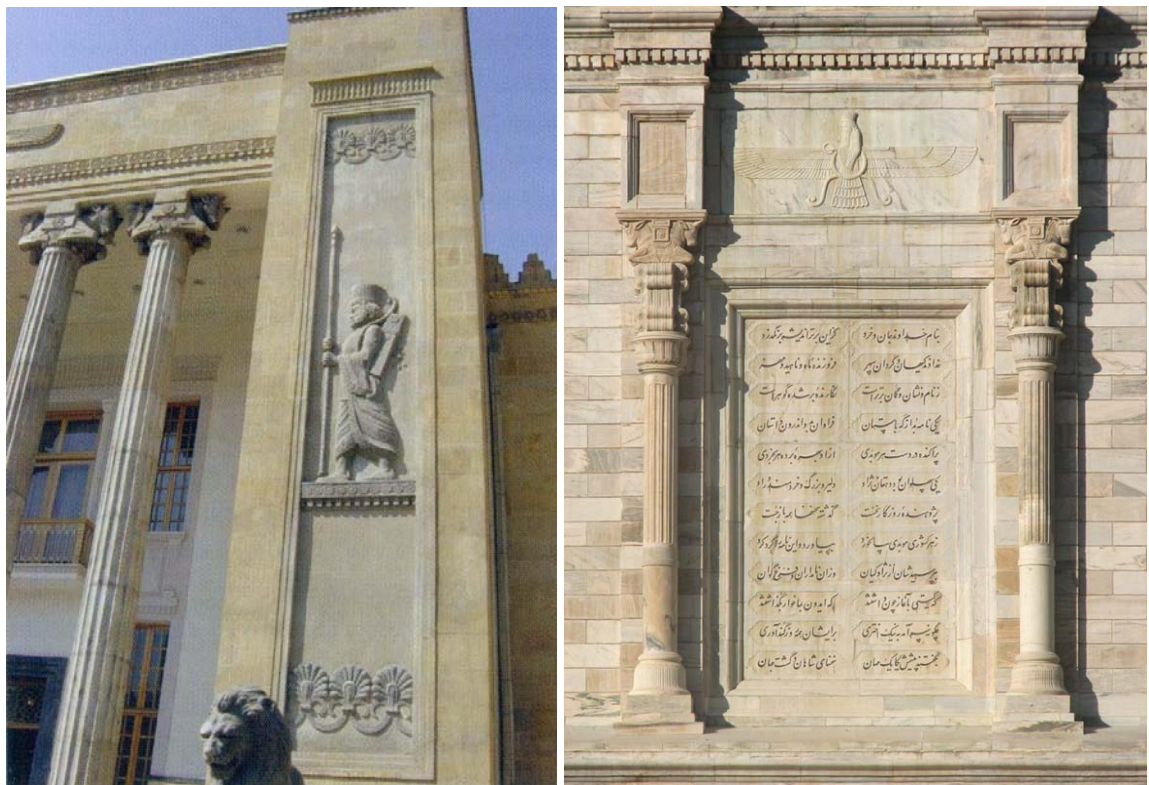


Figure 7.1 National Bank of Iran (Bank-e Melli-e Iran), Tehran, Detail (on-line: www.trekearth.com/gallery/Middle_East/Iran/East/Tehran/Tehran/photo708063.htm)

Figure 7.2 Ferdawsī Monument, Tuš, designed by E. Herzfeld and A. Godard, finished in 1936, Detail (on-line: <http://historicaliran.blogspot.com/>)

An Archaeology of Paint at Persepolis

Archaeologists, their attitudes culturally determined, decide which path of interpretation they chose, by what approach the past is best envisioned. They develop strategies and introduce transitions and ideas. In short, they are responsible for how the past is best reconstructed. At Achaemenid Persia, surface colors were often excluded and not part of the biography of the monuments that have been excavated.

Achaemenid Persian architectural sculpture is rich in vestigial traces of original polychromy. The stone reliefs from the site of Persepolis, as well as the carved façades of the tombs of the Achaemenid rulers above the Persepolis platform and on Naqsh-e-Rustam, preserve traces of original polychromy to a remarkable degree. While we lack proper documentation for many decades of past research and even for the more recent treatment of the stone surface, the size of the terrace alone, suggests there is still a great chance that pigments and color schemes can be identified and properly recorded and analysed. Once, there is sensitivity and awareness of polychromy, necessary steps will be undertaken to document the remaining paints. Proper documentation and conservation will ideally go hand in hand, as difficult as the integration of scientific techniques into the archaeological interpretation sometimes is (e.g., Pollard and Bray 2007; Agnew and Bridgland 2006).

Perhaps the greatest potential in the study of Achaemenid Persian polychromy is with the monumental tomb façades. Nearly inaccessible due to their position high above the ground, the carved and sculpted relief facades of the tombs of the Achaemenid rulers are also ideal candidates for examining and discussing their once-existent polychromy.

Working towards revealing the layers of an archaeology of paint in Persepolis is exciting. Paint archaeology is a relatively new field that presents its own complexities, but continuing to document and discussing the evidence available for the polychromies of Persepolis and Susa is a first step toward appreciating aspects of material culture employed in the Achaemenid court environment. So *why* does the world need studies of the pigments of Persepolis? Because the pigments are a physical testament to ancient knowledge in art, chemistry, optics, and perception, and taken together provide unique insights into the world of this empire.

Looking back from the vantage point of the early third millennium CE, we can understand the excitement of Charles Texier, of Jane Dieulafoy, of Ernst Herzfeld, and everyone else of the late nineteenth and early twentieth centuries who spotted traces of paint and polychromy in the Achaemenid materials while excavating on the sites. Mistakes were made; documents were lost; material was *whitewashed*. When we begin to analyze and investigate the surface of the monuments in Persepolis, uncovering paint layers and, making cross-sections, it might at first be difficult to understand the historical consequences. In order to fully understand Achaemenid painting and polychromy, however, it is crucial to study how the paints and surface treatments were made and applied, and how they deteriorated over time. This knowledge should become a fully integrated part of research in the archaeology of Persepolis. I think it is time to scavenge, fly back, and fast forward Achaemenid archaeology, this time in color.



Figure 7.3 Caution: Wet Paint!

APPENDIX 1

CATALOGUE OF SELECTED RELIEF FRAGMENTS FROM PERSEPOLIS IN NON-IRANIAN MUSEUM COLLECTIONS

Appendix 1 represents an interim step toward two interconnected objectives: (1) the tabulation of all fragments of stone elements from Persepolis currently held outside Iran and (2) the registration of data on polychromy that can be gleaned from targeted examination of the m. First, it provides a listing (with fuller catalogue information as possible) of all limestone reliefs and their fragments from the monuments of Persepolis known to me to date in non-Iranian museum collections.

The large number of reliefs or fragments thereof that are housed today in collections outside Iran provide an important tool for visual examination and subsequent materials analysis (where visual examination suggests its utility) in the project of detecting and documenting further evidence of the colors and pigments of Persepolis. This is a work-in-progress. The list is limited for now to fragments of relief sculpture. Although I continue to compile records of other architectural material and of free-standing sculpture, these data are not included here,

The listing itself (limited as it is to reliefs) is not exhaustive, although this, to be sure, is a desired ultimate goal. In 1957, R. D. Barnett published a catalogue of reliefs from Persepolis in foreign collections. This important first step was followed up by L. Van den Berghe (1959, 152-53). Some thirty years later, M. Roaf began a campaign to make the list increasingly comprehensive (Roaf 1987). Earlier, while working at Persepolis, A. B. and G. Tilia compiled photographs of fragments from Persepolis in foreign museums. Copies of these photographs are kept in the Archives of the Museum of Persepolis in Iran and in the ISiAO (former ISMEO) excavation archives in the Museo Nazionale d'Arte Orientale "Giuseppe Tucci" in Rome. More recently, P. Briant has spear-headed a drive to build an up-to-date database of Achaemenid artifacts (including Persepolis fragments) that will be available on-line through a chemenet.com under the auspices of the Collège de France. Finally, L. Allen has been conducting research on the U.S. collections of Persepolis material.²²⁰ All of these resources have been consulted for Appendix 1. I have also been able to incorporate additional fragments, previously unpublished and unlisted, through an extended search in other archives. In particular, I have been able to uncover and make use of information on previously unpublished fragments in the Museum of Near Eastern Antiquities in Berlin (where acquisition records were destroyed in the aftermath of World War II). This documentation is preserved secondarily, I have discovered, in the Freer Gallery of Art and Arthur M. Sackler Gallery Archives, Smithsonian Institution, Washington, DC, Ernst Herzfeld Papers.

Beyond the list itself, I have tabulated here those fragments that I have so far been able to examine visually either with full apparatus or at minimum through magnifying glass. Entries marked with an * (asterisk) were examined with a digital microscope between 2007 and 2010, partly with further equipment (see Chapter 5). This effort is ongoing.

²²⁰ I thank Lindsay Allen for sharing with me the transcript of her unpublished paper (Allen 2009).

In some cases, the fragments listed here are well documented by now; their original locations on the monuments of Persepolis are firmly established. In many other cases this information is still to be determined. So too, the exact circumstances of the acquisition by the respective museum collections remains obscure or ambiguous, while in other cases it is without doubt.

The Oriental Institute Museum, University of Chicago, holds the largest collection of Persepolis antiquities outside Iran, derived through the partage agreement with Iran from the excavations sponsored and conducted between 1931 and 1939. This collection is, of course, most significant because of its connection to the excavations and their documentation. This material has not yet been completely catalogued by the Museum for dissemination; and Schmidt's 1953 publication does not include an appendix listing this material comprehensively or collating it with museum accession numbers. The great quantity of material has made such a project especially daunting, no doubt. Additional factors now sadly intervene.²²¹

At least forty relief fragments from Persepolis reached US collections through dealers (and, in some cases, also archaeologists) including Ernst Herzfeld, Dikran Kelekian (1868-1951), Hagop Keuvorkian (1872-1962), Joseph Brummer (1883-1947), Arthur Upham Pope (1881-1969), Ayoub Rabeenou Sassooun, Raphael Sora, and Paul Mallon (Allen 2009). Many of the relief fragments listed may reveal significant information on polychromy that we will not be able to glean in situ, since the fragments in museums have been less exposed to ongoing environmental damage. In other cases, modern treatments in good intentions in museums have further obscured evidence of polychromy.²²² The fragments are arranged according to cities in alphabetical order. The catalogue information (including dates) given here follow those given by the museum or by a scholarly publication cited, where applicable. They do not represent interpretive interventions by the author. If an entry in the catalogue is accompanied by n.a., the information was not available to me at that time.

BALTIMORE, WALTERS ART GALLERY, USA

***WAG 21.19 "Mede" walking up stairs carrying covered dish facing left**

Dimensions: H. 73cm

Building: n.a.

Acquisition: 1946

Bibliography: Kent Hill 1947, Fig. right; Schmandt-Besserat 1978: 54 no. 61.

Comments: No trace of polychromy detectable; surface of relief highly abraded

²²¹ Leaving aside the Persepolis Fortification tablets remaining on research loan to the Oriental Institute, 1,891 objects from Persepolis are recorded in the Oriental Institute. Some 564 of these are artifacts of some kind of stone (pers. comm. Helen McDonald, Registrar, 2007). In addition, a large number of objects that were supposed to arrive in the US sank en route, "presumably in the Arabian Sea" in 1942 (Schmidt 1957, vii). The inventory of that cargo is unknown as far as I have been able to ascertain so far. Due to ongoing litigation, the material from Persepolis in the Oriental Institute will be not included in this catalogue even in list form.

²²² The spread of the finds is in no way exceptional. More than 300 relief plates from a single palace of the Neo-Assyrian ruler Assurnasirpal II (883-859 BCE) once constructed for Kalhu, modern Nimrud in Iraq can be found all over world (Englund 2003). At present, there is no committee for the reunification of the reliefs from any of the Middle Eastern archaeological sites (cp. The British Committee for the Reunification of the Parthenon Marbles).

n.a. Gift-bearer walking up stairs carrying bowl facing left

Dimensions: n.a.

Building: n.a.

Acquisition: 1935 (through Baltimore Museum of Art)

Bibliography: Museum Quarterly January 1936; Kent Hill 1947, Fig. left.

Comments: Based on the available photographs, the surface of the relief is extremely abraded, chances are less than any traces of polychromy remain.

BASEL, SWITZERLAND

n.a. Head of a male

Collection Elie Borowski

Dimensions: H. 17cm, L. 42.5cm

Bibliography: Ghirshman 1961: 105 No. 629; Wehrli et al. 1962: 89 No. 316.

BERLIN, GERMANY

***VA 212 “Mede” (?) carrying tray (perhaps rather from Susa?)**

Dimensions: H. 49cm W. 44 cm T. 8cm

Building: n.a.

Acquired: 1885 (Collection Maimon)

Bibliography: Herzfeld 1920: 26 and pl. 16. 1; Sarre 1922: 14 -5, p late 2 8; Delitzsch, *Berliner Museen* 1930; Pijoan 1931: 463 Fig. 668; Roaf 1983: 149n.182 no.3 argues, based on observations on the stone, and because duck tray on tablet would be rather Susian than Persepolitan typical, that this one would be from Susa rather than Persepolis; cp. Muscarella 1992: 217-8 n. 13.

Comments: ARTAX-Analysis in December 2008 confirms that geological composition of the stone is different than that of two other reliefs. No traces of paint.

***VA 567 Fragment of column drum (unpublished)**

Dimensions: n.a.

Acquired: August 1886 through F.C. Andreas (1846-1930) from excavation in 1880s.

Bibliography: Crüsemann 2001: 77 (listed as 3 objects VA 565-7)

Comments: No traces of paint (April 2009).

***VA 2987 Spearmen with reed shields**

Dimensions: H. 59cm W. 52 cm T. 8cm

Building: Apadana, north stairway, upper portion of west wing

Acquisition: already missing from Persepolis in 1841 in Flandin and Coste visit; Jakob-Rost 1992 (entry by R.B. Wartke): 1899 acquired; Simpson 2007 agrees, acquired by James Simon who had it from a dealer Mihnan Sivadian; 1927 James Simon (lt. Crüsemann 2000: 238)

Bibliography: Sarre and Herzfeld 1910: 50-51, Fig. 17; Herzfeld 1920: 25-6 and pl. 16; Sarre 1922: 14f. Taf. 29; Pijoan 1931: 471 Fig. 681; Barnett 1957, 63; Meyer 1965, Fig. 180; Wartke 1991: 241-42 No. 188 with Fig.; Crüsemann 2000: 238; Simpson 2007a: 351.

Comments: Microscopy and ArtTAX 15-16 December 2008 - spear shows richer lead (white?) spectrum; Squeezes were taken at an early period VAG 407 (?); Cast exists in Copenhagen, Danish Art Academy: Kjerrman 2004: 427 (KG 972); legs with shoes and butt ends of their lances still in situ in Persepolis: see Schmidt 1953: 89 Delegation No. 19 „The Skudrians?"; (Relief mit Darstellung von zwei Kriegerern Thrakier?, = Delegation XIX) lower part still in situ - To be restored in Schmidt I, pl. 45A (acc. to Barnett 1957, 63).

***VA 8799 “Mede” carrying sheep**

Dimensions: H. 72 cm

Building: Palace of Xerxes, Stairway

Acquisition: 1927, from Paris, Bacri oder Barri (lt. Inventory)

Bibliography: Sarre 1929; Pijoan 1931: 468 Fig. 674; Meyer 1965: Abb. 178; Erdmann 1967, pl. I (“Mitteltreppe Palast des Xerxes”); Wartke in Jakob-Rost 1991: 240-42 No. 187 with Fig.

Comments: Microscopy and ARTAX 1 5-16 December 2008; highlights higher concentration of lead (white?) than elsewhere on the fragment.

***VA 15394 Fragment of walking Lion and Bull Frieze** (unpublished)

Dimensions: n.a.

Acquired together with 5 further objects from the Islamic Museum in 1980s.

Comments: No traces of paint (April 2009).

***VA 15395 Fragment with parts of a hand and inscription, two pieces joined** (unpublished)

Dimensions: H. 13 W. 23.7cm

Comments: Excavated in Persepolis in 1928 (Drawing in Freer Gallery Herzfeld Archives: Herzfeld Sketchbook 1923, p. 58). No traces of paint (April 2009).

***VA 15396 Fragment with Rosettes** (unpublished)

Dimensions: H. 13cm W. 13.3 cm

Comments: Excavated in Persepolis in 1928 (Drawing in Freer Gallery Herzfeld Archives: Herzfeld Sketchbook 1923, p. 58). No traces of paint (April 2009).

***VA 15397 Fragment with Rosette** (unpublished)

Dimensions: H. 14.4cm W. 13.8cm

Comments: No traces of paint (April 2009).

***VA 15398 Fragment of floral ornament** (unpublished)

Dimensions: H. 10.2cm W. 15.4cm

Comments: No traces of paint (April 2009).

***VA 15399 „Relief mit plastisch reliefiertem Perlstab, Palmettenverzierung, darunter Kannelur“** (unpublished)

Dimensions: H. 28cm W. 31cm

Comments: No traces of paint (April 2009).

BIRMINGHAM, CITY MUSEUM, UK

A. 3044-1982

Bibliography: Roaf 1987: 155.

BOMBAY, PRINCE OF WALES MUSEUM OF WESTERN INDIA, INDIA

F4 Two servants carrying tray and kid climbing up stairs; with rosettes above

486/5-465/4 BCE

Dimensions: H. 63 cm W. 57.5cm

Building: Palace of Xerxes, western staircase

Bibliography: Schmidt 1953: pl. 164A; Gropp 1970 with pl. 77. 1 and 2 (reconstructed in stairways).

BOSTON, MUSEUM OF FINE ARTS, USA

31.372 Servant carrying a covered bowl

Dimensions: H. 70.5cm

Building: Palace of Xerxes, western staircase

Bibliography: Coomaraswamy 1933: 22-5 with Fig.; Pope 1938 pl. 98; Barnett 1957: 64 No. 6, Fig. 4 (Palace of Darius, southern stairway); Terrace 1962 No. 53 with Fig. (Western stairway Palace Xerxes, southern flight); Schmandt-Besserat 1978: 55 No. 62 (Western stairway Palace Xerxes).

36.37 Lion attacking bull

358-338 BCE

Dimensions: W. 1.73m

Building: Palace H (=Palace of Artaxerxes III.) stairway façade; cp. Schmidt 1953, pl. 200A and pl. 203D, terrace Fig. 2 (=“5th century BCE”).

Acquisition: Permanent loan from Oriental Institute, Chicago

Bibliography: Edward 1962 No. 47 with Fig.

39.586 Median usher leading two persons

Dimensions: L. 44; W. 0.77cm

Building: Apadana, Northern stairway (NW façade) Delegation No. 13

Acquisition: Maria Antoinette Evans Fund, from Raphael Stora (1931)

Bibliography: Pijoan 1931: 464 Fig. 669; Pope 1938 pl. 99A (Detail); Barnett 1957: 64 (No. 1 USA); Terrace 1962 No. 48 and Fig.; Schmandt-Besserat 1978: 52-53 No. 60

Comments: to fit in Schmidt 1952, pl. 39A (first three figures far left; 5th figure would be London, BM 118869, acc. to Terrace 1962, however, this is “problematic”).

40.170.1 Head and upper part of Soldier

Dimensions: H. 0.53cm W. 46.5

Building: perhaps Palace of Xerxes, 486-64 BCE

Acquisition: Archibald Cary Coolidge Fund

Bibliography: Terrace 1962 No. 49; Schmandt-Besserat 1978: 16 No. 1

BROOKLYN (NY), MUSEUM OF ARTS, USA

65.195-(5435) Persian Spearman, Apadana, to the right

Dimensions: H. 26.6 W. 22.8 Th. 4.7cm

Building: Apadana, 486-64 BCE

Acquisition: Kervorkian Foundation in memory of Hagop Kervorkian

Bibliography: Schmandt-Besserat 1978: 17 No. 2

L. 54.3 Head of Lion

Dimensions: H. 22.6cm W. 25cm

Building: n.a.

Acquisition: n.a.

Bibliography: Schmandt-Besserat 1978: 58 No. 64 listed as loan by Robin Martin

BRUSSELS, MUSÉES ROYAUX D'ART ET D'HISTOIRE, BELGIUM

IR 103402986 “Mede” carrying bowl

Dimensions: 47 x 28cm

Building: probably from Palace of Darius or Palace of Xerxes

Bibliography: Goosens 1960; L' art iranien dans les collections belges. Exposition ... 10.11. bis 19.12.1971, Brussels 1971; Vermeersch and Duvosquel 1988: 85; Speyer 2006: 120 Fig. (entry by Bruno Overlaet)

Comments: Comparanda: Berlin VA 8799

CAMBRIDGE, FITZWILLIAM MUSEUM, UK

***E43.1927 Two bearded men in procession**

Dimensions: H 0.71 W. 0.42 Th. 0.12m

Building: Tripylon, North stairs, Time of Artaxerxes I. (Acc. To Roaf!, in any case)

later than Apadana), 465-424 BCE

Acquisition: 1927, by J. Pierpont Morgan, formerly collection A.G.B. Russell

Bibliography: Catalogue Sotheby 30th May 1927: 11 No. 60 pl. 7; Royal Academy of Arts, Catalogue of International Exhibition of Persian Art 1931, 2nd ed. 5 no. 2 and 3rd ed 7 no. 2; Pijoan 1931: 463 Fig. 667 (wrong caption referring to Oxford, Ashmolean Museum); Nichols and Roaf 1977.

Comments: Relief was extensively “restored” with hard dark-tinted plaster later removed (Nicholls and Roaf 1977: 146). No traces of paint remain.

CINCINNATI, ART MUSEUM, USA

CAM 1951.133 “Mede” carrying bowl to the left

CAM 1955.792 “Mede” carrying tray facing to right

CAM 1961.288 Persian guard facing right

Building: Tripylon

Bibliography: *Ancient art in American private collections. A loan exhibition at the Fogg Art Museum of Harvard University*, December 28, 1954-February 15, 1955. Arranged in honor of the 75th anniversary of the Archaeological Institute of America. Cambridge, Mass., 1954, No. 63, pl. XIX. Barnett 1957, 64.

CLEVELAND, OHIO, MUSEUM OF ART, USA

CMA43.279 Persian guard facing right

Dimensions: 53cm x 43.6cm

Building: Palace of Xerxes, 486-464 BCE

Acquisition: 1943 Purchase from the J. H. Wade Fund

Bibliography: Hollis 1953.

n.a. Another Persian guard facing to right, more worn than the other, but almost identical

COPENHAGEN, NY CARLSBERG GLYPTOTEK, DENMARK

ÆIN 1729 “Mede” carrying tray facing left, c. 500 BCE

Limestone, very polished (catalogue Moller: Black, bituminous limestone)

Dimensions: 58 x 33 cm

Building: Palace of Darius or Palace of Xerxes

Acquisition: 1958 (art market)

Bibliography: Poulsen 1960: 1-8 and Fig. 3; Moller 1995: 102-3 No. 75.

DAYTON ART INSTITUTE, OHIO, USA

67.60 n.a.

DETROIT, INSTITUTE OF ARTS, USA

31.340 Gift-bearer carrying tray facing right, rosettes above

Dimensions: 54.6 x 29.2cm

Building: Palace of Darius?

Acquisition: gift of Lilian Henkel Haass

Bibliography: Goldman 1974: pl. I Fig. 2; Peck 2005: 20 Fig. 1, and 23-4.

78.45 “Mede” carrying bowl facing left

Building: Palace of Darius, southern stairway, north wall, western inner flight (Bernard Goldman)

Dimensions: 29.2cm x 35.6cm

Bibliography: Peck 2005: 24-5 and Fig. 5.

78.47 Persian Spearman

Building: staircase balustrade, perhaps Tripylon?, Apadana?, Palace of Darius or Palace of Xerxes?

Dimensions: 16.4cm x 29.5cm

Bibliography: Peck 1973; Peck 2005: 27 Fig. 8.

79.31 Persian Official

Building: Palace of Darius, western stairway (= façade of Artaxerxes III.)

Dimensions: 65 x 56cm

Bibliography: Peck 2005: 27-28 and Fig. 12.

DUMBARTON OAKS, WASHINGTON DC, USA

DO31.1 Two servants carrying supplies (tray and probably two bowls), to the right

Dimensions: H. 37.5cm W 67.5cm

Building: Palace of Darius or Xerxes

Acquisition: Bliss collection, 1931 (through Sassoon and Stora)

Bibliography: Barnett 1957, 64; Richter 1981.

DO32.4 Servant carrying tray, to the left

Dimensions: H. 50cm W. 30cm

Building: Palace of Darius (?), southern stairway, eastern flight or Palace of Xerxes, western stairway

Acquisition: Bliss collection, 1932 (through Sassoon and Stora)

Bibliography: Barnett 1957, 64; Richter 1981: 1-3 and pls. 1. A and B.

EDINBURGH, ROYAL SCOTTISH MUSEUM, UK

1950.138 Part of this relief is BM London 118847

Dimensions: n.a.

Building: Apadana, Northern stairway, eastern wing

Acquisition: n.a.

Bibliography: Barnett 1957: 63 and pl. XVI.3

1887.566 n.a.

1887.567 n.a.

HARVARD, ARTHUR M. SACKLER MUSEUM (= CAMBRIDGE, MA.) USA

1943.1062 Figure in winged disk facing right

Dimensions: H. 0.73cm

Building: Hall of 100 Columns, southern doorways, eastern doorway, western jamb

Bibliography: Pijoan 1931: 467 Fig. 673 (then still coll. Brummer, NY); Pope Survey pl. 96C; Schroeder 1943: 44; Barnett 1957, 64 No. 7 with references (probably from Palace of Darius); Terrace 1962, No. 51 with Fig. (probably from Throne Hall); Lerner 1971 and 1973; Tilia 1978.

1943.1063 Head of Persian guardsman facing right, broken/cut on left side, from ?

Bibliography: Pope pl. 96 (incorrectly as British Museum); Terrace 1962 No. 50 with Fig.

n.a. Head, heavily worn of guardsman to the left

1943.1065 "Mede" carrying a kid

Dimensions: H. 0.66cm

Building: Palace of Darius, southern stairway?

Bibliography: Pijoan 1931: 468 Fig. 675 (then coll. Brummer NY); Pope 1938 pl. 97; Barnett 1957, 64 No. 8; Terrace 1962 No. 54

1943.1066 “Mede” bearing two bowls

Dimensions: n.a.

Building: Palace of Darius, southern stairway

Bibliography: Terrace 1962, No. 52;

n.a. “Mede” bearing dish to the left

n.a. “Mede” bearing bowl to the left

Bibliography: Pope, 1938 pl. 96 and 97

JERUSALEM, BIBLE LANDS MUSEUM, ISRAEL

BLMJ1046 Head of Persian servant carrying, animal skin contained wine for royal table, headdress typical bashlyk, to be distinguished from Median bashlyk

Dimensions: H. 18cm W. 35.5cm TH. 9.5cm

Building: Palace of Darius or Palace of Xerxes

Bibliography: Muscarella 1981: 207 No. 167; Seipel 1997: v. 2: 115 No. 162

KANSAS, CITY, W. ROCKHILL NELSON-ATKINS GALLERY OF ART, USA

n.a. **n.a.**

Bibliography: Wilber 1950a: 343-5 with fig; Van den Berghe 1959: 153.

Acquisition: 1933 through Brummer in 1931 (New York)²²³

KARLSRUHE, GERMANY

81.128 “Mede” carrying a bowl climbing up to the right, upper part: leaves

Dimensions: H. 75cm W. 33cm

Bibliography: Anonymous, „Zum Gabenbringerrelief aus Persepolis,“ *Badisches Landesmuseum Karlsruhe, Informationen* 5, Sept/Okt 1981, 2, 2 Abb; Spyer 2006 202 with Fig.

LONDON, BRITISH MUSEUM, UK

92253 Head of Persian

Building: Apadana, North stairway, probably south face of inner or outer flight

Dimensions: H. 13cm W. 12cm

Acquisition: purchased from Rollin and Feuardent, Paris in 1895

Bibliography: Barnett 1957, No. 11; Mitchell 2000, 53, Curtis and Tallis 2005: 72 No. 31.

118837 Persian soldier facing right with shield and spear; once broken but fitted

Dimensions: H. 90cm W. 60cm

Building: Apadana, North stairway

Acquisition: Persepolis in 1811, to Museum by Ouseley in 1825

Bibliography: Ouseley 1821, pl. XLVI, Barnett 1957, No. 13, pl. XX 3; Barnett, earliest representations of Persians in Pope and Ackerman vol. XIV, 1967: 3005 Fig. 1066 (mentioned as 11883); Mitchell 2000 pl. XXIIId; Curtis and Tallis 2005: 72 No. 30

²²³ Allen 2009.

Comment: traces of paint (?) in eye (November 2008)

118838 Four so-called Susian guards facing right (identical 118856)

Dimensions: H. 60cm W. 107cm

Building: Apadana, North stairway, Eastern wing, left end, upper register

Acquisition: Persepolis in 1811, to Museum by Ouseley in 1825

Bibliography: Ouseley 1821, pl. XLVI; Pijoan 1931: 471 Fig. 680 (wrong image caption, Museum Berlin); Barnett 1957, No. 3, pls. XV 2 and XVII.2; Curtis 2000: 44 Fig. 48; Curtis 2000, 50 Fig. 50, Mitchell 2000 pl. XXIIc; Curtis and Tallis 2005: 73 No. 33.

118839 Two "Medes" facing right, carrying saddlecloth and horsewhips as equipment for royal chariot

Dimensions: H. 32cm W. 75cm

Building: Apadana, North stairway, Eastern wing

Acquisition: Persepolis in 1811, to Museum by Ouseley in 1825

Bibliography: Ouseley 1821, pl. XLVI, Barnett 1957, No. 1, pls. XV 1 and XVIII.2; Curtis 2000: 47 Fig. 53; Curtis 2000, 51 Fig. 53, Mitchell 2000 pl. XXIIe; Curtis and Tallis 2005: 69 No. 23; perhaps: Curtis 1998.

118840 and 41 Two parts of cuneiform inscriptions with part of cypress tree

Dimensions: H. 35cm W. 61 and 80 cm

Building: Apadana, Northern stairway

Acquisition: Persepolis in 1811, to Museum by Ouseley in 1825

Bibliography: Ouseley 1821, pl. XLVI; Mitchell 2000 49-52; Curtis and Tallis 2005: 75 No. 37.

118842 Soldier bringing horse facing right

Dimensions:

Building: Apadana, North stairway, Eastern wing

Acquisition: Presented to Museum by Earl of Aberdeen

118843 Charioteer with horses; was broken once and fitted, achtung koennte farbreste an taille des charioteer sein(Horse heads in Miho Museum, Japan!),

Dimensions: H. 56cm W. 88cm

Building: Apadana, North stairway, Eastern wing, top register

Acquisition: Persepolis in 1811, to Museum by Ouseley in 1817; something with Aberdeen

Bibliography: Ouseley 1821, pl. XLV, Barnett 1957, No. 7, pls. XV 3 and XVIII.1; Curtis 1998; Mitchell 2000; Curtis and Tallis 2005: 70 No. 25.

118844 Two soldiers (one on each face)

Dimensions: H. 58cm W. 33cm Th. 21.5cm

Building: Apadana, cornerstone from possibly northwest staircase

Acquisition: Persepolis in 1811, to Museum in 1818; something with Aberdeen

Bibliography: Barnett 1957, No. 21, pls. X.2 (from Palace H?, probably from the newel of a staircase); Mitchell 2000 pl. XXId; Curtis and Tallis 2005: 71 No. 27

118845 Top part of Persian guard, with rosettes on top; traces of blue paint on the background of the relief?

Dimensions: H. 58cm W. 42cm (33cm)

Building: Apadana, North side, northwestern staircase, south side

Acquisition: Persepolis in 1811, to Museum in 1818

Bibliography: Herzfeld 1920: 25-6 and pl. 16 (as cast in Berlin VAG 37); Pijoan 1931: 474 Fig. 684 (cast in Berlin); Barnett 1957, No. 4, pl. XX.4 (from Palace H?); Curtis 2000: 44 Fig. 47; Mitchell 2000 pl. XXIIb; Curtis 2000, 50 Fig. 51; Curtis and Tallis 2005: 71 No. 28; Simpson 2009 (wrong stats).

118846 Fragments of rosettes

118847 Leg of stool (see Edinburgh, fragment of it)

Dimensions: H. 30.5 W. 7.6cm

Building: Apadana, North stairway, Eastern wing

Acquisition: Persepolis in 1811, to Museum in 1870

Bibliography: Barnett 1957, No. 2, pl. XVIII.2; Mitchell 2000, 53 Curtis and Tallis 2005: 69 No. 24.

118848 Top part of figure introducing royal chariots (Schmidt 1953, pl. 57, cf. pl. 52), the face is 19th century restoration in plaster, probably from 1865

Dimensions: H. 51cm W. 24.5cm

Building: Apadana, North stairway, Eastern wing, probably

Acquisition: presented to Museum in 1861 by 5th earl of Aberdeen

Bibliography: Barnett 1957 No. 5, pl. XV.2; Mitchell 2000, 52 pl. XXIIa; Curtis and Tallis 2005: 68-9, No. 22

118849 Curls from animal

Building: Gate of all Lands

118850 Piece of baldachin showing feet of lions moving left

118851 Part of horse and chariot

Dimensions: H. 17.5cm W. 18cm

Building: Apadana, North stairway, Eastern wing, top row

Acquisition: Persepolis in 1811, to Museum in 1861

Bibliography: Barnett 1957, No.8; Mitchell 2000; Ambers and Simpson 2005: 6-7; Curtis and Tallis 2005: 71 No. 26.

118852 Inscription from architectural piece

Building: Palace of Darius, Window frame

Bibliography: Mitchell 2000, 52; Simpson 2007a, 343 with traces of dark material, brushed into by Niebuhr when he visited the site; removed from Persepolis in 1811 by Robert Gordon, given to museum in 1861

118855 "Mede" carrying bowl

Dimensions: H. 30cm W. 30cm

Building: Palace of Darius, southern stairway eastern flight or Palace Xerxes east or west stairs

Acquisition: Persepolis in 1811 by Ouseley, presented to Museum in 1861

Bibliography: Ouseley 1821, pl. XLV, Barnett 1957, no. 18 pl. XIX.2; Mitchell 2000, 50 and 52 pl. XXc; Curtis and Tallis 2005, 157 No. 198

118856 Fragment showing so-called Susian guard

118857 Thracians or Scudrians, Bearded man fragment

Dimensions: H. 28cm W. 37.3cm

Building: Apadana, North stairway, part of Delegation 19

Acquisition: Persepolis in 1811, to Museum in 1861

Bibliography: Ouseley 1821, pl. XLV; Barnett 1957, No. 15, pls. XVI 1; Mitchell 2000 pl. XXe; Curtis and Tallis 2005, 75 No. 36

118858 Soldier facing left; Carving of eye is suspicious

118864 Persian, bearded with staff in left hand, right folded over left wrist, facing left; cp. Schmidt 1953, pl. 25B-C; once broken but fitted

Building: Apadana, north stairway

Bibliography: Barnett 1957 No. 20, pl. XXI No. 3 (from Palace H?); Mitchell 2000, pl. XXIa; Curtis and Tallis 2005, 68 No. 21 (excellent photo)

118865 Soldiers with spear and shield, heads erased

Building: Apadana, parapet, eastern stairway

118866 Persian guard

Dimensions: H. 35cm W. 26cm

Building: Apadana, North stairway, inner flight, probably north or northwestern flight of northern staircase (Schmidt 1953 pl. 55/6)

Acquisition: Persepolis in 1811, to Museum in 1861

Bibliography: Ouseley 1821, pl. XLV; Pijoan 1931: 474 Fig. 685 (cast in Berlin); Barnett 1957, No. 10, pls. XIX 1; Mitchell 2000 pl. XXII B; Curtis and Tallis 2005, 72 No. 29.

118868 “Mede” facing right carrying covered goblet walking up stairway

Dimensions: H. 75cm W. 40cm Th. 13cm

Building: Palace of Darius, south stairway, western flight or north wing of western staircase (2005) or from Palace G (Artaxerxes III)

Acquisition: from Rollin and Feuadent 1894 Paris

Bibliography: Barnett 1957, No. 17, pl. XXI.1; Curtis 2000: 47 Fig. 52; Curtis 2000, 53 Fig. 57, Curtis and Tallis 2005, 82 Fig. 40.

118869 Bactrians, cp. Boston, MFA: Terrace 1962 No. 48 - Bearded man facing left, acc. to museum label Babylonian leading camel of which only nose survives, 500-480 BCE, unfinished

Dimensions: H. 44cm W. 34cm Th. 14cm

Building: Apadana, North stairway, 13th delegation

Acquisition: purchased from Rollin and Feuadent in 1894

Bibliography: Pope 1938 pl. 96D; Barnett 1957, No. 9, pl. XVI 5; Mitchell 2000, 53, Curtis and Tallis 2005, 74 No. 35.

129381 Seating male sphinx

Dimensions: H. 82.1cm W. 75cm Th. 9cm

Building: originally façade G, constructed by Artaxerxes III., later transferred to north staircase of Palace H

Acquisition: discovered in 1826 by MacDonald; removed from site by John McNeill in 1828 in a difficult process (Letter to MacDonald: Curtis 2007: 158), presented to Museum in December 1937.

Bibliography: Alexander 1827: 140; Barnett 1957 62-3, pl. XXI. 4; Curtis 2000 Inside Front cover; Curtis 2000, 53 and Fig. 55; Ambers and Simpson 2005, 9-11; Speyer 2006, 114 Fig.; Curtis 2007: 157-8, figs. 143 and 146.

Comments: modern green pigment on earring from wall coating in gallery; cp. Other relief below with entire rim in green

134385 Guardsman, fragment

Dimensions: H. 16.30cm W. 27cm

Acquisition: “old collection”

Bibliography: Mitchell 2000, 54; Curtis and Tallis 2005, 85, No. 49.

Various further inscription fragments

136209 Bell-shaped column base, reign of Xerxes or Artaxerxes I.

Dimensions: H. 98.5CM, Diam. (base) 1.51m, (top) 0.96cm

Building: Hall of 100 Columns

Acquisition: Permanent loan from Chicago, OI, since 1974

Bibliography: Curtis and Tallis 2005: 60-61 No. 9

LOS ANGELES, LOS ANGELES COUNTY MUSEUM OF ART, USA

63.36.17 “Mede” carrying covered bowl, 486-465 BCE

Building: either from Palace of Xerxes (probably east wall of northern flight of southern stairway, or from eastern stairway), or from Palace of Darius (western or southern stairway)

Dimensions: 49.5 x 37.5 cm

Acquisition: from Coll. Carl Holmes, L. 2100.L.155-69

Bibliography: Kuwayama 1963: 12-4 and Fig. 1

71.73.25 **Royal Guard to the right**

Building: n.a.

Dimensions: L. 19.3 cm

Acquisition: Phil Berg Collection

Bibliography: on-line

LYONS, MUSÉE DES BEAUX-ARTS, FRANCE

1701 **Head and shoulder of Persian carrying cloth-covered tray to right**

Dimensions: H: 55x8cm; different measures given in 1998: H. 43 L. 30 W. 10.5

Building: Palace of Darius or Palace of Xerxes

Acquisition: through Parisian antiquities dealer in 1932

Bibliography: Pope 1938, pl. 96B; Barnett 1957, 63; as cast exhibited in Louvre, Paris 1998: Anonymous 1998: 233 No. 102 (Michel Maupoix)

NEW HAVEN, YALE, UNIVERSITY ART GALLERY, USA

1933.10 **n.a.**

Building: Palace of Darius, West stairs

Dimensions:

Acquisition: Associates in Fine Arts with Ada Small Moore in 1933

Bibliography: Allen 2009.

NEW YORK, METROPOLITAN MUSEUM OF ART, USA

34.158 Procession: Two servants bearing food and drink, Period of Artaxerxes III; 358–338 B.C.

Dimensions: H. 86.5 cm

Acquisition: Harris Brisbane Dick Fund, 1934 (34.158)

Building: form of skin container and the size and style of the figures suggest that the relief derives from the time of Artaxerxes III (r. 358–338 B.C.) and adorned either the restored Palace of Darius or that called Palace H.

Bibliography: Dimand 1934; Dimand 1935; Dimand 1950.

39.133 Figures holding hand in Procession

Building: Palace of Darius, Western Stairway Façade, but during reign of Artaxerxes II., 405-360 BCE

45.11.17 **Relief fragment of shoe with graffiti of human and animal heads**

Dimensions: 8.26 x 15.24cm

Acquisition: Rogers Fund 1945 (broken off from doorjamb of Palace of Darius by Herzfeld, December 4, 1923), presented as gift to MMA in 1943

Bibliography: Herzfeld 1936 (Schweich lectures) 73-74, pl. 10 (after graffiti executed the shoe was covered with "purple paint"); Herzfeld 1941: 251 pl. 72; Schmandt-Besserat 1978: 106 No. 141; Dusinberre 2005: 145-46 and 168 Fig. 5 and Herzfeld, Diary N-84, 34.

55.121.3 **Head of Persian guard "from one of the palaces"**

Acquisition: Joseph Pulitzer Bequest 1955

OXFORD, ASHMOLEAN MUSEUM, UK

Ash. 1982.944 n.a.

PARIS, CABINET DES MÉDAILLES, FRANCE

n.a. Fragments with cuneiform inscriptions of two figures

Building: Palace of Darius

Acquisition: broken off from Persepolis in 1718 by Cornelius de Bruijn

Bibliography: Benveniste 1951; Shahbazi 1985; Shahbazi 200, 145.

PARIS, MUSÉE DU LOUVRE, FRANCE

AO 14050 "Mede" carrying goat climbing up staircase facing left

Dimensions: H. 75cm W. 38cm

Building: probably Palace G, Artaxerxes III

Bibliography: Contenau 1934, 99-103; Contenau 1947, 2260 Fig. 1282; Curtis and Tallis 2005, 84, No. 47 (also on-line info by Louvre)

AO 14051 Two Persian guards

Dimensions: H. 70 cm W. 50cm

Building: Apadana, compare east staircase, western façade of northern parapet of inner landing (Schmidt 1953, 82-3; pl. 26A-B) -

Bibliography: Contenau 1934, 99-103; Contenau 1947, 2264 Fig. 1287; Curtis and Tallis 2005, 73 No. 32

AO 17278 "Mede" facing right, perhaps reign of Artaxerxes I

Dimensions: H. 22.2cm W. 24cm

Building: Tripylon, North façade

Acquisition: 1933 (Roaf and Nicholls 1977, 146n. 31)

Bibliography: Contenau 1947, 2265 Fig. 1288; Curtis and Tallis 2005: 83 No. 43; Cp. Contenau, G. "Deux Bas-reliefs achéménides," *Bulletin des Musées de France (Paris)*, 1931, 3-5; Ders. *Bulletin des Musées nationaux*, May 1931: 93; Ders. *Monuments Mesopotamiens nouvellement acquis ou peu connus*, Musée du Louvre, *Revue des Arts Asiatiques* 1934, pl. xiv and xv.

Comments: cp. Schmidt 1953, 107-11, pl. 72A-C.

PHILADELPHIA, UNIVERSITY MUSEUM, PENNSYLVANIA, USA

UMB 10301 Fragment of a Head

Dimensions:

Bibliography: Bache 1941: pl. XII.

Acquisition: gift to University in 1890s, via Istanbul "presented to the third Nippur Expedition by Hamdy Bey"

PRINCETON, UNIVERSITY ART MUSEUM, USA

1949.115 "Mede" carrying two open vessels to the left

Dimensions: H. 58.5 cm. W. 28.5 cm.

Building: Palace of Xerxes, 486 - 465 B.C.

Acquisition: Museum purchase with funds given by Gordon McCormick, Class of 1917

Bibliography: Wilber 1950: 2-3 Fig.

SEATTLE, ART MUSEUM, WASHINGTON, USA

40.49 "Mede" carrying tray to the left, c. 500 BCE

Dimensions: 52.07 x 37.47 cm H. 77cm

Acquisition: Gift of friends of Winlock Miller, Jr., in appreciation of his civic service, 1931-1939.

Bibliography: Barnett 1957, 63.

65.137 **Head of Achaemenid prince or dignitary**, ca. 5th century BCE
Dimensions: 9.69 x 5.08 x 5.56 cm.
Acquisition: Eugene Fuller Memorial Collection, 1965.

n.a. **Fragment of lion procession frieze to the right on baldachin**
Dimensions: H. 45cm
Building: Hall of 100 columns; Southern or Northern doorways
Bibliography: Seattle Art Museum Handbook 1951: 14; Seattle Art Museum Guild, Engagement Calendar 1953: no. 13; *Mostra d'Arte Iranica*, Cat. 1956: 135, pl. XXVII (209); Barnett 1957: 64 No. 3 (USA); *Sept Mille* 1961, 105 No. 631
Acquisition: Gift of the late Mrs Donald E Frederick.

ST. LOUIS, CITY ART MUSEUM, MISSOURI, USA

n.a. **Servant carrying a kid to the right**
Bibliography: Roaf 1987: 156.

ST. PETERSBURG, STATE HERMITAGE MUSEUM, RUSSIA

19105 (S461) **Fragment of Persian warrior**
Dimensions: H. 22.3 W. 20.2
Building:
Acquisition: 1935 (Gift of Iranian Government)
Bibliography: Piotrovski, Adamova et al. 2004: 26-27 No. 3; Adamova 2007: 23 and 94 cat. No. 3.

**STOCKHOLM, MUSEUM OF MEDITERRANEAN AND NEAR EASTERN ANTIQUITIES =
MEDELHAVSMUSEET, SWEDEN**

MM1974:25 **n.a.**
Building: Tripylon, North Stairs

NM 2340 **Fragment of a guard**
Dimensions: H 16.7, W. 9.6
Building: Apadana, Eastern stairway
Acquisition: Gifts of Herzfeld to Gustav VI and Princess Louise in November 1934. Annotation with P.T. 2.513 means that it was excavated between 1932 and 1934.
Bibliography: HM Konung Gustaf VI Adolf Persisk Konst i sverige 1973 exhibition catalogue, p. 11, K 66 with Fig.; Roaf and Nichols 1977, 147 No. 31 with reference to Tilia 1972, 60; Adahl 1978: 56-9; Mousavi 2004: 467-8.

**TORONTO, ROYAL ONTARIO MUSEUM, CANADA
(partly ELIE BOROWSKI COLL.)**

951.122ROM2007_9150_1 **Relief sculpture with Persian Imperial Guardsman (fragment)**
Dimensions: H. 19cm W. 15.9 Th. 3.6 (depth)
Wirth Gallery of the Middle East
Exhibit History: Eye of the Beholder, ROM, 1987

n.a. **Fragment with curls of human head**
Dimensions: H. 10.3cm
Bibliography: Wilkinson, An Achaemenian bronze head, BMMA 15.3 (1956), 76 Fig.; Muscarella 1981: 208 No. 168.

VIENNA, KUNSTHISTORISCHES MUSEUM, AUSTRIA

Sem. 940 Bearded Guard

Dimensions: H. 28.7 W. 21.2cm Th. 8.5

Bibliography: Komorzynski 1952: 5; Seipel 1997: 115 No. 163 and Fig.; Svenson 2009.

WORCESTER ART MUSEUM, MASSACHUSETTS, USA

1952.17 Procession of five Persian guards with shields and spears facing left

Dimensions: n.a.

Building: Apadana, Eastern stairway, 480-460 BCE

Bibliography: Anonymous. A fragment from Persepolis in Worcester. *Archaeology* 6, 1953, 23 with Fig.

ZURICH, UNIVERSITY, SWITZERLAND

1955.29 “Mede” carrying a bowl facing right

Dimensions: H. 86cm; L. 38cm.

Building: Palace of Darius, southern stairway, western flight –

Bibliography: Jucker 1955; Barnett 1957, 63 and pl. XXI.2; Schmidt 1953: pl. 132 B; Sept Mille 1961: 105 No. 628; Wehrli et al. 1962: 89 No. 315.

APPENDIX 2

BUILDINGS AND PIGMENTS IDENTIFIED ON THEM

Note: In order to deduce the original appearance of the architectural and sculptural elements at Persepolis, it is necessary to take samples from the surface. This allows to determine the structure and composition of the material components. Materials were removed from the surface of Persepolitan monuments already in the nineteenth century (see Chapter 3). Weld-Blundell's samples, taken in 1892 to London, are lost. Micro samples taken from various structures of the building were analyzed at the Smithsonian Institution and at Harvard University after being removed by Lerner in 1975 (Stodulski et al. 1984), where these pigments remain. The tables provide information on which parts of the structures these samples were taken from, based on the log entries by Judith Lerner, not published in Stodulski et al. 1984.

In any reporting process, precise descriptions of the locations where all samples are extracted is extremely important. It is not at all possible to distinguish the hues a color had, whether it was, for instance, a darker or brighter blue. The term Egyptian blue is a modern term to denote a special synthetically produced pigment, composed of copper, silica, alkali and lime. It does not imply any provenance. The elemental composition refers to the specific samples taken.

A. Persepolis, Hall of 100 Columns

Location	Identification of Material	Elemental Composition	Color	Sample No. Stodulski ²²⁴ /Lerner
Eastern Doorway, West	Hematite	Fe, Si, Ca	Red	11
Eastern Doorway, West (North) = Newel of Throne	Egyptian blue	CaCuSi ₄ O ₁₀	Blue	12
Eastern Doorway, West (North), from 'fringe' of Throne leg No. 4	Egyptian blue	CaCuSi ₄ O ₁₀	Blue	13
Eastern Doorway, West	Egyptian blue	CaCuSi ₄ O ₁₀	Blue	14

²²⁴ Stodulski et al. 1984: 145-6; tables 1 and 2.

(North) from 'fringe' of Throne leg No. 5				
Eastern Doorway, West (North) from 'fringe' of Throne leg No. 6	Egyptian blue	$\text{CaCuSi}_4\text{O}_{10}$	Blue	15
Eastern Doorway, West (North) from 'fringe' of Throne leg No. 7	Hematite	Fe, Si, Ca	Red	16
Eastern Doorway, West (North) from 'fringe' of Throne leg No. 10	Egyptian blue	$\text{CaCuSi}_4\text{O}_{10}$	Blue	17
Middle Row of large wing Feathers	Hematite	Fe, Si, Ca	Red	18
Niche in South Wall	Hematite, traces of Cinnabar	Fe, Si, Ca, Mg, Al (Hg)	Red	21
Niche in South Wall	Hematite	Ca (Mg, Fe, Al)	Red	22
Eastern Doorway, West, Right wing of figure 1 st row	Egyptian blue	$\text{CaCuSi}_4\text{O}_{10}$	Blue	26
Eastern Doorway, West, Right wing of figure 1 st row	Egyptian blue	$\text{CaCuSi}_4\text{O}_{10}$	Blue	27
Eastern Doorway, West, Right wing of figure 2 nd row	Egyptian blue	$\text{CaCuSi}_4\text{O}_{10}$	Blue	28

Eastern Doorway, West, Right wing of figure 3 rd row	Malachite	$\text{Cu}_2\text{CO}_3(\text{OH})$	Green	29
Eastern Doorway, West, Fragment of left wing of figure, 1 st row of circle (in museum store)	Egyptian blue	$\text{CaCuSi}_4\text{O}_{10}$	Blue	30
Eastern Doorway, West, Fragment of left wing of figure, 1 st row of circle (in museum store), same applies as for No. 30 but from different feather	Egyptian blue	$\text{CaCuSi}_4\text{O}_{10}$	Blue	31
Eastern doorway, West, fragment: left wing of figure, 2 nd row	Cinnabar	HgS	Red	32
Eastern doorway, West, fragment: left wing of figure, 3 rd row	Malachite	$\text{Cu}_2\text{CO}_3(\text{OH})$	Green	33
Deposit on one of the circles of large wing feather, top row	Calcite			19
Eastern doorway, West, man in winged disk (today in Harvard), unspecified spot	Cinnabar	HgS	Red	F1

Eastern doorway, West, man in winged disk (today in Harvard), unspecified spot	Egyptian blue	$\text{CaCuSi}_4\text{O}_{10}$	Blue	F2
Eastern doorway, West, man in winged disk (today in Harvard), unspecified spot	Malachite	$\text{Cu}_2\text{CO}_3(\text{OH})$	Green	F3

B. Central Building (=Tripylon)

Location				
	Azurite with Malachite	$\text{Cu}_2\text{CO}_3(\text{OH})$		
	Calcite			
Fragment of 1 st attendant's feet	Cinnabar	HgS	Red	23
King's robe	Egyptian blue	$\text{CaCuSi}_4\text{O}_{10}$	Blue	44
	Ochre, Yellow		Yellow	
Excavated below eastern doorway	Realgar / orpiment	As, S	originally orange?	1
Excavated below eastern doorway	Egyptian blue	$\text{CaCuSi}_4\text{O}_{10}$	Blue	2
	Sulfur	S	Yellow	9
	Tenorite	Cu, O	Green	52
	Tyrolite	Cu, Ca, As, Si, Mg	Green	

C. Apadana

Location				
Mouth of lion capital eastern portico	Hematite	Fe ₂ O ₃	Red	51

D. Naqsh- e Rostam, Façade of Tomb of Darius²²⁵

Location				
Inscription on squeeze, taken by Herzfeld	Egyptian blue	CaCuSi ₄ O ₁₀	Blue	Identified by J. Douglas, Freer and Sackler Gallery 2009

E. Pasargadae

Location				
Palace P Audience Hall, SW side	Hematite	Fe ₂ O ₃	Red	46
Palace P Audience Hall NW side, along dado	Hematite	Fe ₂ O ₃	Red	47
Residence, Floor level on side of column base	Hematite	Fe ₂ O ₃	Red	48
Residence, from floor slab	Hematite	Fe ₂ O ₃	Red	49
Doorjamb in Residence, right shoe of kin's attendant	Hematite, trace of cinnabar	Fe ₂ O ₃ HgS	Red	50

²²⁵ The recent discoveries of pigments, introduced here in Chapter 4, made by H. Rahsaz, have not been scientifically analysed.

APPENDIX 3

Translation of C. Texier, *Description de l'Arménie, la Perse et la Mésopotamie*. Vol. 2. 1852. Paris: Didot: 288-90: "Peinture des bas-reliefs", by M. Thiam (Washington, DC)

All we have left is to examine the bas-reliefs I briefly mentioned and which deserve to be paid attention to, given the figures they represent and the new facts revealed by a careful examination. To properly understand my demonstration, one has to think back to the time when I was in Persepolis. The Nineveh ruins had not yet been discovered; only one English author, Buckingham (Travels in Persia), had indicated paint marks; when arriving there, I myself had no fixed idea about this issue. I had carefully examined all the monuments in Asia to try to find paint marks, and I had asserted that there was no such mark on most of the temples and marble monuments. I had seen some on a few tombs in Lycia; but the archaic monuments carved in stone in Phrygia showed no such marks.

Therefore I did not commit myself to finding paint marks, and I must even confess that at the beginning of my stay in Persepolis, I did not even think about this issue. While I was busy surveying and measuring the monuments, this thought did not occur to me once. But when I had to draw some bas-reliefs, I identified, in some parts, morsels of coating or sediments which did not seem to be part of the rock, but that did not really hold my attention at first. However, when I had to draw the figure of the king, followed by his two servants, I had to admit the certain, irrefutable presence of the paint of the bas-reliefs. Indeed I saw under the surface coating, which is nowadays as polished as a mirror, rosettes lightly drawn with a chisel, and that could only be the outline of a painted ornament on the coating; I saw the same ornament on the servants' hats. The king's tiara, as we know it today, is only a massive cylinder-shaped item; but we notice two holes on it that were used to seal a more decorated headgear made of bronze or a more precious metal. This one element would prove by itself that the sculpture was polychrome. Had the coating been designed to bear only one color, the ornaments that cover it would have been raised patterns, like the rosettes around the bas-reliefs; drawing simple ornaments on the sculptures with a chisel was never one of the ancient craftsmen's habits.

In another bas-relief, I identified the coating I previously mentioned, which had a blackish appearance; I scraped the stone smoothly, and dissolved the dust in hydrochloric acid, as I had kept a little box of reagents. I obtained a gray residue, and threw it in a pipe that contained ammonia, and twenty-four hours later I obtained a beautiful blue-colored solution. It was, without any doubt, an application of blue ash, the base of which is copper, and which was used as an ointment on the sculptures. Ancient craftsmen almost always used blue colors based on copper, the manufacturing of which was described by Vitruvius. They sometimes used cobalt, but I never discovered any, neither in Pompeii nor in Egypt. Those are the only remains I recognized, but they did not provide me with satisfying proofs, regarding the analysis as well as the application. There is another consideration I must not neglect, although it is secondary: it is that Persians had so many contacts with ancient Egyptians that it is likely that artists coming from this country

brought some of their decorating techniques to Persia. The walls of Babylon were decorated with all kinds of animals represented naturally and painted with wax polish.

The trial I had conducted demonstrated unmistakably the use of paint on the bas-reliefs. The marks that still remain are so elusive that it is not astonishing that those who visited the ruins before me did not see them. I therefore carefully examined to determine whether other signs, more tangible, remained. In the Four-Pillars room, while examining the bas-relief picturing the king followed by his two servants, I identified on the garment a drawing of rosettes drawn on the stone with a very thin spine; it is obvious that this drawing was a primary draft for the application of paint; if the sculpture was to remain monochrome, the ornaments on the king's garment would have been indicated another way, in hollow or raised pattern. Those who preceded me in Persepolis missed these rosettes as well.

To convince oneself that these facts are accurate, there is no need to go all the way to Persepolis. The boards that depict this bas-relief, with the attempted depiction of paint, were published in 1842, which was long before the discovery of the Nineveh bas-reliefs. And yet, in one of those, which were brought back to Paris, the dress of one of the main figures is decorated with a rosette drawing that is identical to the one in Persepolis. For anyone who has no previous knowledge of the matter, isn't it obvious that I wouldn't have imagined a drawing that coincided so perfectly with the figures those were discovered in Nineveh?

Last but not least, a final proof: the king's tiara. This monarch's headgear is depicted by a rough hewed cylinder, which is pierced in several places by sealing holes that indicate a metal coating, probably golden bronze embellished with a gaudy and precious stones. This is one more proof that the bas-reliefs were not monochromes.

One consideration that prevails, which I mentioned as early as 1840, is that the Nineveh bas-reliefs, which are so similar in making and depicting with those in Persepolis, are decorated with paint themselves, and I could not hope that such important evidence would support my argument.

In the reproduction I published, I may have gone too far by covering all the bas-reliefs with paint. However this is a matter of point of view. I know for certain that they were painted on a blue background. Perhaps the clothes were not as decorated as I assumed. Nonetheless, the presence of painting on the monuments does not conflict with our current knowledge of ancient times; and I believe that those who will examine these monuments will agree with me.

I tried to reproduce on that board the drawings I found on several bas-reliefs. I made sure that the background was covered with a blue color. Other examples of bas-reliefs painted in blue or red demonstrate that this technique of decorating was used in Asia. The rosettes with which I covered the king's garments left paint marks. I previously mentioned the elements that support my opinion, for those who have not seen this bas-relief, but can examine those in Nineveh. It is clear that the latter are not as covered with paint as those on my drawing board, but it is a matter of viewpoint that does not alter the fact that colors were used in the Persepolis bas-reliefs.

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