

THE SHIPWRECK OF GNALIĆ

A MIRROR TO THE RENAISSANCE WORLD

Irena Radić Rossi, Mariangela Nicolardi,
Mauro Bondioli, Katarina Batur



ARCO
HIAE
OPIR
TEISIS

The Shipwreck at Gnalić

A mirror to the Renaissance world

Irena Radić Rossi, Mariangela Nicolardi,
Mauro Bondioli, Katarina Batur



ARCHAEOPRESS PUBLISHING LTD

Summertown Pavilion

18-24 Middle Way

Summertown

Oxford OX2 7LG

www.archaeopress.com

ISBN 978-1-80327-150-7

ISBN 978-1-80327-151-4 (e-Pdf)

© Irena Radić Rossi, Mariangela Nicolardi, Mauro Bondioli, Katarina Batur and Archaeopress 2021

Peer reviewers: Josip Belamarić, Lovorka Čoralić, Irena Lazar and Pavuša Vežić

Translation: Apostrof, Zagreb.

Pursuant to the applicable Italian law (Legislative Decree of 22 January 2004, No. 42, Art. 108, c.3), on 6 May 2019 and 15 September 2021, the list of copies of the documents published in this book was submitted to the State Archives of Venice and Mantua.

All rights reserved. No part of this book may be reproduced, or transmitted, in any form or by any means, electronic, mechanical, photocopying or otherwise, without the prior written permission of the copyright owners.

This book is available direct from Archaeopress or from our website www.archaeopress.com

**All previous explorations of the shipwreck at the islet of Gnalić
have been made possible by:**

Croatian Ministry of Culture and Media

Croatian Science Foundation

University of Zadar

Tkon Municipality

ARS NAUTICA Institute for Maritime Heritage

Division for Marine and Environmental Research, Ruđer Bošković Institute

City of Biograd na Moru

Verein zur Förderung der Unterwasser-Archäologie – FUWA, Koblenz, DE

Center for Maritime Archaeology and Conservation – CMAC, Texas A&M University,

College Station, TX, USA

Istituto Superiore per la Conservazione ed il Restauro – ISCR, Ministero per i beni e le

attività culturali, Roma, IT

Institute of Nautical Archaeology, College Station, TX, USA

and numerous collaborators, students and volunteers from Croatia and abroad with
expertise in various fields

*And forthwith continues
the voyage
like
after a shipwreck
a survivor
a sea wolf*

Giuseppe Ungaretti, 'Allegria di naufragi'
(*The Joy of Shipwrecks*)

To Ksenija Radulić, Sofija Petricoli, Božidar Vilhar and all of their associates,
whose boundless enthusiasm and committed efforts have saved the site at
the islet of Gnalić and preserved it for future generations.

Contents

List of Figures.....	iii
Foreword.....	ix
1. Introduction.....	1
2. Geographic and historical framework	3
2.1. The islet of Gnalić and the island of Pašman	4
2.2. Historical circumstances.....	11
3. A sensational discovery and exciting explorations	22
3.1. Official discovery of the site	23
3.2. Research history in the 20th century.....	24
3.3. Recovered materials.....	39
3.4. Rescue from renewed neglect	53
3.5. New insights and findings.....	66
3.5.1. Identification of the colouring materials	85
4. An amazing historical tale	94
4.1. The ship <i>Lezza, Moceniga e Basadonna</i>	94
4.1.1. A new shipping company	95
4.1.2. Frane Antunov of Korčula (Francesco di Antonio da Curzola): shipwright, seafarer and inventor	97
4.1.3. Construction, equipping and launching of the ship	100
4.1.4. A floating palace	101
4.2. The heroes of Sazan	106
4.2.1. A merchant vessel's wartime role	106
4.2.2. Uluç Alì and the 'lions' of St. Mark	109
4.2.3. A dream demolished	114
4.2.4. Indemnity for loss of the ship.....	119
4.3. <i>Gagliana grossa</i> – an old ship with a new name	120
4.3.1. The Gagliano family: bankers, merchants, ship owners.....	121

4.3.2. An unpleasant diplomatic incident	124
4.3.3. Identity restored.....	127
4.3.4. Alvise Finardi: ordinary and extraordinary tales from the life of a seasoned seafarer	130
4.4. The final voyage of the <i>Gagliana grossa</i> (once called the <i>Lezza</i> , <i>Moceniga e</i> <i>Basadonna</i>)	136
4.4.1. Departure	138
4.4.2. The shipwreck and salvage of its cargo.....	142
4.4.3. The ship's little treasure.....	145
5. Epilogue	151
6. The Shipwreck at Gnalić – A Mirror to the Renaissance World	154
Bibliography	156

List of Figures and Tables

Figure 1. The usual navigation route from Venice to Constantinople, marked on the map of Europe and the Mediterranean from the Book of Navigation (Kitâb-ı Bahriye, 1525) by the Ottoman cartographer Piri Reis, Istanbul University.....	3
Figure 2. The islet of Gnalić, with the island of Pašman and the Pašman Channel behind it.....	4
Figure 3. View of the islet of Gnalić and the research vessel anchored over the site	5
Figure 4. Nautical chart of Zadar and its surroundings from the Book of Navigation (Kitâb-ı Bahriye, 1525) by the Ottoman cartographer Piri Reis, Walters Art Museum, Baltimore	6
Figure 5. Map of the Zadar and Šibenik archipelago with marked location of the site	6
Figure 6. Presumed coastline about 7000 years ago, when the sea level was 10 m lower than today, and the Pašman Channel did not yet exist	8
Figure 7. Dvor Ugrinić in the Crnika Forest above Ugrinići, 16th century	9
Figure 8. View of the southern part of the Pašman Channel, with Benedictine abbey on Čokovac Hill above Ugrinići, 12th century	9
Figure 9. View of the south-eastern part of the island of Pašman, Vrana Lake and nearby islands	10
Figure 10. Pustograd hillfort with the remains of a Late Antique fortress	11
Figure 11. View of the settlement of Pašman and the southeastern part of the Pašman Channel.....	12
Figure 12. Mainland Gate, Zadar	13
Figure 13. Cathedral of St. James, Šibenik	14
Figure 14. Fortress of St. Nicholas at the entrance to the St. Anthony Channel in front of Šibenik	14
Figure 15. View of destroyed Biograd; Konrad von Grünenberg, Beschreibung der Reise von Konstanz nach Jerusalem, 1487	15
Figure 16. A letter from Juraj Matković mentioning the reconstruction of Biograd	16
Figure 17. Political situation at the end of 16th century	17
Figure 18. Suđurađ Bay on the island of Šipan, birthplace of Nichollò Sagri	20
Figure 19. Copper cauldron for melting resin or tar, illegally extracted from the site in the mid-1960s	23
Figure 20. Research team in 1967	25
Figure 21. Recovery of a bronze gun with octagonal barrel in 1967	26
Figure 22. Bronze gun with octagonal barrel during recovery in 1967	26
Figure 23. Extraction of the smaller iron anchor in 1967	27
Figure 24. Iron anchors on the Biograd waterfront in 1967	27
Figure 25. Graphic representation of iron anchors with basic dimensions.....	28
Figure 26. Decorated bronze gun from the Alberghetti workshop	28
Figure 27. Detail of the bronze gun with decoration and initials of the caster	28

Figure 28. Detail of the bronze gun with the year of manufacture MDLXXXII (1582)	28
Figure 29. Ironclad chest recovered in 1967	29
Figure 30. Restored linen shirt; Local Heritage Museum Biograd na Moru.....	30
Figure 31. Restored woollen cap; Local Heritage Museum Biograd na Moru	30
Figure 32. Lorenzo Lotto, <i>Achitect</i> , 1535.....	30
Figure 33. Precision scales from the ironclad chest, and two sets of weights.....	31
Figure 34. Damask from the ironclad chest, originally folded and wrapped in coarse cloth, with accompanying lead seals bearing the marks of the textile merchants.....	31
Figure 35. Bale of silk damask, restored in the Abbeig Foundation in Riggisberg.....	32
Figure 36. Decorative pattern on silk damask	32
Figure 37. Situation on the seabed in 1967: bell-shaped ingots of mercury sulphide, used for the production of scarlet colour.....	33
Figure 38. Situation on the seabed in 1967: wooden packaging and parts of the ship's structure.....	33
Figure 39. Situation on the seabed in 1967: sheets of brass and bell-shaped ingots of mercury sulphide	33
Figure 40. Recovery of the millstone wheel in 1967	34
Figure 41. Millstone wheel.....	34
Figure 42. Glass bowl made by blowing technique, with engraved decoration	35
Figure 43. Blown-glass bowl decorated with spray and inlay	35
Figure 44. Simple blue blown-glass bowl	35
Figure 45. Ksenija Radulić, 'The Galley of Gnalić,' shot in 1972.....	36
Figure 46. Sofija Petricioli, 'The Galley of Gnalić,' shot in 1972.....	37
Figure 47. Božidar Vilhar, footage from the film <i>The galley of Gnalić</i> , shot in 1972.....	38
Figure 48. Graphic representation of eight bronze guns recovered from the site	40
Figure 49. Complex heraldic sign on a small gun of the <i>moschetto da braga</i> type.....	41
Figure 50. Metal cauldron from the ship's galley.....	42
Figure 51. Frying pan made of embossed copper sheet from the ship's galley	42
Figure 52. Lid made of embossed copper sheet from the ship's galley	42
Figure 53. Selection of pottery from ship equipment or cargo	43
Figure 54. Richly decorated ceramic bowls.....	43
Figure 55. Portable copper ember vessel, used to heat space or food (Tur. <i>mangal</i>) from ship equipment.....	44
Figure 56. Engraved inscription on the ember vessel, with the decoration in the form of the sultan's signature (Tur. <i>tuğra</i>).....	44
Figure 57. Bell-shaped ingots of mercury sulphide	45
Figure 58. Wooden box with tin bars from the ship's cargo	45
Figure 59. Stamp on tin bars, with the inscription GETO DE STAGNI (En. Tin cast) and a Venetian lion motif with the initials MC (Maggior Consiglio?).....	45
Figure 60. Reconstructed wooden barrel with conical ingots of lead white	45
Figure 61. Multiply folded packages of rolled brass sheet, 0.8-1 mm thick (Ger. <i>Bugmessing</i>)	46
Figure 62. Rolled brass sheets, 0.3-0.4 mm thick (Ger. <i>Rollmessing</i>).....	46
Figure 63. Large coils of brass wire	46
Figure 64. Simple round window panes.....	47
Figure 65. Rectangular mirror panes	47
Figure 66. Mould-blown lion-mask stem goblets.....	48
Figure 67. Blown-glass plain goblets with low hollow foot.....	48
Figure 68. Blown-glass plain goblets with low hollow foot.....	48

Figure 69. Multicolored glass beads from Venetian workshops	49
Figure 70. Brass wall sconces, probably originating from Nuremberg, decorated with an acanthus and fishtail motif (a) and a dolphin's head (b)	49
Figure 71. Brass chandelier from ship's cargo, probably originating from Nuremberg	50
Figure 72. Candlestick manufacturer; Hans Sachs, <i>Das Ständebuch</i> , illustrations by Jost Amman, Frankfurt am Main, 1568.	50
Figure 73. Spectacles with leather frames in wooden boxes in two sizes	50
Figure 74. Box of spectacles; Local Heritage Museum Biograd na Moru	51
Figure 75. Spectacles after restoration; Local Heritage Museum Biograd na Moru	51
Figure 76. Restored wooden box with brass forged hawk bells	52
Figure 77. Bell manufacturer; Hans Sachs, <i>Das Ständebuch</i> , illustrations by Jost Amman, Frankfurt am Main, 1568.	52
Figure 78. Non restored and restored brass pins	53
Figure 79. Restored set of forged and embossed brass thimbles	53
Figure 80. Thimble manufacturer; Hans Sachs, <i>Das Ständebuch</i> , illustrations by Jost Amman, Frankfurt am Main, 1568.	54
Figure 81. Cast brass and iron candle snuffer	54
Figure 82. Cast brass and iron candle snuffers	54
Figure 83. Seal of an unknown merchant with a cross and the initials P M, for marking wooden packaging, found in 1973, and lost today	55
Figure 84. Top side of the small barrel; Local Heritage Museum Biograd na Moru	55
Figure 85. Cooper; Hans Sachs, <i>Das Ständebuch</i> , illustrations by Jost Amman, Frankfurt am Main, 1568.	56
Figure 86. Reconstructed wooden packaging for products from the ship's cargo	56
Figure 87. Entirely preserved window panes in the surface layer of the site in 2005	57
Figure 88. Round table in Biograd na Moru in 2011	57
Figure 89. ROV survey on the site in 2011	58
Figure 90. Parts of wooden structure in the surface layer of the site in 2011	59
Figure 91. From 1967 to 2012 – 45 years later the excavation continued	60
Figure 92. Initial trench across the site in 2012	61
Figure 93. 3D visualisation of the excavated area in 2012	61
Figure 94. Discovering the hull in 2012	62
Figure 95. Discovered part of the hull in 2012	63
Figure 96. Ingots of lead white found during the excavation in 2012	63
Figure 97. Release of sidescan sonar at the site in 2013	64
Figure 98. Tracklines of the sidescan sonar, magnetometer and sub-bottom profiler survey in 2013	65
Figure 99. Result of the sub-bottom profiler survey in 2013	65
Figure 100. Release of the AUV Girona 500 of the Research Centre for Underwater Robotics of the University of Girona	66
Figure 101. Beginning of the mission of the AUV Girona 500's mission	66
Figure 102. Two-dimensional photomosaic of the site, made with the help of the AUV Girona 500, detail	67
Figure 103. Virtual 3D model of the site, made with the help of the AUV Girona 500, detail	67
Figure 104. Working sketch of the situation at the site, and the results of the 1967-1973 and 1996 research campaigns	68
Figure 105. Working sketch of the remains of wooden ship structure, discovered during the 1967-1973 and 1996 research campaigns	68

Figure 106. Orthogonal plan of the investigated part of the site in 2014, made on the basis of multilayer virtual 3D model.....	69
Figure 107. Orthogonal plan of the excavated part of the site in 2017, made on the basis of multilayer virtual 3D model.....	69
Figure 108. Orthogonal plan of the entire surface of the site	70
Figure 109. Documenting the ship's structure in 2018	71
Figure 110. Documenting the ship's pump area in 2018.....	72
Figure 111. View of the site during the research in 2017	72
Figure 112. View of the well-preserved part of the ship's structure during the 2018 survey – the central part of the ship with the mast step	73
Figure 113. Ship's pump area on the orthogonal plan of the site	73
Figure 114. Lower part of the pump tube.....	73
Figure 115. Drawing of the lower part of the pump tube, generated from a virtual 3D model of the find	74
Figure 116. Display of the appearance and use of the suction pump; G. Agricola, <i>De re metallica</i> , Basel, 1556.....	75
Figure 117. Cleaning of barrels filled with iron oxide-based colouring material.....	75
Figure 118. Cleaning of small barrels filled with conical ingots of lead white.....	75
Figure 119. Round window panes in the sediment rich in arsenic- based colouring material ..	76
Figure 120. Cleaning of ship structure with preserved traces of arsenic-based colouring material	76
Figure 122. Irregular clumps of mercury sulphide	77
Figure 123. Removal of elemental mercury from the sediment above the ship structure.....	77
Figure 124. 3D visualisation of the original appearance of the barrels, found <i>in situ</i> in the ship's hold	78
Figure 125. Preparation of carbon fibre substrate for extraction of preserved part of wooden barrel, conducted by B. Davidde and his team from the Institute for Conservation and Restoration of the Italian Ministry of Culture	78
Figure 126. Raising of the preserved part of the wooden barrel with the help of a carbon fibre substrate	78
Figure 127. Recovery of the preserved part of the wooden barrel.....	79
Figure 128. Initial conservation treatment of the recovered part of the barrel	79
Figure 129. Entirely preserved window pane	80
Figure 130. Decorated window pane found in the surface layer of the site	80
Figure 131. Layers of straw, used to protect the window panes during transport	80
Figure 132. Decorated window panes	80
Figure 133. Lead seal of the Venetian doge (Nicolò da Ponte, 1578-1585), found during underwater research in 2014	81
Figure 134. Lead seals found in 2014.....	82
Figure 135. Bronze medal of the Polish Brethren reformist movement or Minor Reformed Church of Poland.....	83
Figure 136. Glass beads collected on the surface of the site during one dive	84
Figure 137. Workshop on the typology of glass beads; Local Heritage Museum of Biograd na Moru.....	84
Figure 138. Glass bead in the shape of a gooseberry	84
Figure 139. Cleaning of the barrel area.....	87
Figure 140. Conical ingot of lead white	88
Figure 141. Leather-like material and straw around the lead white ingots	88

Figure 142. Barrels with red ochre on the orthogonal plan of the site, detail	89
Figure 143. Chunk of mercury sulphide	90
Figure 144. Chunks of lead (II, IV) oxide.....	90
Figure 145. Residue of realgar and pararealgar on a stone	90
Figure 146. Chunk of antimony (III) sulphide.....	90
Figure 147. Mercury in drops and small pools	91
Figure 148. Red lake pigment balls.....	91
Figure 149. Accumulation of barrels on the starboard of the ship's hold.....	93
Figure 150. Draft of the document on the establishment of the company <i>Lezze-Mocenigo-Basadonna</i>	96
Figure 151. Draft contract for the supply of oak for the construction of the ship <i>Lezza, Moceniga e Basadonna</i>	96
Figure 152. Drawing of the fortified town of Korčula, 1571	97
Figure 153. List of supervisors (Ven. <i>capi d'opera</i>) of the Venetian Arsenal, among whom is Frane Antunov of Korčula	98
Figure 154. Graphic reconstruction of the Venetian mould for making floor timbers, called <i>sesto</i>	98
Figure 155. Statement of Frane Antunov of Korčula confirming that he was the inventor of three-decked ships.....	99
Figure 156. Location of the Sant'Antonio shipyard on a map of Venice (Jacopo de' Barbari, 1500); within the detail of a shipyard with ships under construction.....	100
Figure 157. Comparison between the dimensions of the Doge's Palace in Piazza San Marco in Venice and the preliminary reconstructive hypothesis of the ship <i>Gagliana grossa</i> , formerly <i>Lezza, Moceniga e Basadonna</i>	102
Figure 158. Summary table of the number, size and volume of oak trunks necessary for the construction of the ship <i>Lezza, Moceniga e Basadonna</i> , obtained from the supply contract stipulated on 18 April 1567.....	103
Figure 159. Scheme of the structural elements of the wreck relating to the section shown on the left	104
Figure 160. Research area in relation to the ideal representation of a ship of appropriate dimensions.....	105
Figure 160a. Preliminary hypothesis for reconstruction of the original shape of the <i>Gagliana grossa</i> 's hull , based on historical documentation	105
Figure 161. Estimation of the carrying capacity of the ship <i>Lezza, Moceniga e Basadonna</i> at 12,000 stars (1,200 barrels), made by Arsenal experts	107
Figure 162. Giovanni Tommaso Costanzo.....	110
Figure 163. Representation of a large merchant ship from the second half of the 16th century in the Church of St. Stephen (S. Iseppo) in Venice, at the monumental tomb of Ivan of Vrana, Admiral of the galley of Sebastian Venier in the Battle of Lepanto	111
Figure 164. Uluç Ali.....	112
Figure 165. Attack of the Tuscan galleys on a merchant ship, engraving by Jacques Callot taken from the Report of the capture of two bertonis of Tunis, made in Corsica by four galleys of Tuscany this year 1617, 23 of November, Florence, Zanobi Pignoni.....	112
Figure 166. Drawing by Tiberio Ceruto of the Ottoman fortress in the Black Sea (Rumelihisari) in which he was imprisoned together with Giovanni Tommaso Costanzo	116
Figure 167. Tombstone of Matteo Costanzo, 1504.....	117
Figure 168. Giorgione altarpiece.....	118

Figure 169. Mourning robe worn by Scipio Costanzo during the funeral ceremony of his son Giovanni Tommaso	119
Figure 170. Declaration of 15 October 1571 on the armament of the ship <i>Lezza, Moceniga e Basadonna</i> , made by the foundryman Nicolò di Conti ; within the detail of the <i>petriere</i> gun from the site with the monogram of the Conti family's Venetian foundry	121
Figure 171. Document by which Arsenal experts estimate the value of ship's equipment	122
Figure 172. Genealogy of the da Gagliano family	123
Figure 173. Trademarks of Domenico and Odoardo da Gagliano	124
Figure 174. List of goods looted by the Knights of Santo Stefano on board the ship <i>Gagliana e Turiglia</i>	125
Figure 175. Confirmation of Alvise Finardi on taking over the gift box for the Venetian doge, handed over by the bailo on behalf of the <i>valide sultan</i> Nurbanu	130
Figure 176. Stone podium (Ven. <i>pietra del bando</i>) on the Rialto, a column of red granite with stone steps on the back of a kneeling Atlas.....	133
Figure 177. Pass for Alvise Finardi, issued by the Captain General of the Sea Sebastiano Venier ...	135
Figure 178. View of Hvar (Lesina); Konrad von Grünenberg, Beschreibung der Reise von Konstanz nach Jerusalem, 1487	137
Figure 179. Encrypted letter sent to Constantinople by Giovanni Francesco Morosini informing the Senate of the fire, and the Sultan's order of window panes	139
Figure 180. Sultan Murat III (1546-1595), son of Sultan Selim II and Nurbanu	140
Figure 181. Venetian Doge Nicolò da Ponte (1578-1585)	141
Figure 182. A notarial deed by which Antonio Platipodi hands over to the insurers the ownership of the lost goods in exchange for the agreed compensation, and his trademark.....	142
Figure 183. View of the bay Zaklopica (It. Porto Chiave) southeast of Tkon on the island Pašman, where the survivors of the shipwreck took refuge.....	144
Figure 184. Page from a letter sent by the merchant Guglielmo Helman on 27 September 1583 to Antonia Paruta, and Helman's trademark.....	147
Figure 185. Inventory and valuation of jewellery and precious stones rescued from the sunken ship.....	148
Figure 186. Tombstone of Alvise Finardi, placed next to the monumental tomb of his friend Ivan of Vrana in the Church of St. Stephen (Sant'Iseppo) in Venice	150
Figure 187. Map of the Mestre area with the indication of the position of the mill owned by Domenico da Gagliano	152
Figure 188. Origin of people, goods and events directly or indirectly related to the ship <i>Gagliana grossa</i>	155
Figure 189. Origin of people participating in the Gnalić shipwreck research.....	155
Figures 121, 121a. Discovery of irregular chunks of mercury sulphide.....	76

Foreword

Unlike official history, which passes over times past in large steps, the story about the ship that sank near Gnalić is full of personal human fates woven together from strands spanning the entirety of Late Renaissance Europe and the Mediterranean. Sailing on the route between Venice and Istanbul, the *Gagliana grossa*, formerly known as the *Lezza*, *Moceniga e Basadonna*, symbolically linked two apparently opposing but firmly intertwined worlds. Magnificent items that had spent four centuries on the seafloor briefly brought it fame in the 1960s and 1970s. But it only garnered genuine renown during the past few years, when the scholarly community finally began to examine the untapped information hidden in museum collections, in archival materials and at the actual shipwreck site.

Its discovery is largely due to Konstantin Šikić and Ivo Šimat Butica from Murter, who at one point, through Miljenko Barić, forwarded the relevant information to the proper institutions in Zadar. Among the many who deserve credit for the first investigations and salvaging of valuable finds at the end of the 1960s and early 1970s, the most noteworthy names are Ksenija Radulić, Sofija and Ivo Petricoli, Božidar Vilhar and Grga Oštrić. Young archaeologists Zdenko Brusić and Zlatko Gunjača and conservator Dalibor Martinović actively participated in the first campaigns, and several years later Marijan Orlić assumed leadership of the undersea aspect of the research. All of them, and many others, deserve thanks for saving the site from being forever forgotten and thoroughly looted.

Three decades later, an international group of experts led by Mitja Guštin, and consisting of Irena Lazar, Hugh Willmott and Caroline Jackson, used the example of glass finds to reignite interest in the ship's cargo and underscore the site's research potential. Zrinka Mileusnić and her associates highlighted the attractiveness of presenting these materials to the broader public.

After many years of effort undertaken by this publication's authors, in 2012 the University of Zadar once more launched research thanks to support from the Ministry of Culture, the Town of Biograd na Moru, the Tkon Municipality, the Croatian Science Foundation, Texas A&M University, the Ruđer Bošković Institute the Croatian Institute of History, the German Society for the Promotion of Underwater Archaeology (FUWA), the Biograd na Moru Local Heritage Museum, the Croatian History Museum, the

University of Zagreb Faculty of Electrical Engineering and Computing Science, the audiovisual production company Red Studio d.o.o., the ARS NAUTICA Institute of Maritime Heritage and many other Croatian and foreign institutions and organizations whose participation even today is contributing to the project's ongoing success. Joško Belamarić and Zlatko Uzelac deserve special mention for relaunching the project, as do many well-intentioned participants during the initial efforts in this regard, while Pavuša Vežić and Barbara Peranić provided vital support to the continuity of research work.

Research into and protection of the site and its finds in recent years have been considerably advanced by Matko Barišić, Vladimir Bermanec, Adelphine Bonneau, Patrick Casitti, Marco Ciabattini, Neven Cukrov, Matko Čvrljak, Barbara Davidde, Vincent Delmas, Ana Filep, Maria Geraga, Andrea Gobbi, Ela Jurdana, Željko Kwokal, Neven and Marko Lete, Nili Liphshitz, Davor Matešić, Nikola Mišković, Marco Morin, Stefan Nehring, George Papatheodorou, Martina Patriarca, Pere Ridao, Christa and Herbert Siepenkötter, Ines Šelendić, Franka Trcera and Antonio Vasiljević, while precise modern documentation and attractive photographic and video materials have been produced by Ivana Asić, Mirko Belošević, Marino Brzac, Suzana Čule, Vedran Dorušić, Tena Festini, Danijel and Ranko Frka, Dražen Gorički, Sebastian Govorčin, Matej Martinčak, Alan Meniga, Xavier Rodriguez Pandozi, Rodrigo Torres, Božo Vukičević and Kotaro Yamafune. Here as well, the list of names deserving credit is much longer, and the diversity of individual contributions is far greater.

In the 1970s, Astone Gasparetto successfully initiated the reconstruction of the relevant, long-past events. After a long pause, this painstaking task was taken up by Mauro Bondioli, whose dedicated work in the State Archives in Venice has yielded hundreds of documents, and he connected them to the multi-layered historical story told in another part of this book. He was assisted in these efforts by Benjamin Arbel, Anna Bellavitis, Paola Benussi, Giovanni Caniato, Isabella Cecchini, Lovorka Čoralić, John Davis, Claudio dell'Orso, Marco Di Pasquale, Eric Dursteller, Antonio Fabris, Maria Fusaro, Richard Goldthwaite, Vincenzo Mancini, Vittorio Mandelli, Alessandro Marzo Magno, Antonio Mazzucco, Luca Molà, Reinhold Müller, Serap Mumcu, Gianfranco Munerotto, Antonio Musarra, Maria Pia Pedani, Andrea Pelizza, Andrea Peressini, Stefano Piasentini, Claudio Povoło, Franco Rossi, Jan-Christoph Rößler, Mirko Sardelić, Alessandra Schiavon, Ana Šverko, Lorenzo Tommasin, Stefano Tosato, Alfredo Viggiano, Roberto Zago and Guglielmo Zanelli. With their linguistic suggestions, Vladimir Skračić and Nikola Vuletić contributed significantly to the final form of this text.

The list of those who participated in previous research today encompasses hundreds of names from all continents. We would like to convey our immeasurable gratitude to all of them for their support and cooperation, with hope and anticipation in future common work in stringing together the small pearls of this great historical tale.

1.

Introduction

In mid-autumn 1583, a large merchant ship laden with all manner of goods met an unfortunate fate near the islet of Gnalić, not far from Gnal Promontory at the far southern tip of the island of Pašman. It may have been the last in an entire series of exciting events in the life of a vessel, if – after being forgotten for almost four centuries – it had not been rediscovered by fishers and divers from the island of Murter in the early 1960s, and in a way they breathed new life into it.

News of the discovery was heard, unfortunately, in the global circles of ill-intentioned visitors to the seafloor who looted numerous items from this rich undersea site over the following decades, and much was irretrievably taken from the country. At the time of the earliest diving activities near the islet of Gnalić, the methodology for underwater archaeological research was still in its infancy, and the proper authorities had yet to exhibit sufficient interest in the protection and preservation of the undersea heritage. It was only recorded in the official register of sites in 1967, when news of the discovery had made its way to the proper institutions in Šibenik and Zadar. The first legally recovered finds excited the broader public and compelled experts to fully commit to an undertaking for which they were entirely unprepared. Thanks to their boundless enthusiasm and hard work, items that are even today breathtaking were raised from the seafloor.

Several exhibitions showed that the site had manifold potential, and for a time interest in its history bloomed. However, the initial excitement dissipated, financial support dried up, and an erroneous impression of exhaustive exploration of the site prevailed even in scholarly circles. Later attempts to relaunch research, although unsuccessful, demonstrated that neither underwater nor archival research, nor conservation and interpretation of the already removed items were nearly complete. Despite this, a full forty-five years had to pass before the conditions for systematic research work were met, and the local community became more seriously interested in the potential for the attractive presentation of the sunken ship and its exciting historical tale.

Systematic research conducted during the past several decades have thoroughly altered some of the initial hypotheses, and careful study of the documents held in the State Archives in Venice have resulted in many astonishing and unexpected discoveries. The story about the shipwreck grew and was enhanced with incredible details, intriguing

THE SHIPWRECK AT GNALIĆ

characters and their fates to such an extent that it began to resemble the script of a tense historical spectacle. It soon became apparent to all members of the project team that it was not simply an ordinary sunken ship at Gnalić, but also a clear reflection of the late Renaissance world.

2. Geographic and historical framework

The shipwreck near the islet of Gnalić occurred on a navigation route from Venice to Istanbul commonly used by merchant ships during the late Renaissance era (Figure 1). The eastern Adriatic navigation route, replete with safe harbours and protected channels, attracted many great powers for millennia, but the threats that loomed demanded well-organized surveillance and great seafaring experience. The expression ‘sailing the Adriatic’ was used in Athens during the Classical era as a synonym for notably perilous and unsafe navigation,¹ and the numerous wrecks of large vessels



Figure 1. The usual navigation route from Venice to Constantinople, marked on the map of Europe and the Mediterranean from the Book of Navigation (Kitâb-ı Bahriye, 1525) by the Ottoman cartographer Piri Reis, Istanbul University.

¹ Nikolanci, 1965: 717.