

TAMÁS BEZECZKY (ED.)

AMPHORA RESEARCH IN CASTRUM VILLA ON BRIJUNI ISLAND



CONTRIBUTORS

TAMÁS BEZECZKY, PIERO BERNI MILLET, MICHEL BONIFAY,
CLAUDIO CAPELLI, HORACIO GONZÁLEZ CESTEROS,
SÁNDOR JÓZSA, MARTINO LA TORRE, ALEXANDER SCHOBERT,
GYÖRGY SZAKMÁNY



AUSTRIAN
ACADEMY
OF SCIENCES
PRESS

AMPHORA RESEARCH
IN CASTRUM VILLA ON BRIJUNI ISLAND
EDITED BY
TAMÁS BEZECZKY

ÖSTERREICHISCHE AKADEMIE DER WISSENSCHAFTEN
PHILOSOPHISCH-HISTORISCHE KLASSE
DENKSCHRIFTEN, 509. BAND

ARCHÄOLOGISCHE FORSCHUNGEN
Band 29

AMPHORA RESEARCH IN CASTRUM VILLA ON BRIJUNI ISLAND

CONTRIBUTORS

TAMÁS BEZECZKY, PIERO BERNI MILLET, MICHEL BONIFAY,
CLAUDIO CAPELLI, HORACIO GONZÁLEZ CESTEROS,
SÁNDOR JÓZSA, MARTINO LA TORRE, ALEXANDER SCHOBERT,
GYÖRGY SZAKMÁNY

EDITED BY
TAMÁS BEZECZKY



AUSTRIAN
ACADEMY
OF SCIENCES
PRESS

Angenommen durch die Publikationskommission der philosophisch-historischen Klasse der
Österreichischen Akademie der Wissenschaften:

Accepted by the publication committee of the Division of Humanities and Social Sciences
of the Austrian Academy of Sciences by:

Michael Alram, Bert G. Fagner, Andre Gingrich, Hermann Hunger,
Sigrid Jalkotzy-Deger, Renate Pillinger, Franz Rainer, Oliver Jens Schmitt,
Danuta Shanzer, Peter Wiesinger, Waldemar Zacharasiewicz

Redaktion:

Tamás Bezeczky / Katharina Preindl

Umschlagabbildung:

Aerial photograph of Castrum villa (Courtesy of the Brijuni Museum)

Diese Publikation wurde einem anonymen,
internationalen Begutachtungsverfahren unterzogen.

This publication was subject to international and anonymous peer review.
Peer review is an essential part of the Austrian Academy of Sciences Press evaluation
process. Before any book can be accepted for publication, it is assessed by international
specialists and ultimately must be approved by the Austrian Academy of Sciences
Publication Committee.

Die verwendete Papiersorte in dieser Publikation ist DIN EN ISO 9706 zertifiziert und erfüllt die Voraussetzung für
eine dauerhafte Archivierung von schriftlichem Kulturgut.

The paper used in this publication is DIN EN ISO 9706 certified and meets the requirements for permanent archiving
of written cultural property.

Alle Rechte vorbehalten.

ISBN 978-3-7001-7972-6

Copyright © 2019 by

Österreichische Akademie der Wissenschaften, Wien

Satz und Layout: Andrea Sulzgruber, Wien

Druck und Bindung: Wograndl Druck GmbH, Mattersburg

<https://epub.oeaw.ac.at/7972-6>

<https://verlag.oeaw.ac.at>

Made in Europe

CONTENTS

Foreword (PÜLZ)	VII
In memoriam Tamás Bezeczky (1949–2018) (KRINZINGER)	IX
Introduction and acknowledgements (BEZECZKY)	XI
List of figures	XIII
List of plates	XV

SHORT HISTORY OF THE WORKSHOP AND THE VILLAS

CHAPTER 1	Istria and the amphora workshops (BEZECZKY)	3
	1 Historical background	3
	2 The Fažana workshop	5
	3 The owners of the workshop	6
	4 The amphora stamps	6
	5 The production capacity of the villas and the distribution of the Fažana amphorae	7
CHAPTER 2	The villas of Brijuni (LA TORRE – BEZECZKY)	11
	1 Verige Bay (Val Catena)	11
	2 Kolci (Monte Collisi)	15
	3 Castrum	17
CHAPTER 3	The early Christian churches of Brijuni (SCHOBERT)	29
	1 The Church of St. Mary	29
	2 The early Christian church within the walls of the Castrum and in Verige Bay	34
	3 The Church of St. Peter	34
	4 The Bishop of <i>Cissa Pullaria</i> (<i>Cessus</i>) and his residence	36

THE AMPHORAE

CHAPTER 4	Italian and Istrian amphorae (BEZECZKY)	41
	1 Italian wine amphorae from the late Republican and early Roman period	41
	2 Olive oil amphorae	42
	3 Istrian fish sauces amphorae	44
	4 Northern Adriatic amphorae	45
	5 Miscellaneous Italian amphorae	45
	Conclusion	46
CHAPTER 5	Hispanic amphorae (GONZÁLEZ CESTEROS – BERNI MILLET)	47
	1 Iberian amphorae production and the Adriatic region	47
	2 Identification problems in distinguishing Lusitanian and Baetican amphora types	51
	3 The Hispanic amphorae from the Brijuni Castrum villa	52
	Conclusion	53
CHAPTER 6	Eastern Mediterranean amphorae (GONZÁLEZ CESTEROS)	55
	The eastern Mediterranean amphorae and the north Adriatic region	55
	The eastern Mediterranean amphorae types from the Brijuni Castrum villa	63
	Conclusion	69

CHAPTER 7	African amphorae (BONIFAY – CAPELLI)	71
1	Typology and origin of the African amphorae	71
1.1	African amphorae of Punic tradition	71
1.2	Roman-African amphorae	71
1.2.1	Classical Roman-African amphorae	71
1.2.2	Late Roman-African amphorae	72
1.3	African imitations of non-African types	73
1.4	Storage jars (?)	73
2	African imports to Brijuni in the northern Adriatic context	74
	Conclusion	76
CHAPTER 8	Amphora stamps and inscriptions (BERNI MILLET – BEZECZKY)	77
CHAPTER 9	Catalogue (BEZECZKY – BERNI MILLET – BONIFAY – CAPELLI – GONZÁLEZ CESTEROS – JÓZSA – SZAKMÁNY)	79
	PLATES 1-22	101
EPIGRAPHY		
CHAPTER 10	Calendar graffiti on Dressel 20 amphorae (BERNI MILLET)	125
1	The manufacturing stages of a Dressel 20 amphora	126
2	Nominal graffiti	126
3	Calendar graffiti	128
4	The calendar graffito from the Castrum of Brijuni	132
5	Asiaticus: another paradigmatic case	135
6	General reflections	139
7	Updated chart of calendar graffiti in order of the date of the year	144
CHAPTER 11	Inscriptions on laterite finds from Brijuni (BERNI MILLET)	147
A.	Epigraphy on laterite (<i>tegulae, imbrices</i>)	150
B.	Epigraphy on <i>dolia</i>	168
C.	General index	169
	PLATES 23-34	173
MICROPETROGRAPHY		
CHAPTER 12	Micropetrography of the Fažana amphorae (SZAKMÁNY – JÓZSA)	187
	Previous works on raw material determination	187
	Methods and strategy	187
	Results	189
	Brief thin section micropetrography of amphorae	189
	Detailed thin section micropetrography of possible raw materials	189
	Detailed comparative thin section micropetrography of Fažana amphorae	191
	Discussion and conclusion	194
	Summary	196
	PLATES 35-37	197
CHAPTER 13	Summary (BEZECZKY)	201
	Sažetak (BEZECZKY)	205
APPENDIX	The Fažana amphora stamps (BEZECZKY)	209
INDICES		219
BIBLIOGRAPHY		223
CONTRIBUTORS		237

VORWORT

Die neue Publikation zu den Amphoren aus der Castrum Villa von Brijuni gibt Anlass zu einigen forschungsge-
schichtlichen Reflexionen:

Am Anfang der Forschungen zur Archäologie von Brijuni stand vor mehr als hundert Jahren Anton Gnirs, Kurator der altösterreichischen Zentralkommission für Istrien, Rektor der österreichischen Real-Schule und seit 1909 Direktor der Staatlichen Antikensammlungen in Pola. Im Auftrag von Paul Kupelwieser, dem damaligen Eigentümer der Insel, führte er seit 1904 eine Reihe von Ausgrabungen durch und legte auch das *castrum* frei. Er erkannte im Übrigen als Erster die wesentlichen Funktionen der Ruine, die später von einer befestigten Siedlung überbaut werden sollte.

Es folgten die Grabung des Museums von Pula durch die kroatischen Archäologen Štefan Mlakar und Anton Vitasović mit einigen Präzisierungen zu den Bauphasen und den landwirtschaftlichen Produktionsabläufen in der *villa rustica*.

Außer der im Museum von Pula aufbewahrten Feinkera-
mik wird das gesamte Fundmaterial der Grabungen heute im Depot des Museums des Nationalparks Brijuni gelagert, wobei die Amphoren Kollegen Bezeczký zur Publikation übergeben wurden.

Aus den Fragmenten zahlloser Amphoren, den bewähr-
ten Transport- und Speichergefäßen – sie trugen in der Regel an den Henkeln eingestempelte Hinweise auf den Produzenten und Verwalter – ergeben sich für den Fachmann faszinierende Einblicke in die ökonomischen Struktu-
ren der römischen Landwirtschaft und in die Handelswege und kulturellen Beziehungen im gesamten Mittelmeerraum. Ebendiesen Fragestellungen hat sich Tamás Bezeczký aus-
gehend von seinen 1998 publizierten Forschungen zu den Laecanius-Amphoren in den letzten Jahrzehnten mit gan-
zer Kraft gewidmet, neue Methoden weiterentwickelt und dabei wesentliche Resultate erarbeiten können.

Das vorliegende Werk bietet zunächst einen kompakten Überblick zu allen römischen Villen der Insel, im Speziellen aber zur Castrum Villa mit ihren zahlreichen Bauphasen.

Berücksichtigung findet zudem die kleine Kirche, die im spä-
ten 5. Jh. n. Chr. etwas nördlich des *castrum* errichtet wurde. Bezeczký führte also – seinem wissenschaftlichen Selbstver-
ständnis entsprechend – die Forschungen nicht alleine durch, sondern bettete diese in ein internationales Expertenteam ein, womit er dem Fundmaterial, das chronologisch vom 1. Jh. v. Chr. bis in das 7. Jh. n. Chr. reicht, und der geographi-
schen Verteilung der Produktionsstätten praktisch im gesam-
ten Kulturkreis des Mittelmeeres gerecht werden konnte.

Ausgangspunkt der vorliegenden Studien waren die Pro-
duktionsstätten in den Latifundien der Familie Laecanius, die später in den Besitz der Kaiser Vespasian, Domitian und Trajan übergingen, ehe die Produktion unter Hadrian eingestellt und durch iberische Güter ersetzt wurde. Daher sind neben den adriatischen Produktionsstätten vor allem die iberischen, aber auch die afrikanischen Amphoren von signifikanter Bedeutung. Zum ersten Mal werden im bislang oft undifferenziert dargestellten Raum des „Eastern Medi-
terranean“ auch Gruppen von spezifischen Importwaren bestimmt und einzelnen Orten zugewiesen. Eine große Hilfe stellte bei diesem Unterfangen die Amphoren-Datenbank des Autors dar. Für die petrographische Bestimmung der Materialzusammensetzung der Laecanius-Amphoren haben auch geologische Untersuchungen zum besseren Verständ-
nis der Herkunft des Tons wesentlich beigetragen.

Die nun posthum vorgelegte letzte Publikation von Tamás Bezeczký ist ein ganz hervorragendes Beispiel für seine Arbeitsweise. Das konzise Konzept mit seiner detail-
lierten Zielsetzung wurde in allen wesentlichen Punkten von ihm bestimmt und gemeinsam mit ausgewählten Fach-
leuten verschiedener Disziplinen umgesetzt. Bezeczký gab die Gesamtgliederung vor und verfasste die archäologisch-
historischen Überblicke zur Insel und alle Beiträge zu Laecanius. Auch alle Zusammenfassungen im Werk tragen seine Handschrift. Dass der Autor, durch seine schwere Krankheit geschwächt, die Fertigstellung seines bereits zum Druck eingereichten Werkes, an dem er bis zuletzt gearbeitet hat, nicht mehr erleben konnte, ist von besonderer Tragik.

Es war für das Institut für Kulturgeschichte der Antike der ÖAW eine selbstverständliche Pflicht, für den geregelten Abschluss des Publikationsprozesses zu sorgen.

Abschließend sei den Autoren gedankt, durch deren Beiträge das vorliegende Werk zu einer umfassenden wirtschafts- und kulturgeschichtlichen Studie wurde. Dankend hervorgehoben seien Horacio González Cesteros für seine Korrekturlesungen, besonders des umfangreichen Kataloges, sowie Frau Andrea Sulzgruber für den Satz und die graphische Gestaltung der Publikation. Zu danken ist zudem Frau Katharina Preindl für die redaktio-

nelle Weiterbetreuung des Manuskriptes sowie dem Verlag der ÖAW und seiner ehemaligen Geschäftsführerin Frau Mag. L. Triska, die die notwendigen Rahmenbedingungen für die Drucklegung sicherstellte.

Besonderer Dank gebührt ferner dem Fonds zur Förderung der wissenschaftlichen Forschung (FWF), welcher das Projekt – wie alle vorangegangenen Forschungen des Autors – getragen hat, sowie dem Holzhausen-Legat der ÖAW für die maßgebliche Unterstützung bei der Finanzierung des Drucks.

Wien, 2018

Andreas Pülz

IN MEMORIAM TAMÁS BEZECZKY (1949 – 2018)



Da es dem verantwortlichen Herausgeber sowie Hauptautor Tamás Bezeczy nicht mehr vergönnt war, den Abschluss und die Publikation des vorliegenden Werkes zu erleben, soll der Einleitung des Autors eine kurze Würdigung seines Lebenswerkes vorangestellt werden.

Nach der Ausbildung zum IT-Ingenieur an der TU Budapest, die er parallel zur Lehrtätigkeit an einer Techniker-Lehranstalt absolvierte, und nach einer mehrjährigen Verpflichtung am Institut für Konservierung und Methodik der Museologie wurde Bezeczy im Jahre 1982 Kurator der Computerabteilung am Ungarischen Nationalmuseum und inskribierte sich gleichzeitig am Archäologischen Institut der Universität Budapest. Er stellte ein Forschungsprojekt zur Bernsteinstraße zusammen und engagierte sich an der Ungarischen Akademie der Wissenschaften für das Thema „Computer Application in the Archaeology“. Seine Dissertation *Roman Amphorae from the Amber Route in Western Pannonia* erschien 1987 in Oxford. Im Vorwort der Dissertation legte Bezeczy seine interdisziplinären Methoden und archäologischen Ziele programmatisch dar. Die damit manifeste Doppelbegabung war bestimmend für seinen weiteren wissenschaftlichen Weg, den er mit konsequenter Leidenschaft gegangen ist: computergestützte Forschungen

zu römischen Amphoren mit interdisziplinären Methoden zur Bestimmung von Material und Produktionsort.

Schon als Student war Bezeczy auf vielen Grabungen und Fundorten in Ungarn, Jugoslawien und Italien anzutreffen. Nach Österreich kam er erstmals im Jahr 1986. Er war mehrere Jahre als Mitarbeiter bei der Ausgrabung am Magdalensberg in Kärnten tätig und mit der Bearbeitung der Amphoren betraut. Ein von der ÖAW in Aussicht gestelltes Stipendium, welches dann vom Ministerium leider nicht bewilligt wurde, war neben familiären Überlegungen einer der Gründe, Anfang der 1990er Jahre von Budapest nach Wien zu übersiedeln. Die persönlichen Lebensumstände der Familie waren in diesen Jahren sicherlich nicht leicht. Dennoch arbeitete Bezeczy zielstrebig an der Veröffentlichung seiner Resultate, die grundlegende Publikation zu den Amphoren vom Magdalensberg erschien 1994 in Klagenfurt.

Im Sommer des gleichen Jahres lernte ich Bezeczy im Grabungsdepot von Carnuntum persönlich kennen und schätzen. Kiste für Kiste, Regal für Regal durchforstete er nach „seinen Amphoren“, dokumentierte Formen und Stempel und untersuchte die Gefäße auf Graffiti sowie aufgepinselte Hinweise. Er war für sein erstes Laecanius-Projekt unterwegs, das von der Soros Foundation (Ungarn) und in der Folge von der ÖAW und dem ÖAI gemeinsam finanziert wurde. Somit bot sich dem Autor die Möglichkeit zur vertieften Erforschung der bekannten Produktionsstätten in Fazana und Brijuni (Istrien), die mit den Latifundien der senatorischen Familie des Laecanius zusammenhängen. Die vor Ort erzeugten Amphoren als „Einweggebinde“ sind Beleg für die im ganzen Mittelmeer verbreiteten landwirtschaftlichen Produkte und bieten durch die Stempelreihen nachvollziehbare Einblicke in die Organisation der Herstellung und des Handels. Die viel beachteten Ergebnisse des Projektes wurden 1998 an der ÖAW publiziert. Mit den darauffolgenden Aufenthalten als Visiting Fellow am Department of Archaeology der Universität Southampton verdichteten sich die internationalen Kontakte Bezeczys in besonderer Weise.



Tamás Bezeczy und Sándor Józsa im September 2012 auf Brijuni
(© G. Szakmány)

Als Grabungsleiter von Ephesos war es für mich naheliegend, den international anerkannten Experten 1998 in das Forscherteam einzuladen. Die Metropolis Asiae mit dem großen Handelshafen und dem weltweit berühmten Artemision erwies sich als idealer Ort für die Forschungen zur Entwicklung und Verbreitung der römischen Amphoren des östlichen Mittelmeerraumes. In mehr als 10-jähriger Arbeit schuf Bezeczy in der Tat ein Standardwerk, dessen Finanzierung dankenswerterweise über den gesamten Zeitraum dieses Projektes – nach kompetitiv erfolgten Antragsstellungen – vom FWF getragen wurde. Über die traditionellen Bearbeitungsmethoden der Funde hinaus konnten mit geologischen und petrologischen Methoden mehrere lokale Produktionsstätten definiert und deren Entwicklung über einen größeren Zeitraum dargestellt werden.

Daneben ergab sich für die modernen wirtschaftshistorischen Fragestellungen zu antiken Handelsrouten und Warentransporten eine Fülle von Importkeramik, woraus eine Vielzahl wirtschaftlicher und kultureller Kontakte nachgewiesen werden konnte. Von ganz besonderem Interesse war dabei die kontextuelle Betrachtung des gesamten Fundmaterials aus den bereits abgeschlossenen Grabungen auf der Tetragonos Agora, sodass auch das chronologische Gerüst der ausgewiesenen Typen und Varianten abgesichert werden konnte. Die Ergebnisse wurden 2013 in

den *Forschungen in Ephesos* (FiE XV/1) vorgelegt. In diesen Jahren wurde für die übersichtliche Verwaltung aller Informationen zur großen Zahl der Objekte und für die systematische Dokumentation der zahlreichen Parameter von Bezeczy gemeinsam mit Peter Hornung auch eine spezielle Datenbank entwickelt. Sie ist in der Einleitung des Werkes ausführlich beschrieben und konnte in der weiteren Folge verdichtet und erweitert werden. Sie ist heute ein wertvolles Werkzeug für alle Spezialisten der Amphorenforschung.

Mit seinem letzten großen Projekt, das wiederum vom FWF finanziert wurde, kehrte Bezeczy nach Istrien zurück und setzte es sich zum Ziel, die Amphoren aus einer kleineren Villa des Laecanius (sog. Castrum Villa) an der Westküste der Insel Brijuni zu bearbeiten. Das Fundmaterial dieser Villa war den Forschungen Bezeczys in den 1990er Jahren nicht zugänglich gewesen. Die schiere Menge der Fragmente und das breite chronologische Spektrum erforderten eine neue Arbeitsweise.

Wie in der folgenden Einleitung zur Publikation dargestellt wird, organisierte Bezeczy ein internationales Team und brachte das Projekt auf diesem Wege zu einem erfolgreichen Abschluss.

Neben diesen mehrjährigen Forschungen, die jeweils mit einer Monographie erfolgreich abgeschlossen wurden, umfasst die Bibliographie Bezeczys über sechzig Einzeltitel, Rezensionen und daneben eine Fülle von praxisorientierten Forschungsleistungen, von denen die Datenbanken zu Ephesos und Brijuni sicherlich die wichtigsten sind.

Tamás Bezeczy ist zu früh von uns gegangen, aber er hat ein reiches Erbe hinterlassen. Es ist den laufenden und zukünftigen Forschungen zu den römischen Transportamphoren zu wünschen, dass an diesem Erbe weiter gebaut werden kann.

An den Schluss darf ich mit freundlicher Erlaubnis einen Satz von Frau Anna Bezeczy stellen:

Ja, mein Mann hatte eine verkürzte Lebensdauer, aber ein volles Leben! Es wird einem selten zuteil, dass Arbeit, Beruf, Berufung und Hobby gleichzeitig zutreffen. Er hatte dieses Phänomen inne, dadurch war er ein glücklicher Mensch!

Wien, 2018

Friedrich Krinzing

INTRODUCTION AND ACKNOWLEDGEMENTS

The Austrian Science Fund (FWF) accepted the research project *The “Laecanius amphorae in Brijuni”* (P 23684) in 2011. The goal of the project was to publish the new Laecanius amphorae from the *Castrum villa* in Brijuni Island. The Laecanius amphora stamps and the villas of Brijuni (Bezeczky 1998a) described the amphorae which were available in the mid-1990s. But at that time it was not possible to study the amphorae in one of the Laecanius villas (*Castrum*). The many thousand finds (amphorae, tegulae, fine ware, glass, etc.) discovered during the villa excavations, with a few exceptions, were kept in the archaeological collection of the Brijuni National Park. Rarely do we have the opportunity to analyze a group of amphorae from the first century B.C. to the seventh century A.D. found in such a relatively small area (1 hectare). This made it clear that all of the excavated amphora groups needed to be published, not only those produced by the Laecanius family. An international team was formed, composed of the specialists who study food production in different parts of the Roman Empire and they contributed individual chapters.

In this volume, the reader will find a selection of the amphorae from the villa. The finds were grouped by place of production (Adriatic, Iberian, Eastern Mediterranean and African), and the articles are also published in this order. Various objects have already been published from the villa, primarily the architectural elements found during the excavations, tiles with stamp (e.g. works by Štefan Mlakar, Branko Marušić, Vlasta Begović, Ivančica Schrunk, Anton Vitasović, Robert Matijašić) and ceramic finds (see papers by Philipp M. Pröttel, Verena Vidrih Perko and Mira Pavletić). Our team examined all of the currently available amphora finds and selected the rim, base, neck and handle pieces of the most important amphora types to be presented. All of the pieces of the collection which bear a stamp or inscription have been included. Some 90 amphora types are represented, which contained olive oil, wine, fruit and fish products. One must differentiate between locally made and imported amphorae. The *Castrum villa* was a place where olive oil and wine were produced. It is necessary to

clarify what was produced when. In addition, there are two detailed analyses. One of them is concerned with a rare graffito on a Baetican amphora, the other with the abundant tile stamps. The new archaeometrical analyses of the Fažana amphorae started, they provide new data on the origin and method of production of the amphorae.

The discovery of the villas on Brijuni Island and the amphora workshops in Fažana can be attributed to a lucky accident. In 1893, during the Austro-Hungarian Monarchy, a wealthy industrial magnate, Paul Kupelwieser, bought the Brijuni Islands. He was determined to build a holiday resort, or in today's parlance, a wellness and recreation center. With the help of Robert Koch, the famous microbiologist, he eradicated malaria on the islands. During construction works for the roads and the hotel building foundations, Kupelwieser's workers discovered several Roman ruins. He contracted Anton Gnirs, a teacher in the “*Marinerealschule*” of Pula, to lead the archaeological excavations. Gnirs discovered several Roman buildings on the islands, Fažana and in Pula. After the Second World War, the Yugoslavian president Josip Broz Tito took a liking to the islands. One of his luxurious homes was in the vicinity of the *Castrum villa*. Later Tito himself was the driving force in the excavation of this villa. After his death, the islands were declared a National Park and parts of it were opened for the public.

The story of the *Castrum villa* is closely connected to the Laecanius family. Ancient and modern authors and the excavations provide a great deal of information about this family's history, economic activity, villas and amphora workshop. It is clear that their estates and the income that these estates produced went to the emperors after the last member of the family died without an heir. Less is known about the amphora workshop and villa in Fažana after the second century. Although the excavations brought a great deal of objects to light, our knowledge is incomplete in many ways. For instance, we do not know who used the villas in the mid- and late Roman periods. Regarding the excavated walls and objects, it is unclear which period the published maps belong

to. Various rooms in the villas were altered on several occasions in the Roman period as well as during the reconstruction following the excavations.

We only provide a short description of the Fažana workshop and the villas in Brijuni in this book, as some knowledge of them is necessary to understand the Castrum finds. There may be some overlap between individual chapters, but this is unavoidable in order to present the information coherently. We also refer to the rich bibliography for further information.

I would like to thank the directors of the Brijuni National Park, Sandro Dujmović, Eduard Kolić, and Mira Pavletić and the Croatian Ministry of Culture for granting permission to study and publish the amphorae.

I am grateful for the support I have received from the directors, past and present, of the Austrian Academy of Sciences, Institute for the Study of Ancient Culture, Friedrich Krinzinger and Andreas Pülz.

I would like to take this opportunity to thank Piero Berni Millet, Michel Bonifay, Claudio Capelli, Horacio González Cesteros, Sándor Józsa, Alexander Schobert, Martino La Torre and György Szakmány for their work. Thanks are also offered to Claudio Capelli, Sándor Józsa and György Szakmány; they prepared the petrological (thin section) analyses and the photomicrographs (1x1.3 mm) of the amphorae. The petrological description of the amphorae can be found in the catalogue. The technical assistance of Anna A. Nagy and Ozren Grozdanić is very much appreciated.

I am especially grateful to Péter Hornung for creating the FileMaker database. The amphorae, which are in an extremely fragmented state, will be uploaded and saved in the database.

Special thanks are due to Ágnes Bezeczky who translated parts of the manuscript (Chapters 1, 2, 4 and 13).

The photos were taken by Andreas Pülz, Martino La Torre and Tamás Bezeczky. For their permission to reproduce pictures which appear in the text we are grateful to Brijuni National Park.

The line drawings were prepared by Tamás Bezeczky, Piero Berni Millet and Horacio González Cesteros. Thanks are also due to Helka Németh who made the digital amphora drawings for publication. The drawings and photos are actual size on the plates. The scale of the rubbings is 1:1. Numbers in bold refer to the catalogue in the chapters on the amphorae.

While I was working on the amphorae, the archaeologists of many museums generously helped me: David Peacock (†), Paul Arthur, Martin Auer, Marianna Bressan, Silvia Cipriano, Ines Dörfler, Smiljan Gluščević, Jana Horvat, Simon Keay, Ida Koncani Uhać, Vladimir Kovačić, Goranka Lipovac Vrkljan, Stefania Mazzocchin, Péter Pánczél, Elena Quiri, Federica Rinalani, Florian Schimmer, Eleni Schindler-Kaudelka, Katalin Vanicsek, Paola Ventura, Péter Véninger, Reinhold Wedenig and Susanne Zabehlicky-Scheffenegger.

Vienna, 2017

Tamás Bezeczky (†)

LIST OF FIGURES

CHAPTER 1

ISTRIA AND THE AMPHORA WORKSHOPS

- 1.1 Map of Istria (Tabula Imperii Romani).
- 1.2 Map of Fažana workshop and kiln.
- 1.3 *Dolium* from Brijuni harbour, the position of the *dolia* in the Verige and Castrum villas.
- 1.4 Complete Laecanius amphora from Magdalensberg.
- 1.5 The distribution of the Fažana amphorae.

CHAPTER 2

THE VILLAS OF BRIJUNI

- 2.1 Map of Brijuni Islands and Fažana.
- 2.2 Map of the villa in Verige and the terrace building.
- 2.3 Map of the terrace building.
- 2.4 Map of Kolci villa.
- 2.5 Castrum villa after MĹAKAR 1975-76 and BEGOVIĆ – SCHRUNK 2007A.
- 2.6 Castrum villa, after MĹAKAR 1975-76.
- 2.7 Archive pictures from the excavations.
- 2.8 The first Roman villa.
- 2.9 Map of the first Roman villa.
- 2.10 Map of the second Roman villa.
- 2.11 The restored presses in the second villa.
- 2.12 In the *lucus*, *spicae* and *opus signinum* wall.
- 2.13 The oil cellar and fragmented *dolia* in the second villa.
- 2.14 Mill stone and a *mola olearia*.
- 2.15 Map of the third Roman villa.
- 2.16 The smaller cellar and the *dolia*.
- 2.17 Map of the Late Roman and Byzantine villa.
- 2.18 Wine presses installation.

CHAPTER 3

THE EARLY CHRISTIAN CHURCHES OF BRIJUNI

- 3.1 The Church of St. Mary.
- 3.2 Column of the main nave with impost and Greek cross.

- 3.3 Monolithic platform of the early Christian altar.
- 3.4 Triumphal arch supported by two monolithic columns with capitals and imposts.
- 3.5 Capital in the sanctuary with *crux coronata* emblems.
- 3.6 Presbytery with septum.
- 3.7 *Hospitium* (*domus presbyterorum*), northern annex.
- 3.8 Room with double apses (*cellae memoriae*), southern annex.
- 3.9 Sarcophagus, *narthex*.
- 3.10 The Church of St. Peter, main entrance.
- 3.11 *Peutinger Table pars V*.

CHAPTER 10

CALENDAR GRAFFITI ON DRESSSEL 20 AMPHORAE

- 10.1 A Dressel 20 globular amphora with a stamp, *tituli picti* and graffito.
- 10.2 Stages in the manufacture of the Dressel 20 amphora.
- 10.3 Nominal cursive graffiti.
- 10.4 Correlations between stamps and binominal graffiti on pottery from Villar de Brenes.
- 10.5 Calendar graffito from the first group.
- 10.6 Three calendar graffiti from the second group.
- 10.7 Calendar graffito by Lucio with a consular date of 23 June 158 A.D.
- 10.8 Calendar graffiti from the fourth group.
- 10.9 An unpublished graffito from the fourth group.
- 10.10 The large globular body of the Dressel 20 amphora from Brijuni with an *ante cocturam* calendar graffito on its base.
- 10.11 The disposable upper part of a Dressel 20 amphora found in Nijmegen and Augst and Kaiseraugst.
- 10.12 Calendar graffito on the base of a Dressel 20 amphora from Brijuni.
- 10.13 Brijuni calendar graffito.
- 10.14 Geographical distribution of the Asiaticus graffiti.
- 10.15 The Altenstadt graffito.
- 10.16 The Lincoln graffito.
- 10.17 The Wall graffito.

- 10.18 The Brough on Noe graffito.
- 10.19 The Saint-Thibéry graffito.
- 10.20 The Reims graffito.
- 10.21 The Béziers graffito, the Vindolanda graffito.
- 10.22 Melander graffiti: (1) Adelfa, (2) Testaccio.
- 10.23 Definite dates for all the months of the year.
- 10.24 *Titulus* δ and the stamp on a Dressel 20 amphora manufactured during the time of Caracalla (212-217 A.D.) and used in the year 224 A.D.

CHAPTER 11

INSCRIPTIONS ON LATERITE FINDS FROM BRIJUNI

- 11.1 The final letters EVPOR visible in the retrograde stamp on *imbrex*.
- 11.2 *Post cocturam* capacity graffiti on the *dolia* from Val Catena.

CHAPTER 12

MICROPETROGRAPHY OF THE FAŽANA AMPHORAE

- 12.1 Geological map of Istria with field sampling locations.
- 12.2 Terra rossa covers the Mesozoic limestone in the coastal zone of Istria.
- 12.3 Outcrop of flysch rock series from the interior of Istria, north of Zajci.
- 12.4 Raw material transported from Trieste bay.

LIST OF PLATES

THE AMPHORAE

- Plate 1 Lamboglia 2 (nos. 1-3), Dressel 6A (nos. 4-8), *ante* Dressel 6B (nos. 9-10) amphorae.
- Plate 2 Dressel 6B (nos. 11-24) amphorae.
- Plate 3 Dressel 6B (no. 25), Fažana 1 (no. 26), Fažana 2 (no. 27), Porto Recanati (nos. 28-29), Forlimpopoli (nos. 30-31), Aquincum 78 (nos. 32-33) amphorae.
- Plate 4 Dressel 2-4 (nos. 34-36), Dressel 7-11 (no. 37), Beltran IIA (no. 38), Dressel 14 (no. 39), Dressel 20 (nos. 40, 42-45), Almagro 50A/Key XXII (no. 46), Almagro 51A-B (nos. 47-48) amphorae.
- Plate 5 Dressel 20 (no. 41), Almagro 51C (no. 49), Beltran 68 (nos. 50-51) amphorae.
- Plate 6 Gauloise 4 (no. 52), Mid Roman 1 (nos. 53-54), Palatine East 1/LRA 1 (nos. 55-56), Crete TRC 2 (no. 57), Rhodian (nos. 58-60), Knidian (no. 61), Koan with pinched handle (no. 62), Koan (nos. 63-64) amphorae.
- Plate 7 Koan (no. 65), Dressel 5 (no. 66), Crétoise AC4 (nos. 67-69), Agora G 199/Pinched handle (no. 70), Agora F 66 (no. 71), Agora M 125 (no. 72), Agora M 279 similis (no. 73), Agora M 126 (nos. 74-76), Agora M 240 (no. 77), Kapitän I (no. 78) amphorae.
- Plate 8 Kapitän II (no. 79), Agora M 273 (no. 80), Late Roman Amphora 1 (nos. 81-86), Late Roman Amphora 2 (nos. 87-88), Late Roman Amphora 3 (nos. 89-90), Ephesus 56 (no. 91) amphorae.
- Plate 9 Ephesus 56 (no. 92), Agora M 307 (nos. 93-96), Late Roman Amphora / Gaza (nos. 97-99), Late Roman Amphora 13 (no. 100), Samos Cistern (no. 101), Beirut (no. 102), Cretan AC1C / MRC 3 (no. 103), M 235/6 (no. 104) amphorae.
- Plate 10 Late Roman Amphora 7 (no. 105), Sinope C (nos. 106-107), Hammamet 3 (no. 108), Tripolitanian III? (no. 109), Africana I A/B (no. 110), Africana I variant? (no. 111), Africana II A? (no. 112), Africana II B, Pseudo-Tripolitanian? (no. 113), Africana II C3 (no. 114), Africana II C (no. 115), Africana II D (no. 116), Africana II/III transitional (no. 117), Africana II variant (no. 118) amphorae.
- Plate 11 Africana II variant (no. 119), Africana III A (nos. 120-122), Africana III A/B (no. 123), Africana III B (nos. 124-126), Africana III C (no. 127), Spatheion 1? or Keay 35A (no. 128), Spatheion 1 (nos. 129-130), Spatheion 1 late (no. 131) amphorae.
- Plate 12 Spatheion 3A (no. 132), Spatheion 3B (no. 133), Spatheion 3C (nos. 134-136), Keay 3/5 or 64 (no. 137), Keay 8B (no. 138), Keay 59 and Keay 8B (no. 139), Keay 11B var. Keay 1984, Fig. 172.2 (no. 140), Keay 35A (no. 141), Keay 35B (no. 142), Keay 36 (no. 143), Keay 55 (nos. 144-145), Keay 57 (nos. 146, 147) amphorae.
- Plate 13 Keay 57 (no. 148), Keay 57-56-55 (no. 149), Keay 62 Q or Albenga 11/12 (nos. 150-152), Keay 62 (nos. 153-154), Keay 62 or 61? (no. 155), Keay 61 (nos. 156-157), Keay 61A/D (nos. 158-159), Keay 61? (no. 160), Keay 61C (no. 161), Keay 8A (nos. 162-163) amphorae.
- Plate 14 Keay 34 (nos. 164-166), Keay 1B ? (no. 167), Storage jars? (nos. 168-169), Miscellaneous (nos. 170-171, 173-178) amphorae.
- Plate 15 Miscellaneous (nos. 172, 179-184) amphorae.
- Plate 16 Lamboglia 2 (nos. 2-3), Dressel 6A (nos. 5, 7), Dressel 6B (nos. 11-19) amphora stamps.
- Plate 17 Dressel 6B (nos. 20-22), Beltran 2A (no. 38), Dressel 20 (no. 40), Late Roman Amphora 1 (no. 86), Late Roman Amphora 13 (no. 100), Hammamet 3A (no. 108), Africana III A/B (no. 123).
- Plate 18 Photomicrographs Dressel 6B (nos. 9, 11-17).
- Plate 19 Photomicrographs Dressel 6B (nos. 18-22), Beltran 68 (nos. 50-51), Hammamet 3A (no. 108).
- Plate 20 Photomicrographs Africana I A/B (no. 110), Africana I variant (no. 111), Africana II/III transitional (no. 117), Spatheion I ? or Keay 35A (no. 128), Spatheion I late (no. 131), Spatheion 3A (no. 132), Spatheion 3B (no. 133), Spatheion 3C (no. 134).

Plate 21 Photomicrographs Spatheion 3C (nos. 135-136), Keay 3/5 or 64 (no. 137), Keay 11B var. Keay 1984, Fig. 172.2 (no. 140), Keay 35A (no. 141), Keay 36 (no. 143), Keay 57 (nos. 146-147).

Plate 22 Photomicrographs Keay 62 Q or Albenga 11/12 (nos. 150-151), Keay 62 (no. 153), Keay 61? (no. 160), Keay 34 (nos. 164-166), Keay 1B? (no. 167).

CHAPTER 11

INSCRIPTIONS ON LATERITE FINDS FROM BRIJUNI

Plate 23 [M·ALBI·R]VFI (no. 1), IMP·AVG·G[ER] (no. 2), L·BARBI·L·L·EVPOR[IS] & L·BARBI·L·L·EVPOR[I] (no. 3), Q·G·NICEP (nos. 4a1, 4a2, 4a3, 4a4, 4a5), C·CEIONI·MAXI (nos. 5a1, 5a2), Q·CLODI·AMBROSI (no. 6a1).

Plate 24 Q·CLODI·AMBROSI (no. 6a2, 6a3, 6a4, 6a5, 6a6), A·FAESONI·AF (nos. 7a1, 7a2, 7a3, 7a4).

Plate 25 A·FAESONI·AF (nos. 7b1, 7b2, 7b3, 7b4, 7b5, 7b6).

Plate 26 A·FAESONI·AF (nos. 7b7, 7b8, 7b9, 7b10, 7b11, 7b12, 7b13, 7b14, 7b15, 7b16).

Plate 27 A·FAESONI·AF (nos. 7b17, 7b18, 7b19, 7b20, 7b21, 7b22, 7b23-GNIRS 1908, 7b23-MATIJAŠIĆ 1987, 7b24, 7b25).

Plate 28 A·FAESONI·AF (nos. 7b26, 7b27, 7b28, 7b29, 7b30, 7b31, 7b32, 7b33, 7b34, 7b35, 7b36, 7b37).

Plate 29 A·FAESONI·AF (nos. 7b38, 7b39, 7b40), C·FLAVI (nos. 8a1, 8b1, 8b2, 8b3, 8b4, 8c), L·FVLLONI (nos. 9a1, 9a2-GNIRS 1908, 9a2-MATIJAŠIĆ 1987, 9a3, 9a4, 9a5, 9a6, 9a7), C·IVLI·AFRICANI (no. 10).

Plate 30 C·LAECANI·P·F (no. 11a), LAEC (nos. 11b1, 11b2, 11b3-GNIRS 1904/1910, 11b3-MATIJAŠIĆ 1987, 11b4, 11b5, 11b6, 11b7, 11b8, 11c1, 11c2, 11c3, 11c4).

Plate 31 LAEC (no. 11d), PANSÆ·VIBI (nos. 12a1, 12a2, 12a3, 12a4, 12a5, 12a6, 12a7).

Plate 32 PANSÆ·VIBI (nos. 12a8, 12a9, 12a10, 12a11, 12a12), PANSIANA (12b, 12c1, 12c2, 12d1, 12d2).

Plate 33 TI·PANSIANA (nos. 12e, 12f), C·CAESAR·PANS (no. 12g), NER·CLAUD·P (no. 12h), PAN-

SIAN (no. 12i), L·PETR·AVIT (no. 13a), L·PETR (nos. 13b1, 13b2), M·SERI (nos. 14a1, 14a2, 14a3, 14a4).

Plate 34 M·SERI (nos. 14a5, 14a6, 14a7, 14b1, 14b2, 14b3), SISENNAE (no. 15), L·ST·IVSTI (no. 16), TRO-SI (nos. 17a1, 17a2, 17a3), *dolium* stamp ARIA(...) (no. 18), *dolium* graffito LXIII(...) (no. 19).

CHAPTER 12

MICROPETROGRAPHY OF THE FAŽANA AMPHORAE

Plate 35 Polarizing microscopic photos 1. Fired terra rossa soil (IST 12), 2. Chert grain in calcareous sandstone (flysch, IST 64b), 3. Chalcedony sponge spicule in calcareous sandstone (flysch, IST 64b), 4. Calcareous sandstone (flysch, IST 64b), 5. Micritic claystone (flysch, IST 31a), 6. Empty-shelled foraminifera in recent marine sediment (IST 16d), 7. Boring sponge traces on calcareous fragment in recent marine sediment (IST 17), 8. Opalic sponge spicule (acicular) in recent marine sediment (IST 17).

Plate 36 Polarizing microscopic photos 1. Opalic sponge spicule (sterraster) in recent marine sediment (IST 16), 2. Thin-shelled clam in recent marine sediment (IST 67), 3. Fired recent marine mud (IST 68), 4. Texture of typical amphora (Castrum 13), 5. Fired terra rossa (IST 12), 6. Chert grain in amphora (Castrum 14), 7. Microsparite filled globigerinida foraminifera in amphora (Castrum 18), 8. Micrites and mollusc skeleton fragment in amphora (Castrum 12).

Plate 37 Polarizing microscopic photos 1. Opaque filled globigerinida in amphora (Castrum 16), 2. Chalcedony sponge spicule and terra rossa inclusion in amphora (Castrum 13), 3. Empty-shelled foraminifera and opalic sponge spicule in amphora (Castrum 18), 4. Thin-shelled clam in amphora (Castrum 14), 5. Opalic sponge spicule (acicular) in amphora (Castrum 16), 6. Opalic sponge spicule (sterraster) in amphora (Castrum 16), 7. Boring sponge traces on calcareous fragment in amphora (Castrum 12), 8. Terra rossa soil fragment in amphora (Castrum 22).

SHORT HISTORY OF THE WORKSHOP AND THE VILLAS

1 ISTRIA AND THE AMPHORA WORKSHOPS

TAMÁS BEZECZKY

1 HISTORICAL BACKGROUND

Istria is a large peninsula located in the northeastern part of the Adriatic region. The Roman Senate considered the possibility of a military occupation of Istria several times during the second century B.C. This was one of the motives for founding the town of Aquileia.¹ The town, which was built at a strategically advantageous location, became the most significant trade centre at the head of the Adriatic. It also served as an important military base for the northern campaigns. It was in the interests of the Aquileian troops as well as the Italian merchants to develop a political and economic relationship with the areas north of the Alps. They had an excellent connection with the kingdom of Noricum, as evinced by the fact that the king Voccio sent three hundred Norican cavalrymen to support Caesar in the civil war against Pompey.²

The respectable Italian settlers who came in the wake of Julius Caesar's conquest promoted the Romanization of the region; Tergeste and Pola were granted the rank of *colonia*. Octavianus-Augustus' interest in the region started after the war against the Iapodes in 35-33 B.C. The advantages of the peninsula were discovered during this period. The ties between Italy and Istria developed quickly. As a result, the peninsula became part of *Regio X (Venetia et Histria)* between 18 and 12 B.C.³ Some believe that Istrian oil production replaced the production in Apulia during the late Republican period. The Apulian region went through an economic crisis, the result of which was a decline in oil production in Brindisi.⁴ The political changes offered economic opportunities for the new elite. Some of the investors probably came from southern Italy. The traces of several villas have been discovered from Tergeste to Pola.⁵ The owners of the villas were mainly senators and members of the Roman elite.⁶ The Roman proprietors of

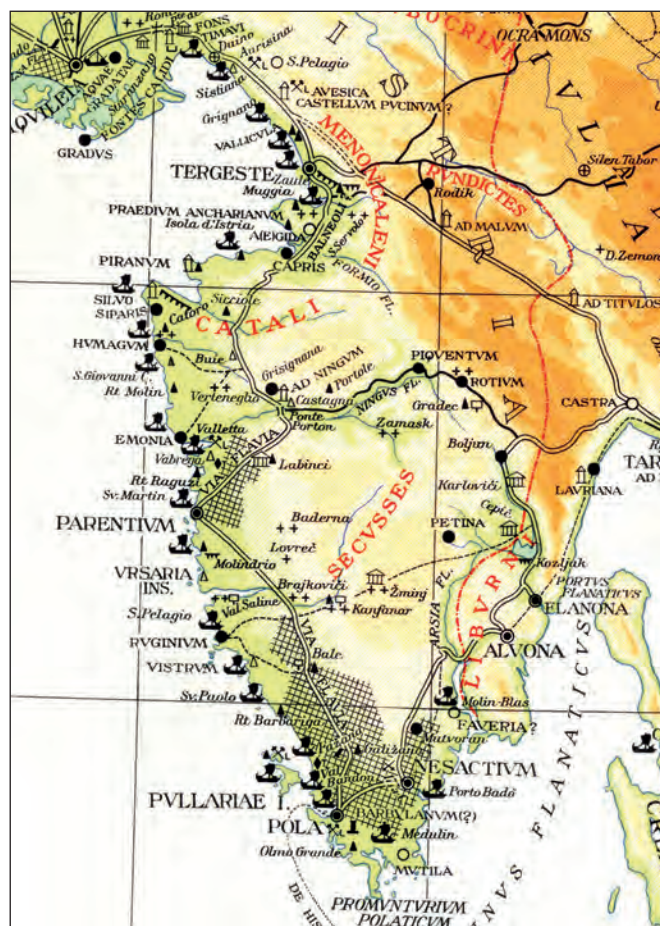


Fig. 1.1 Map of Istria (Tabula Imperii Romani).

the villas cultivated, harvested, and processed the olives (the ancient sources regarded Istrian olive oil as one of the best on the market) and wines.⁷ They also had their own presses,

¹ Livy 40, 34.

² Caesar BC 1, 18, 5.

³ DEGRASSI 1953, 54.

⁴ BALDACCIO 1967-68, 14; MANACORDA 1995, 177.

⁵ MATIJAŠIĆ 1988, 27-71, T 2-3.

⁶ TASSAUX 1983-84, 193-229.

⁷ Pliny the Elder mentions the olive oil from Istria and Baetica in his NH (15.9). Between 77 and 79 when he wrote the book, olive oil was only produced in Istria; production in northern Italy had already ceased. Thus, he praised only the oil of Venafrum. A little later, in about A.D. 102, Martial (12.63) mentioned the olive oil from Istria and Baetica in one of his epigrams. He also considered the Venafrum oil to be the best. Pausanias (10.32.19) in his travel book compared the Tithorea oil with the ones from Istria and Baetica. This description from the second century may have relied on either Pliny or Martial (or some other source), because at that time only Baetican or

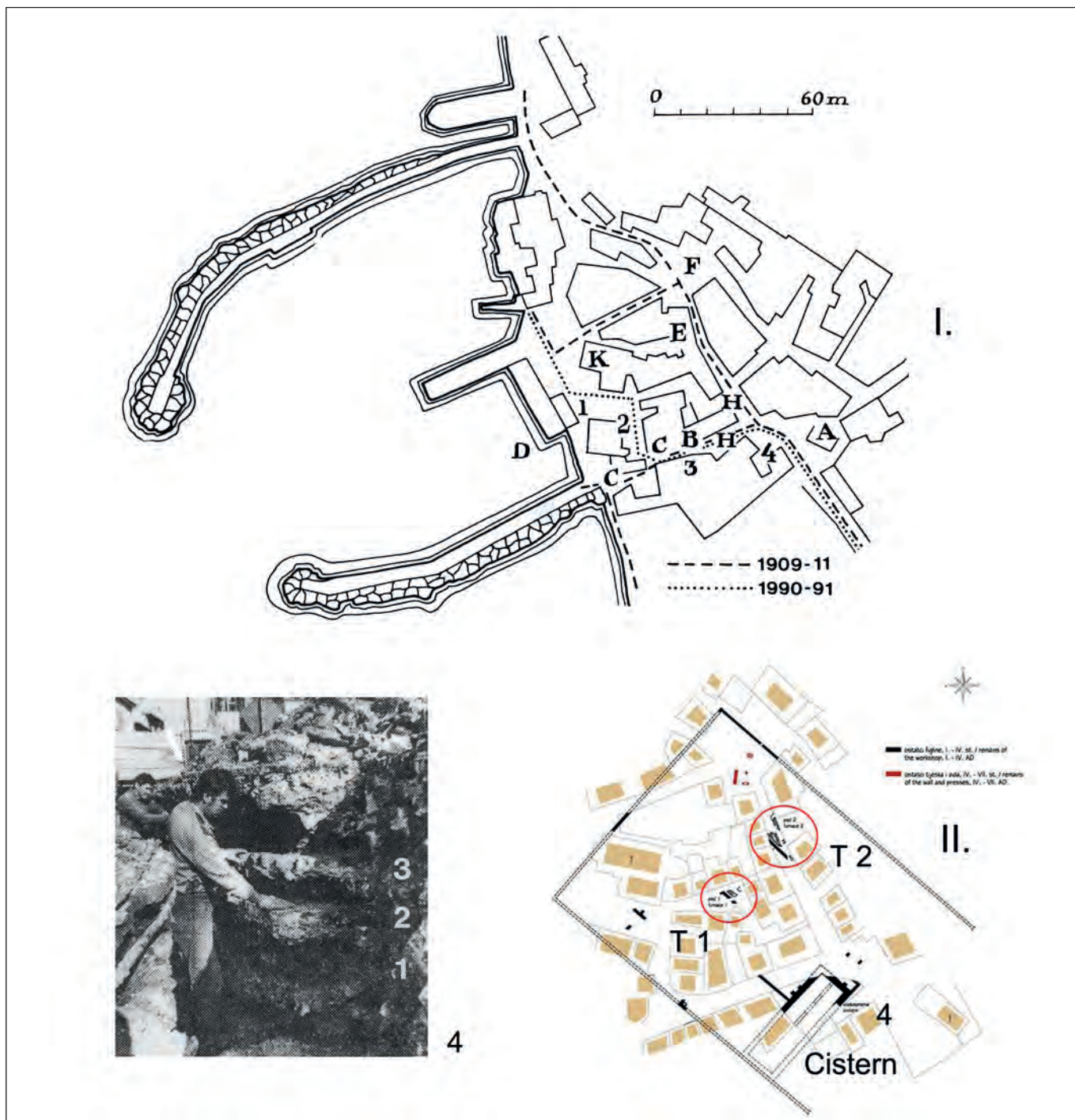


Fig. 1.2 Map of Fažana workshop and kiln, I. Map of Fažana, after GNIRS 1910: A - Sv. Marija Church. B - The site where the amphorae were found. C - The site of clay depots. D - Harbour. E - Amphora kiln. F - Ruins of the ancient *villa rustica*. G - Piazza del Duomo. H - The site where the Laecanius amphorae were found. K - Church, 1-2-3 Excavation 1990-1991; 4 - Trench with three floor levels (BEZECZKY 1998A, 4); II. Map of the excavation 2007-2009: after BULIĆ – KONČANI UHAČ 2011: T1 - Plan of the amphora kiln 1, T2 - Plan of the amphora kiln 2.

storage cellars, and ceramic workshops. However, there are only two excavated amphora workshops in the region. One *figlina* has been found near Poreč (Parentium) in the bay of Loron,⁸ and the other is in the north of Pula in Fažana. Stone inscriptions and roof tiles point to other workshops at Novigrad, near Piran, and near Trieste, which may have produced amphorae.⁹

2 THE FAŽANA WORKSHOP

Anton Gnirs' excavations at the beginning of the twentieth century found a kiln site under the modern buildings, marked it on a map and published the stamped amphorae.¹⁰ However, it seems probable that the description and the map were made only in connection with a new water main (plumbing). The excavations of 1990-1991 used similar methods. The excavated floor layers provided entirely new information regarding the possible existence of a villa to the south of the workshop.¹¹ Since this area is separated by a cistern from the workshop and the kiln, it is possible that there was a villa to house the workers of the workshop. This area may have been isolated from the workshop. Gnirs mentioned the ruins of a press and a *dolium* north of the kilns.¹² They must have been related to the production of olive oil. Another villa is supposed to be here but there is no precise information. Our knowledge increased considerably when the reconstruction of Fažana's road network began in 2007. The excavations

reports mention two kiln chambers, although most of the ruins are below modern buildings.¹³

There are three periods of the Fažana workshop:¹⁴

- In the first period (from ca. 40 B.C. to A.D. 78), the workshop was the property of the Laecanius *gens*. The Laecanius family died out without a direct heir in 78 A.D.

- In the second period (from the Flavian period to the period of Hadrian, from A.D. 78 to 138) both the property and the workshop were taken over by the emperor Vespasian and were integrated into *res privata*.

- During the third period (ca. the last third of the second century to the early third century), the amphorae of M. Aurelius Iustus were produced.

THE PRODUCTS OF THE WORKSHOP

The excavations make it clear that the workshop produced *dolia*, amphorae, stoppers, tiles, *spicae*, heating pipes, and clay lamps. The most important products of the workshop were the amphorae. Only two of the kiln chambers are known (Fig. 1.2, II). The material composition of the vessels sheds light on the production technology. The petrological analyses have shown that terra rossa, although available in the vicinity, was not the basic inclusion.¹⁵ The bulk of the raw material consisted of flysch. Only a small quantity of terra rossa and recent marine sediment were mixed or added as temper in Fažana. The geological study of the peninsula shows that flysch is available in large quantities in the Koper/Trieste bay. The Laecanii had huge properties near Trieste (Materia). It seems probable that this area provided the flysch necessary for the production. The amphorae filled with olive oil were shipped to the north Adriatic ports and Aquileia. Then the empty ships may have been filled with flysch as ballast.¹⁶ The types of ships the Laecanii used are not known, which makes it almost impossible to guess the quantity and frequency of the shipments. It was during the sailing season lasting from April to October that the necessary quantities of flysch had to be collected. The organization of the shipments must have been a major operation. Olive oil was stored in *dolia* in the villas and only before shipping was it filled into amphorae.

African oil was still available on the markets. Galen of Pergamon also mentioned Istrian oil at the end of the second century (BUONOPANE 2009, 27-28). Finally, it is worth mentioning the letter of Cassiodorus (Variae 12, 22-24) from 537/538. He writes about the plentiful harvest of oil, wine and wheat in Istria. They were shipped to Ravenna. However, we do not know what kind of vessels were used. Nor is it clear which part of Istria he was writing about.

⁸ A team consisting of Croatian, French and Italian members have been working since 1994 in Loron. They unearthed the ruins of the workshop and four chambers of the kiln. No villas have been excavated so far. The amphora stamps have the names of well-known persons. The owners of Loron were T. Statilius T.F.Taurus Sisenna, later the wife of Emperor Claudius MES.CAE (Mes(alinae) Cae(ari uxoris) and Calvia Crispinilla. The emperors (Domitian, Nerva, Traian and Hadrian); MARION – STARAC 2001, 97-118; TASSAUX 2001, 511-512; MANACORDA 2010, 217-227.

⁹ TASSAUX 2001, 512-517, with detailed bibliography; TITAC (Titia Tertia), THAL (L. Quinctus Thallus), L.TERENTI (), C.ALTEN (C. Altenus or Altenius), P.C.QVIR, TRAVL.ET.CRIS, CRISPINI, T.A.F. CRISPINAE; Koper: BEZECZKY 1985, P.ITVR.SAB (P. Iturius Sabinus); CIPRIANO 2009, 178.

¹⁰ GNIRS 1910A, 79-88; GNIRS 1910B, 102; GNIRS 1911B, 37-38.

¹¹ The rescue excavation was in 1991, see BEZECZKY – PAVLETIĆ 1996, 143-148, Fig. 3 and BEZECZKY 1998A, 4, Fig. 3.

¹² GNIRS 1910A, 81.

¹³ BULIĆ – KONCANI UHAČ 2009, 286-292; BULIĆ – KONCANI UHAČ 2011, 123-128.

¹⁴ BEZECZKY – PAVLETIĆ 1996, 147-148; BEZECZKY 1998A, 4.

¹⁵ JÓZSA *et al.* 2016; see Szakmány – Józsa in this volume; previous works: MANGE – BEZECZKY 2006; MANGE – BEZECZKY 2007; BEZECZKY – MANGE 2009.

¹⁶ See Fig. 12.4, Szakmány – Józsa in this volume.

3 THE OWNERS OF THE WORKSHOP: THE LAECANIUS GENS¹⁷

1. The first known member of the family in Istria was Publius Laecanius. He was born circa 90 B.C.

2. The son of Publius Caius Laecanius was also among the founders of Pula. His Dressel *ante* 6B amphorae and roof tiles have the C-LAECANI-P-F stamp.

3. His son Caius Laecanius was probably *decurio*. His roof tiles have the LAEC, his amphorae the C-LAEC-A stamp. He was probably born between 55 and 35 B.C.

4. His son Caius Laecanius Bassus was probably a knight. His amphorae have the C-LAEC-BASSI stamp. His amphorae are the first to have two stamps on the rim. (FELIX-SER). The Magdalensberg layers date them to 10-5 B.C.

5. Senator Caius Laecanius Bassus was *praetor urbanus* in A.D. 32 and *consul suffectus* in A.D. 40. The fragment of the *sodales augustales claudiales* mentions him as pater in the year 64.

6. His son C. Laecanius Bassus was *consul ordinarius* in 64 A.D. The junior Laecanius died of anthrax in 78, which is known from a remark of Pliny's.¹⁸

7. The Laecanii adopted C. Laecanius Bassus Caecina Paetus. He was *consul suffectus* in 70 and proconsul of Asia Minor (in Ephesus) in 78.¹⁹ He had properties near Minturnae, which are known from the inscriptions of his freedmen.

8. His son C. Laecanius Bassus Caecina Flaccus died in Brindisi when he was 18.

9. C. Laecanius Bassus Paccius Paelignus is also known. He had a dedication to Laecanius (6).

There is an important stone inscription from the period of Claudius that documents the property of the senator Laecanius pater (5). The inscription (CIL, V. 698 = ILS 5889 = *Inscr. It. X. 4, 376*) mentions a property in northern Istria at Materija next to the Rundictes tribe (today part of Slovenia).²⁰ This area used to be hills covered with woods, suitable only for animal farming and the timber industry. The Laecanius family must have had other properties. In Pula the Val San Pietro finds may be pieces of evidence.²¹

There is a stone inscription in Sv. Mihovil Bajolski (San Michele di Bagnole) near Vodnjan (Dignano) which was

offered to Jupiter by C. Laecanius Ialysos (CIL, V. 14 = *Inscr. It. X. 630*). There is another stone inscription in Guran, also near Vodnjan (Dignano), which mentioned C. Laecanius Amycus and his *matrimony* Phorbe.²² The names Ialis (or Iali) and Amycus occur on a number of amphora stamps and it seems reasonable that the persons mentioned in the inscription and the one who signed the amphorae are the same. The work of the workshop managers/*vilici* had to be organized. This may have been the job of C. Laecanius Menander, who was secretary to both the senators (CIL, V. 8142 = *Inscr. It. X. Reg. X, 1, 114*).

THE EMPERORS

Paolo Baldacci mentioned that the *figlina* in Fažana was taken over by the emperors after the family died out.²³ The fact that the estate was taken over by the emperors can be established from the evidence the stamping system offers. The production of the amphorae with the emperor's stamp was discontinued during Hadrian's era.

M. AVRELIVS IVSTVS

There is only one amphora with this name. M. Aurelius Iustus may have been a freedman who was responsible for the workshop and the production in the Castrum villa. There is a votive altar dedicated by M. Aurelius Iustus to the goddess Flora in the cemetery near the villa.²⁴ We have no more information about this person. He may have been a tenant (*conductor*) who paid rent to the Imperial treasury.

4 THE AMPHORA STAMPS

We have to update our knowledge and prepare a distinct chronology of the Laecanius and Imperial amphorae. Rescue excavations took place in Fažana, in the course of which new stamps were found and the kiln was excavated.²⁵ Many amphorae with Laecanius and Imperial stamps have been found outside Istria since 1998.²⁶ The list of the ca. 1 500

¹⁷ I shall follow the way TASSAUX 1998, 83 has reconstructed the Laecanius family tree.

¹⁸ Pliny NH 26.5.

¹⁹ TAEUBER 2011; BEZECZKY 2013, 221.

²⁰ CIL, V. 698 = ILS 5889 = IIt X 4, 376; SLAPŠAK 1977, 122-128; TASSAUX 1982, 248; MILOTIĆ – PETRAK 2012, 297-310.

²¹ GNIRS 1910B.

²² MATIJAŠIĆ 2001, 342-344.

²³ BALDACCİ 1967-68, 34.

²⁴ ILJug (Inscriptiones Latinae quae in Jugoslavia) 1204; MLAKAR 1979, 23-24; STARAC 1995, 138, note 27.

²⁵ PAIĆ – BULIĆ 2008, 17-40; BULIĆ 2009, 257-270.

²⁶ BELOTTI 2004; BEZECZKY 2005B, 49-50; BEZECZKY 2014; BULIĆ 2009, 264; CIPRIANO 2003; CIPRIANO 2008; CIPRIANO – FERARINI 2001; DŽIN – ŠALOV 2008; GABUCCI – QUIRI 2008; GOSTENČNIK 2002; GUGL 2003; GUGL 2004; MAZZOCCHIN 2006; MAZZOCCHIN 2007; MAZZOCCHIN 2010; MAZZOCCHIN 2013;

stamps can be updated almost on a daily basis. They provide us with an increasingly precise understanding of the Fažana workshop production.

In the late Republican period, an amphora rim with a single stamp C.LAECANI·P·F belongs to the earliest Istrian Dressel 6B form (*ante* 6B). The shape of the Laecanius amphorae changes somewhat and the classic Dressel 6B shape develops during the Augustan period. Every amphora produced in the Laecanius workshop at that time had two stamps on the rim. The stamp of Laecanius is at the centre (C·LAEC·BASSI), with the second stamp (FELIX·SER) above the handle. Later, from the Tiberian to the early Claudian period, the C·LAEC·BASSI stamp uses the letter “k” instead of a “c”. The Laecanii were the definitive producers and transporters of Istrian olive oil for over one hundred years.

From the Tiberian to the early Claudian period (Magdalensberg II) there are 41 different stamp types. The C·LAEC·BASSI stamp and its variants combined with the workshop manager / *vilicus* names (e.g. A, ADEL, ARCI, BAR, BARB, CAESI, CAR, CLARUS, COM, COMI, EUCHARISTI, FA, FAV, FELIX, FVI, HER, HERME, HOM, IALIS, IALI, L, OPI, OPTA, SPERATUS, SYNT, VIAT). Post Magdalensberg period I we know of 15 stamp types. The workshop managers' / *vilicus* names are different from the previous period (e.g. AMETHYSTI, AMYCUS, BAR, CRESCENTIS, DI, EUCHARISTI, FAL, MARTI, NICOMEDE, PIERI). Post Magdalensberg period II the amphorae produced then can be dated with some precision.

Before the death of Laecanius, we know of 4 *vilicus* / workshop manager stamps (CLYMEN, DATI, PAGANI, PTOLEM). These stamps also co-occur with the stamp of the emperor Vespasian. These are the pairs of stamps used during the reign of Vespasian: IMP (CLYME, CLYMEN, DAT, PAGANI, POLL), IMPE·VESP (BARNAE, PAGANI), IMP·VESP (COLONI, PAGANI), IMP·CAES·VESP (DAT, PTOLEM), IMP·CAES·VESP·AVG (CLYMEN). Titus: IMP·T and IMP·T·CAES·AVG; (BERENTS), IMP·T·CAES·AVG (PRIMIGEN); Domitian: IMP·DOMITI and IMP·DOM (LESBI); only one stamp is known from the time of Nerva: IMP·NERVE; Trajan: IMP·TRA (the stamp cannot be read with certainty:

MANI?; SERV, and there is an incomplete stamp ...VS); Hadrian: IMP·HAD.²⁷

The stamp of M. Aurelius Iustus is very different from the stamps of the Laecanian and Imperial amphorae. This is a stamp in hollow lettering, in the genitive case. Only one similar stamp was found during the new Fažana excavation: F♠A with a pattern of leaves.²⁸

The list of the stamps is in the APPENDIX.

5 THE PRODUCTION CAPACITY OF THE VILLAS AND THE DISTRIBUTION OF THE FAŽANA AMPHORAE

As we shall see later, three of the villas with olive cellars have been excavated on Brijuni. The *dolia* in the cellars may be suitable for finding out the volume of the olive oil production.

There are a number of fragmented *dolia* in the cellars. The capacity calculations were based on a complete *dolia* exhibited on the island (Fig. 1.3). Its form and material corresponds to the pieces in the *cellae olearia* in the Verige and Castrum villas. The capacity is approximately 1750 litres.²⁹ Gnirs found numbers on the side of some of the *dolia*.³⁰ The numbers may have referred to the quantity of the filled amphorae. However, we do not know when or who wrote these numbers on the *dolia*.

The villas thus had the following capacities: Verige / Val Catena 56, Kolci / Monte Collisi 100 and Castrum 48 *dolia*. Accordingly, the island produced about 357 000 litres of olive oil *per annum*, plus the unknown quantities of Fažana and Dragonera. This is, of course, a rough estimate. Around 9 400 amphorae would be needed to transport 357 000 litres of olive oil. It should also be added that the production may have fluctuated from year to year.

The capacity of the Dressel 6B amphorae was 37.9-39 litres. However, only a few complete amphorae are known.³¹

PAIĆ – BULIĆ 2008; PESAVENTO MATTIOLI *et al.* 2000; QUIRI 2009; QUIRI 2011; SAKL-OBERTHALER 2000; SCHIMMER 2009; SCHINDLER-KAUDELKA 2000; STARAC 2001; STARAC 2010A; TIUSSI 2008; TIUSSI 2010; TONIOLO 2011; VIDOŠEVIĆ 2003.

²⁷ Published from a private collection by STARAC 1994-95, 162, T 12.1.

²⁸ PAIĆ – BULIĆ 2008, 28, no. 34.

²⁹ I am grateful to Martino La Torre for the information: the ceramic capacity is approximately 403 l, which, if the gross density is 1.6, means that its weight when empty was around 645 kg. Thus, the *dolia* stood on a gravel bed to dry, and the convex shape of the floor was preserved.

³⁰ GNIRS 1908B, 179; BEZECZKY 1998A, 71-72; see also Berni Millet in this volume.

³¹ Ca. 12 congius = 39.3 litre. Complete amphorae Novaria: BEZECZKY 1998A, nos. 3, 195, 197, 361 and 405; Carreum Potentia: RIVA 1987, 92, Fig. 26, Pl. Va. 4 and Fig. 25, Pl. Va. 6a-b = BEZECZKY 1998A, nos. 439 and 624; Opitergium: CIPRIANO – FERRARINI 2001, 49,

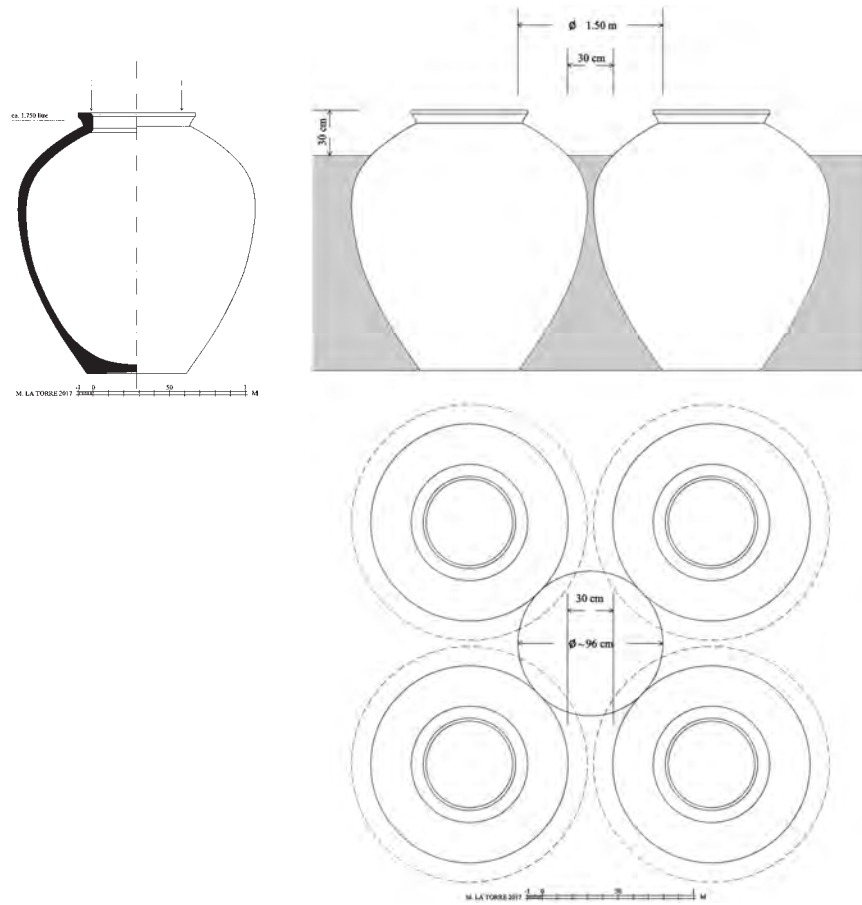


Fig. 1.3 *Dolium* from Brijuni harbour, the position of the *dolia* in the Verige and Castrum villas (Drawing: La Torre 2017, Photo: Bezeczky 2014).



Fig. 1.4 Complete Laecanius amphora from Magdalensberg; stamps: C-LAEK-B / FELIX-PET (Drawing: La Torre 2017, Photo: Bezeczky 2014).

The height of the amphorae was 87-92 cm (Fig. 1.4). The outer diameter of the 604 amphorae studied was 12-17 cm. The most common diameter of the rims was 14-16 cm. This is true of 85 % of the vessels. This also means that the potters followed the model quite closely.

We have little information about the size of the Fažana 1 and Fažana 2 amphorae. Only the upper parts are still around. The rim of the Fažana 1 amphorae was 12-14 cm, while that of the smaller Fažana 2 amphorae was 8-9 cm. We don't have complete amphorae in Fažana and Brijuni, which makes their capacity unknown.

The volume of production can only be guessed at on the basis of the amphorae which were found in more than 75 sites over the last 100 years. The Dressel 6B amphorae can be found in northern Italy along the Po valley all the way to Torino.³² In Raetia, the transportation route of the amphorae from Fažana can be traced to Curia, Bregens, Oberstim. In Noricum and Pannonia, along the Danube, Istrian oil was used all the way up to Aquincum in the north and Rittium in the south. In more central areas, the most important places where the amphorae have been found Magdalensberg, Aguntum, area Siscia, Sirmium and settlements along the Amber Route.³³

nos. 51, 54, 57, 58, 62, 65, 78 and 91; Patavium: PESAVENTO MATIOLI *et al.* 2000, 37-38, Figs. 4, 7; CIPRIANO – MAZZOCCHIN 1998, 365, no. 5, T 1, 5; Ateste: CIPRIANO – MAZZOCCHIN 1998, 365, no. 2, T 1, 2; Vicentia: MAZZOCCHIN 2013, 133, 25.11e; Magdalensberg: SCHINDLER-KAUDELKA 2000, 390, G1.

³² GABUCCI – QUIRI 2008, 68-69; MAZZOCCHIN 2013, 78-81; CIPRIANO 2009, 173-185; BEZECZKY 1998A, 75; BEZECZKY 2014, 247-252.

³³ BEZECZKY 1998A, 75, Fig. 47.