

The Hippodrome of Gerasa

A Provincial Roman Circus

by Antoni A. Ostrasz (1929-1996)

with contributions by Ina Kehrberg-Ostrasz



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Cover: Restoration in progress, 1995: South-east tower and south facade of East *carceres*, with Antoni (photo R. Khouri 1995)

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To our son Mark Kehrberg-Ostrasz

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Antoni A. Ostrasz (1929-1996)

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Foreword

One cannot attempt to comment exhaustively on the life's work of such an accomplished and revered archaeologist as Antoni Ostrasz. I shall, therefore, focus my recollections on the man himself. The reason for this: Antoni's legacy is writ in stone and mortar, so delicately uncovered and with such dedication to the integrity of the work that my words will never do justice to his efforts. The sites of Jarash and their like will be his physical signature across the field of archaeology. His gift to the world; the uncovering of these treasures of the past.

Antoni has been known, and indeed renowned, among his professional peers in the international circle of restorers throughout his professional life, most of which he spent first in Egypt, Syria, Cyprus and Jordan; where I was able to make the acquaintance of this remarkable man. The projects of Abu Simbel, Alexandria and Fustat, Palmyra – the subject of his PhD thesis and restorations – and the Nea Paphos, stand as testament to a life dedicated to the preservation of our vast shared cultural heritage.

The sad destruction of Palmyra at the hands of extremists will not, however, take away from the vital and noble work to which Antoni dedicated his life.

Antoni was the architect-restorer of the Polish Team of archaeologists who arrived in 1982 at Jarash to join 'The Jarash International Project of Excavations and Restorations' (JAP) which I had the pleasure of instigating, together with the foreign archaeological institutes in Amman and the Department of Antiquities of Jordan and of which I am patron.

Antoni's earliest work was the restoration and conservation of the remains of the 'Umayyad House', excavated by the Polish Team, justifiably cited as an exemplar of reconstruction according to the principles of the Venice Charter. This was followed by his architectural research, anastylosis and meticulous conservation of the ruins and mosaic of the sixth century Church of Bishop Marianos at the hippodrome in 1982 and 1983.

The first phase of JAP and its archaeological projects ended in December of 1983 resulting in many archaeologists of foreign teams leaving Jarash. The second and new phase commenced in 1984 with focus on restoration, and re-engaging some of the architects from previous projects. Antoni was appointed as Director and architect-restorer of the New Hippodrome Project of Restoration, including excavations, which he led with diligence and care until his untimely death in October of 1996. It is this work which makes up his book *The Hippodrome of Gerasa*. A provincial Roman Circus.

I met Antoni on various occasions during my visits to Jarash, and abroad, during our Jordanian tri-annual international conference series 'Studies in the History and Archaeology of Jordan' (SHAJ) which I have chaired as patron since its inception in 1981.

I have always enjoyed and looked forward to Antoni's scholarly discussions, his considered critique laced with enough humour to make it palatable, and admired his principled stand in the field of actual reconstruction. His devotion to his work was evident in word and in deed.

In this, Antoni had found a partner in Ina Kehrberg-Ostrasz, archaeologist of the Australian Team of the first phase of JAP. They met visiting each other's sites at Jarash, as was common practice among the teams, showing and discussing their work in the field. What began as a friendship between like-minded scholars soon became a union for life blessed with the birth of their son Mark.

Ina joined Antoni's new hippodrome project from the onset as archaeologist and permanent team member; being a material finds and ceramics specialist, her voluntary position and right of publication was acknowledged by the Director General of the Department of Antiquities of Jordan. This volume gives an insight to some her own scholarly work carried out at the hippodrome and other sites at Jarash.

But foremost it is Antoni's Manuscript - his magnum opus - a manifesto and truly unique contribution to the study and execution of the restoration of ancient monuments, as described in his text and demonstrated three-dimensionally with his restorations at the hippodrome. Antoni's own words in his introduction will do this work more justice than I or any other aficionado of Antiquity can do.

Suffice it for me to say, therefore, that it is a great pleasure to introduce this, Antoni's life's work, which his colleagues have been keenly awaiting. Jordan, and the Department of Antiquities especially, are grateful to Antoni for having given his time and indeed his life to carry out his valuable work at Jarash. His heart belonged here, to the hippodrome which is why Ina decided that Antoni should be laid to rest in the town of Jarash.

I first met Ina at the British Institute in Amman, where I was struck by the dedication she shared with Antoni for antiquity and the careful preservation of these monuments of the past. Following Antoni's passing away, the British Institute continued to be her point of contact in Jordan; assisting her logistically in the enormous task of preparing this publication and to complete her own studies of the archaeological material presented in Compendium B.

It is my great privilege to introduce this labour of love, initiated by Antoni and completed by his wife Ina. I am sure that this work will be the cornerstone of archaeological study for generations to come.

HRH Prince El Hassan bin Talal, The Hashemite Kingdom of Jordan

Foreword and acknowledgements

On the format of the publication

There is little I can say about this publication other than that it is entirely the work of Antoni, his unaltered manuscript, reports, and publications. He was not only dedicated to his work in the field and research but left a uniquely significant scholarly contribution to the field of architectural studies of ancient monuments: the complete excavation of the ruins of the hippodrome and their meticulous restorations, according to evidence as found in the field, and in all aspects following the Charter of Venice (Geneva Convention 1961). His principled and comprehensive exploration in the field was mirrored in his exhaustive research and in his precise writing, presenting the reader with a professional documentation that, to his knowledge (see his Introduction) and mine had so far not been attempted in his field. Antoni may not have been able to complete writing up and presenting all results of his precise examinations and indeed scrutiny of each element of the hippodrome and the site, but it is hoped the reader will find nothing essential lacking by missing pages and two chapters of his manuscript, noted in the Table of Contents. I have tried to recover missing parts by including his unpublished reports and his published articles (Compendium A).

The originally planned Volume two of the hippodrome publications has been abandoned. Volume two are now illustrations referred to in Antoni's manuscript, replacing my studies of the archaeological material of the site and secondary history of occupation of the building, preliminary results of which had already been included by Antoni in his chapters. Much time has elapsed since the original plan during which I have published many articles on the above subjects. I decided, therefore, that it was in the best interest of the publication of the main work, Antoni's manuscript that I would not compose another book but instead present the published results of my research in Compendium B. This allows for easier reference to my continued research on the original data referred to by Antoni in his chapters. In order to facilitate cross references, I have included citations of relevant articles in the headings and subheadings of Antoni's chapters. Indeed it is also for this reason that Antoni's articles have been reproduced here and referred to in like manner.

The lack of 'bulk' material evidence replaced with the compendia – articles and unpublished documents – will be compensated for by our digital database *Kehrberg & Ostrasz Jarash Archives* or *KOJA* for short, a permanent e-site awarded by the NSW State Government and University of Sydney. All our Jarash data – scanned plans, sketches, photos, drawings, catalogues, records, in short all documentation – will be made accessible to researchers once this book has been published and can be studied together with the hippodrome volumes. The data includes other Jarash sites/monuments we worked on from 1982 – 2010, including my annual photographic documentation of topographical and urban changes of ancient and modern Jarash.

The scanned illustrations are not processed by illustrator or similar programmes. I have merely enhanced the scanned plans and drawings with photoshop, contrasting faded or faint lines and adding typed texts where necessary, to retain as much of Antoni's original work as possible. Antoni's superbly inked-in final plans and elevations need no enhancing; indeed I have often been asked which programme he used! I have proceeded in the same manner with my own pencil pottery and Small Finds drawings, retaining the original appearance of the objects. Exactness of computerised imaging can lead to unintended uniformity, not easily recognising minor irregularities of the hand who made them as it were. Thus my pencil drawings are always the final drawings. I regard Antoni's drawings or sketches in the same way.

However much I was involved as his partner working with him as archaeologist on the hippodrome project, and indeed his partner in life, it is difficult to compose the foreword for Antoni or on his behalf. Needless to say Antoni had planned a foreword and acknowledgements, listed in the Table of Contents of his unfinished manuscript. The manuscript is incomplete for the very reason that I am writing this, brought about by his untimely death on the ninth of October in 1996. Unlike the missing chapters and incomplete parts of other chapters which I have not attempted to complete or round up as it were, I have decided to write his foreword including my own acknowledgements reflecting my contribution of Compendium B.

Acknowledgements

Concerning acknowledgements, our deepest gratitude needs go first and last to our son, Mark. His very presence has blessed our lives immeasurably; Mark enhanced our daily routine and made our life complete at the Archaeology

Camp at Jarash where he spent what all would agree who met us an unusual childhood. In short, Mark has in no small way contributed to the result of our work which is shown in this volume, and thus dedicated to him.

We would like to acknowledge the Department of Antiquities of Jordan which appointed Antoni permanently and full-time as director and architect-restorer of the 'Jarash Hippodrome Excavation and Restoration Project' from 1984 on, and which granted me permission to be in charge of the archaeological material studies and their publications. The Department provided the funding for fieldwork – excavations and restoration – and the labour force as well as equipment and our housing at the Archaeological Camp on the ancient site. The latter were provided by the Jarash Office and its staff looking after us from 1982 to 1996. We were treated with utmost consideration and felt included as part of the Jarash DoA team which was especially apparent during the difficult years of the late 1980s and early 1990s. The support and provision by the Jarash Office made possible the fieldwork for the full 12 years at the hippodrome as well as being able to document and study the architectural and archaeological materials in depth to their full extent. We wish to thank HRH Prince Hassan for his patronage of the 'Jarash Archaeological Project' (JAP) and his continued backing, including the hippodrome project.

As Antoni said, the Jarash hippodrome is unique in that it is the most extensively, almost completely, excavated and documented monument by one and the same team (1 architect, 1 archaeologist, a stone cutter and mason and 9-12 workers, see his reports in Compendium A) having been continuously excavated and studied throughout an entire fourteen years, including the Polish team's excavations, led from 1982-83 by Michel Gawlikowski together with Ali Musa, and of which Antoni was the architect and restorer (see JAP I). The continuous work also enabled revisions and emendations depending on new findings in the field, often reflected in preliminary publications by Antoni and myself; it is these research results which in effect make up this publication, Volume 1: Parts A and B and volume 2: Illustrations.

Whilst I cannot list every staff member from the Amman and Jarash Offices of the Dept of Antiquities from the 1980s to late 1990s, I owe special thanks to some colleagues. Then Dir-Gen Ghazi Bisheh and Abdel Majeed Mujelly, responsible for the DoA reconstruction projects, both organised Antoni's funeral at Jarash and, together with the Mayor of Jarash, invited the entire congregation to a funeral feast at a famed Jarash restaurant. I was very touched by their care and generosity, and the expression of affection they both held for Antoni.

Eman Oweis, Aida Nagawi and Kheiriyeh 'Amr, from the Jarash Museum and the Nat. Museum at Amman, were very supportive throughout our work together and my subsequent research at the site, as were the Inspectors of Antiquities at Jarash.

In addition many thanks must go to the hippodrome team of workers, skilled and unskilled alike, a constant support throughout Antoni's fieldwork. Antoni has acknowledged individuals and their role in parts of the manuscript, and especially in his reports of progress to the successive Director-Generals of the Department of Antiquities in Amman, reproduced here in Compendium A: unpublished reports by Antoni Ostrasz. Their moral support was evident throughout my post-excavation work at Jarash.

I wish to acknowledge, I am sure also on behalf of Antoni, that 'research and preparation of the manuscript for this publication were made possible through a generous grant from the Shelby White – Leon Levy Program for Archaeological Publications'. [Wording requested by Harard/Sem.Mus]. The British Institute at Amman, CBRL, backed my application by awarding me an Hon. Affiliation. This, together with my Hon. Fellowship at The University of Sydney, Dept of Archaeology, undoubtedly helped obtaining the grant for three years. Through its Directors Alison McQuitty, Bill Finlayson, Carol Palmer, Associates Michael Macdonald and Kay Prag, and the Administrator, Nadja Qaisi, the British Institute provided logistical support, encouraging my endeavours during my residency in Jordan/Jarash and subsequent annual visits until 2012. I would like to thank the administrative and IT staff of the 'School of Philosophical and Historical Inquiries' at the University of Sydney for their logistical support, and Andrew Wilson who helped me set up the map scanning and processing programme for Antoni's plans, 100s of them, at the Archaeological Computing Lab of the University.

ACOR has also been a constant support; professional admirers of Antoni's work the committee employed Antoni in 1995-96 to restore the Ayyubid Tower at the Citadel of Amman, published by ACOR in *AJA* and *ADAJ*, 1997 (posthumously).

The other Amman foreign institute I wish to thank is IFAPO; thanks to the then Dir. Jean-Marie Dentzer and Jean-Pierre Braun, 'R sponsible' of IFAPO – Amman Branch, I was made Assoc. Fellow from 1997-2000 to help me continue my work at Jarash and appointed as Jarash archaeologist-ceramicist for their new project, 'The Upper Temple of Zeus Complex Project 1996-2000', exploring those grounds and ruins for

restoration. However, our warmest thanks and appreciation must go to Gabriel Humbert, our neighbour at the Camp where IFAPO had their quarters which he managed, a colleague-friend since the early 1980s. Gabriel helped me to process the last post-excavation finds from our hippodrome excavations 1995-96, as always large amounts from that site, by sorting, labelling and mending finds, especially pottery. Needless to say he worked with me on the 1996-2000 Upper Zeus Temple finds. IFAPO made available their photographer, François Bernel, and illustrators Nawal Hawari and Sophie Vatteoni, for the above mentioned hippodrome finds, especially ceramics, as well as the Upper Zeus Temple objects under my care. In November 1996, Anne-Caroline Goguel and I took the final sets of photographs (pre-digital) with elevated and detailed views of our excavations of the *cavea*, taken from the crane set up for us by Abdel Majeed Mujelly before the site was officially handed over to him; Dominique Desbrosse aided putting together the many photographic files of the latter. From the early 2000s on when I came to Jarash for shorter annual visits, Lyn Heppner and Anne Peopjes gave their time helping with processing documentations, and in 2010, together with Chrystelle March and Gabriel, in the humungous task of closing down our Hippodrome dig quarters at the Camp, packing up and transferring the artefacts to the Jarash Office Archaeological finds store.

I hope I will be forgiven a certain awkwardness in writing the foreword, as well as omitting colleagues and friends who also lived at the Camp in the 14 years of working at the Hippodrome, and in my later visits. Specific work-related acknowledgements of individuals will be found in the relevant chapters, reports and publications in Compendia A and B. But I know Antoni would join me in thanking the Australian and Polish Embassy staff in Amman for their logistical support throughout our work and residence and my subsequent field research for Antoni's book on the Jarash hippodrome, this publication.

Ina Kehrberg-Ostrasz (Hon. Research Fellow, Dept of Archaeology, University of Sydney, NSW)

Canberra, ACT, March 2017

The Hippodrome of Gerasa. A Provincial Roman Circus

Antoni A. Ostrasz (1929-1996)

Figures 1-145

MANUSCRIPT

Introduction

In the introduction to a pioneer study of Roman circuses published in 1986 its author, John H. Humphrey, wrote that ‘No single circus can be completely excavated during the working lifetime of one professional archaeologist if the excavation is going to be conducted according to standards that are currently acceptable.’ (Humphrey 1986: 4) The view is obviously pessimistic. Every circus not buried under modern settlements can be completely excavated according to these standards and during a part of the working lifetime of one archaeologist. It is true, however, that two main conditions must be complied with to achieve this aim. These are the necessary funds for years of continuous work and the will of an archaeologist to devote a part of his/her professional lifetime to excavate a circus completely. Apparently, the two conditions combined have never been fulfilled when Humphrey was writing his book.

The case of the hippodrome at Jerash / Gerasa should, then be viewed as exceptional. The hippodrome has been completely excavated according to basic standards that are currently acceptable and it has been excavated during a part of the working lifetime of one architect-archaeologist. Admittedly, the fact that the hippodrome at Jerash is the smallest circus on record (twice as small as the largest circus known) was an important factor in achieving the aim of complete excavation and work was conducted 11 months a year for almost 11 years. The sponsor of the project, the Department of Antiquities of Jordan, provided the necessary funds – at times very modest, at times more generous – for the project to continue toward its completion.

The results fully repaid the expense and the effort. The hippodrome emerged from the excavation as one of the best preserved monuments of this building type. The evidence for its architecture (embodied in the remains *in situ* and recovered from tumbled stones of the structure) appeared more plentiful than the evidence for architecture of any of the few other circuses completely or extensively excavated. The evidence made a solid basis for the reconstruction on paper of most of the building in its three-dimensional (spatial) form. This is worth stressing as the knowledge of architecture of most circuses (including some of the most extensively excavated and thought to be relatively well preserved circuses) is limited to their plan which, in many a case, is based only on preserved foundations and / or poor

remains of the lowest parts of the overground masonry. The third dimension of these circuses is either totally unknown or it has been guessed at and presented in the form of reconstruction on paper, rarely based on solid physical or even acceptable indirect evidence.

The building of the circus consisted of three main components: the arena, the *cavea* and the *carceres*. It follows that the knowledge of the architecture of a circus depends on the total evidence available for each of the components. In the case of Gerasa’s hippodrome the evidence for the arena is much poorer than that for the *cavea* and *carceres*. The size and shape of the arena are precisely fixed but of a very important feature of the arena – the barrier (*euripus*) – only a short stretch of its foundations has survived. In many circuses the barrier is incomparably better preserved.

In contrast, the architecture of the *cavea* is very well evidenced both by the remains *in situ* and tumbled stones of the masonry. There is hardly any detail of the substructure of the *cavea* from its foundations to its top that is not attested by physical evidence. There is complete evidence for the distribution and architectural form of the *vomitoria* leading to and from the seating tiers of the *cavea*. There is direct evidence for the arrangement of the lower half of the seating tiers and indirect evidence for this arrangement in the upper half of the *cavea*. Finally, there is both direct and indirect evidence for the distribution of most of the *scalaria* in the *cavea*. Only one other circus (Lepcis Magna) may produce – if it is ever to be completely excavated – equally abundant evidence for the architecture of this component of the circus.

The evidence for the architecture of the *carceres* is even richer. In fact, the only feature of the structure that cannot be reconstructed is the tribunal for the magistrate presiding over the start of the races. There is circumstantial evidence for its existence over the pavilion in the centre of the *carceres* but no evidence for its architecture. Apart from this feature, the reconstruction of the architecture of the *carceres* is complete in its detail up to the cornice crowning the structure. In no other circus can the architecture of the *carceres* be so reconstructed.

The architecture of the hippodrome can be reconstructed not only on paper. The building can be

also actually restored, some of its parts extensively. The actual restoration of the hippodrome is mentioned here for a very relevant reason the importance of which may not be perceived by all. A few remarks are therefore necessary.

In archaeological studies the reconstruction on paper serves the purpose of complementing graphically the textual description and of illustrating conclusions pertaining to the architecture of studied monuments. The conclusions are based mainly on direct evidence of the extant remains of masonry but as this evidence is never complete indirect evidence is commonly, often extensively, used for producing a possibly full picture. This kind of evidence includes analogies with other buildings of the same type, similarities in building materials and building techniques employed in the same period, and the like. The conclusions so arrived at cannot fail to be hypothetical to some, often great, degree. It is therefore not surprising that in publications presenting studies of architecture of excavated monuments expressions such as 'it is probable', 'it seems', 'there can be little doubt', etc. are frequently used. And the reconstructions on paper express the same probable, seeming or little doubted veracity, only rendered graphically.

The actual restoration of an ancient monument of architecture is quite different an affair. The initial procedure leading to the restoration is also reconstructing on paper the architecture of the building. However, according to standards of restoration that are currently acceptable, this reconstruction cannot contain anything that is hypothetical. The reconstruction must be expressed textually and presented graphically in categorical terms of 'it is' or 'it was'. There is no place for probabilities here. The statement that a part or the whole of a monument of architecture is restorable means that there is complete material evidence for this part or for the whole of the architecture of the monument. Thus solid is the evidence for the architecture of most parts of the *cavea* and of the entire *carceres* of the hippodrome.

The material recovered in the course of excavation (inscriptions, coins, ceramics and other artefacts) makes solid ground for distinguishing and dating subsequent periods in the history of the building: the period of construction, the period of primary use, the period of reuse, and the periods of deterioration, destruction and abandonment. The dating of the particular periods is discussed in detail in Chapters 3 and 6 but it is deemed necessary to give already here a synopsis of the chronology of these periods in order to lay the ground for what will be mentioned in the later part of this introduction.

The hippodrome was under construction in the second half of the second century AD and was completed before, certainly not later than 212.¹ The building served its primary purpose for an exceptionally short time; already towards the end of the third century, at latest the very beginning of the fourth, the hippodrome catered no longer for chariot racing. It might seem surprising that the hippodrome of Gerasa ceased to serve the purpose for which it was built at the time when new circuses were being erected in other cities of the Roman Empire. This ceases to be surprising when the cause for the discontinuance of chariot racing in the hippodrome is explained. It will be seen that the cause was deterioration of some parts of the structure, the deterioration which started immediately after the completion of construction and which was due to poor founding of the building.

The building was not abandoned after it had ceased to serve its original purpose. Instead of catering for chariot racing, the building and its outer perimeter became an industrial centre, mainly for ceramic production. This activity started in the last decades of the Roman and continued throughout the whole Byzantine period.² Kilns for firing pots, oil lamps, tiles and water pipes were built in some chambers of the substructure of the *cavea* and outside it. Other chambers housed installations for the production of a gypsum-like substance associated with ceramic production.³ Some chambers were adapted for dwelling purposes. And most of the chambers were used as places for dumping misfired ceramics. There was not a single chamber which would not have been used for one or the other of the various listed purposes and in many a case one chamber catered for a different kind of use in successive periods.

At the same time when the productive activity was conducted in the building of the hippodrome some of its parts were subjected to destructive activity which followed the process of deterioration of the masonry. As early as from the end of the 4th⁴ century the building was robbed of its stones which were used to build other structures. The latest evidence found for this activity comes from the 6th century. However, the final destruction of the building was caused by earthquakes. The masonry of most of the building collapsed during the earthquake of 659/60; only the *carceres* and the south-east part of the *cavea* survived that disaster.

¹ See e.g. Comp. A: Ostrasz 1989, 1991 and Compendium B: Kehrberg 1989, 2018: fc; Borkowski 1989:79-83.

² But also housed tanneries during the Late Roman period, see Compendium B. The cultural-historical eras referred to in both Parts A and B in this volume, and indeed all our hippodrome publications, adhere to the Jordanian chronology, published by the Department of Antiquities of Jordan in *AJ I*, II. (IK-O).

³ And in particular for the tanneries installed in neighbouring chambers, see Compendium B, Kehrberg 2007 (IK-O).

⁴ Rather in 4th, latest coin of hoard in E2 pottery dump is 1st decade of 4th c., see register of coins in Compendium A (IK-O).

These parts of the building were destroyed only about a century later by the earthquake of 749 (Russell 1985: 37-59).⁵ The excavation revealed evidence for some but only intermittent occupation or squatting in these parts of the building in the period between the two earthquakes. After the latter earthquake the building was finally abandoned.⁶

It appears from this synoptic review that the excavation of the hippodrome produced material relating to two different subjects. One is the architecture and the history of architecture of a building catering for chariot racing. The other is the production and the history of production of ceramics, discussed in articles and papers presented in Compendium B. Accordingly, the two subjects are discussed in two separate sections of book: '*The Hippodrome of Gerasa. A Provincial Roman Circus*' deals with the architecture and the history of the building in the period from its inception to the time when the structure ceased to serve its primary function, and with the process of deterioration and destruction of the building. Compendium B, composed of published articles and unpublished papers deals with the ceramics of the late Roman and Byzantine Periods produced in the building but also with other aspects of its late history.⁷

Due to different subjects of either parts (The Manuscript and Compendia A and B), the composition of each is different. The Manuscript starts with the history of exploration and with a review of results of earlier excavations of the monument conducted between 1931 and 1983. This is the subject of Chapter 1. Chapter 2 contains the report of the excavation of 1985-1995.⁸ In this chapter, there are reported only those discoveries and finds which pertain to the architecture, the history of construction and primary use of the building, and to the process of deterioration and destruction of the structure. Compendium B presents the record of the finds. The finds which are dealt with in here are also those that provide evidence for the history of the hippodrome before the reoccupation of the building and for the history of the process of deterioration and destruction of its masonry. However, there is

one exception. It will be seen that, due to a particular stratigraphic composition of the fill within the building, there is a substantial group of coins each of which bears evidence for two or even three different stages in the history of the monument. All the coins found in the course of excavation are presented in Compendium A.⁹ In Chapter 3 the architecture of the hippodrome, as evidenced by its remains in situ and stones of its tumbled masonry, is presented and discussed. Included is the subject of chronology of subsequent stages in the history of the hippodrome: the history of the site on which it was built, of construction, of primary use, and of deterioration and destruction of the building. This chapter also includes an attempt at reconstructing the process of erecting the building. Chapter 7 is devoted to comparative study of the architecture of the hippodrome of Gerasa against the background of the knowledge of the architecture of Roman circuses. In Chapter 7 the actual restoration of the monument is discussed.

The material presented and discussed in Compendium B is deemed by the authors [of Compendium A and Compendium B] to be exceptionally important. The importance lies, first of all, in the fact that the material attests to the later history of the hippodrome. Several other circuses are known to have been reoccupied for various purposes after they had ceased to serve their primary function, but evidence for this stage of their history was hardly cared for in the course of excavation and, inevitably, negligently treated in the publications.¹⁰ The hippodrome at Jerash is the only circus of which no stage of its history has been discriminated either in the course of excavation or – inevitable consequence – in its study.

Another aspect of the later history of the building of the hippodrome is equally, perhaps even more important. This is the contribution of the material recovered in the course of excavation of the building to the knowledge of ceramic artefacts produced in Gerasa in the Late

⁵ Russell 1985: 37-59.

⁶ There is evidence of human passage and some squatting on the ruins throughout the Islamic periods continuing into the 20th century. In the Ottoman period the arena was restructured for gardens; an irrigation system channelling across the arena was built in the earlier 20th century by local farmers and is still used by the present population. Antoni Ostrasz incorporated the feature by building a protective tunnel for the underground irrigation in his restoration of the arena grounds to pacify the local neighbourhood whose properties border, and in part overlap the ruins of the west *cavea*. (IK-O)

⁷ Had to amend the text to suit the new format, replacing the originally planned volume II of the industrial output, I.K-O.

⁸ The excavations only ceased with the untimely death of Antoni Ostrasz on 9th October 1996. Accounts of the last excavations are reported in Compendium B articles by I. Kehrberg, I.K-O.

⁹ The coins were identified and dated by Christian Augé and Julian Bowsher. For easier reference, a catalogue-list drawn up by A.O. of the groups of coins and their find contexts will appear in Compendium A, unpublished manuscripts/papers by A.O.. (IK-O)

¹⁰ This deserves to be qualified. Most excavations of known Roman or Greek monuments in the West and East, like the circus, were undertaken in the earlier part of the 20th century when scholarly interest was still mainly in Classical studies, more often carried out by classicists and architects specializing in Greek or Roman monumental architecture. This compromised excavations and recordings of especially later period occupations and their studies in architecture and archaeology, unless they pertained to Byzantine churches. This attitude has since changed and much information has been recovered and recorded at sites to at least partially remedy the situation. See e.g. the Carthage circus (Humphrey on tanneries), and elsewhere at Um Qays/Gadara, Pella, Scythopolis excavations at Caesarea, Paphos, etc. But it is true to say that no monument of this size has been as completely and systematically excavated (around the clock for 12 years), recorded and studied by the same two scholars as the Jarash hippodrome and its site. (IK-O)

Roman and Byzantine periods. All types of pottery and lamps produced in Gerasa in these periods were produced in the building of the former hippodrome. There is no single type of ceramics discovered at other sites excavated at Jerash so far which was not produced in this centre of ceramic production, and some types were found only there. It may be mentioned by the way that at no other site excavated at Jerash was there found firm evidence for ceramic production there (kilns and/or large deposits of misfired and crushed ceramics) covering the Late Roman and Byzantine periods.¹¹ In many regards, largely owing to its complete excavation exposing an enormous quantity and wealth of architectural and archaeological material, the hippodrome may be seen as a mirror reflecting the ancient and indeed modern history of Jerash.

¹¹ This has been proven not to be the case. Kilns and waste products have since been excavated at many sites inside the walled city of Jerash, e.g. at the Zeus and Artemis Sanctuaries, the North Theatre and many other monumental Roman structures or ruins. Antoni was right, however, in claiming that the many hippodrome workshops made up the largest complex of industrial ceramic manufacture at Gerasa and Jerash spanning almost 400 years of uninterrupted production on a massive scale not repeated anywhere else at Jerash or other Decapolis cities. Nor did individual workshops scattered inside the city produce ceramics continuously from the Late Roman to Early Islamic periods, nor replicate the industrial scale of manufacture which is so far unparalleled. See more on the 'industrial suq of Gerasa' in compendium B. (IK-O)