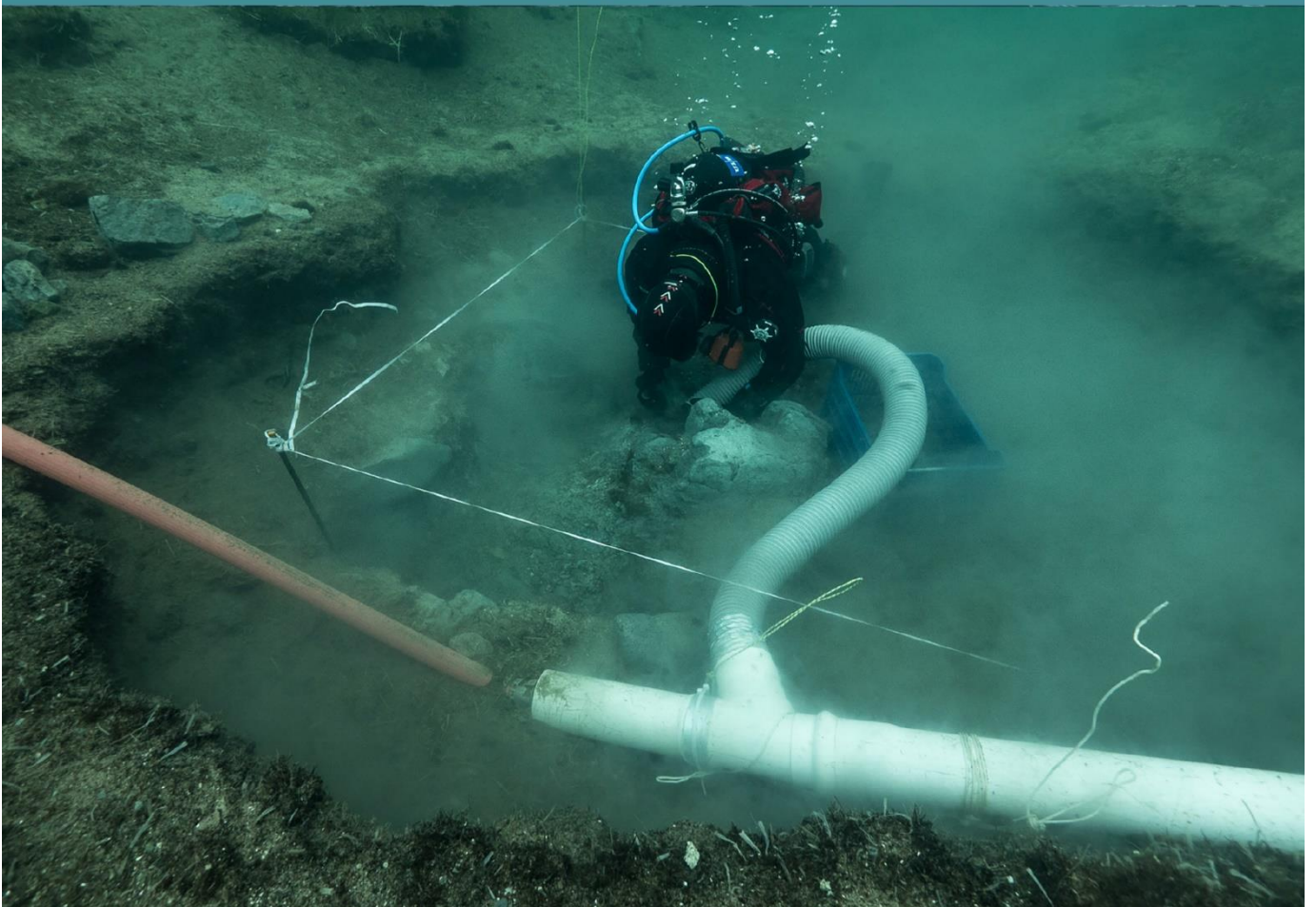


UNDERWATER AND COASTAL ARCHAEOLOGY IN LATIN AMERICA

Edited by Dolores Elkin and Christophe Delaere



Underwater and Coastal Archaeology in Latin America

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Diverse case studies that explore the relationship between humans and water environments

“An outstanding collection of research that highlights the diversity of approaches to the study of people and their relationships with aquatic landscapes in Latin America and the Caribbean.”—Amanda Evans, editor of *The Archaeology of Vernacular Watercraft*

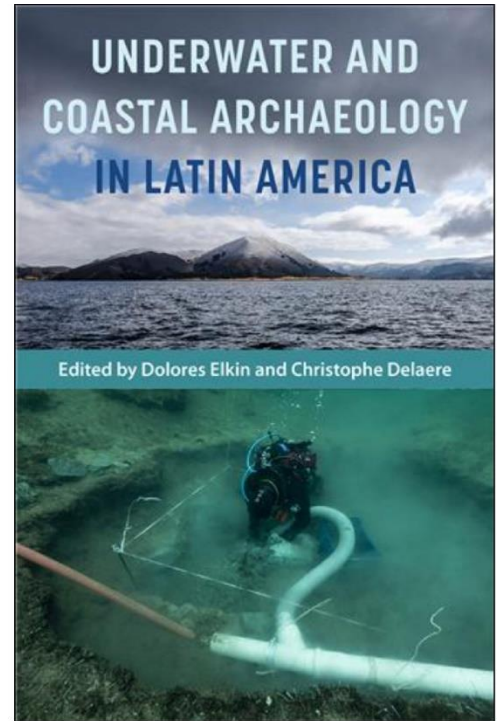
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Chapters on the pre-Hispanic period include an analysis of evidence about the exploitation of maritime resources, ritual practices related to water, ancestral navigation, and inundated cultural landscapes, addressing examples from Mesoamerica, the Central American isthmus, and the Andes. Historical case studies are also explored, including shipwrecks, harbors, and maritime coastal landscapes in the Caribbean, on the Atlantic coast, and in Patagonia. The countries represented comprise Mexico, Belize, Nicaragua, Panama, Ecuador, Peru, Bolivia, Chile, Cuba, **Venezuela**, the Dominican Republic, Colombia, Brazil, Argentina, and Uruguay.

The material landscapes of oceans, lakes, and rivers discussed in this volume contribute to a better understanding of the dynamic relationships between humans and their environments over time. By integrating the study of behaviors associated with waterscapes into the interpretations of past and current cultures, this volume introduces new ways of seeing Latin America.

Dolores Elkin is principal researcher at Argentina's National Council for Scientific and Technical Research (CONICET) and director of the underwater archaeology program at the National Institute of Anthropology and Latin American Thought. **Christophe Delaere** is researcher at the Center for Archaeological Research and Heritage at the Université libre de Bruxelles.



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The Shipwreck of the French Fleet in Las Aves de Sotavento, Venezuela

A Seventeenth-Century Maritime Disaster

JOSÉ MIGUEL PÉREZ-GÓMEZ

In the seventeenth century, the Caribbean was the site of complex hostile activities. By the last quarter of that century, the Dutch had turned their attention to the region. On May 6, 1676, Vice-Admiral Jacob Binckes landed 900 men at Cayenne, French Guiana, virtually without resistance (Goslinga 1971; Black 1999; Marley 2010). Immediately after that, the Dutch took St. Martin, an island that French and Dutch colonists had long shared and that had become consolidated under French rule (Goslinga 1971).

News of Dutch naval military activities soon reached France, where Jean-Baptiste Colbert, Louis XIV's finance minister, asked Vice-Admiral Jean d'Estrées to make a plan to drive the Dutch out of various places in the Caribbean and Africa.¹ Comte d'Estrées suggested a way to carry the maritime war to both the Dutch and the Spanish at very little expense: he envisioned an operation that would use only seven or eight warships in the English Channel. Soon, however, he expanded his proposal to include an attack on the Spanish treasure fleet.²

In the autumn of 1677, d'Estrées' strongest French fleet in the Americas consisted of seven ships of the line that each had 50 to 68 guns, four fourth- and fifth-rate ships that each had 34 to 44 guns, five *fluyts* (cargo vessels), and four fireships. The Marquis de Grancey, who commanded *Le Tonnant*, which had 64 guns, was second in command. In 1713, the king commissioned one of the fleet's commanders, Comte de Blénac, as governor-general of the French West Indies (Crouse 1943).

Over the centuries, reports have attested to numerous shipwreck events along Venezuela's more than 2,700 kilometers of maritime coast. However,

only some have been identified. According to historical sources, more than sixty ships were reported lost from the sixteenth through the twentieth centuries in Venezuelan waters (Rojas [1891] 1972; Nectario María 1979; Cardot 1982; Araúz Monfante 1984; Britto García 1998). Most have not yet been adequately studied. Although Venezuelan law protects underwater archaeological and cultural heritage sites (Instituto del Patrimonio Cultural 1993), many have been disturbed by treasure hunters.

This chapter presents archaeological and historical evidence of a French fleet that struck the reefs of Las Aves Archipelago in Venezuela on May 11, 1678. The fleet consisted of thirty vessels, of which at least twelve sank during this event. It concludes with a call to protect the study area, which constitutes both a maritime cultural resource and an underwater heritage site.

The Wreck of the French Fleet

The French crews on men-of-war and *fluyts* manned by *flibustiers* (privateers), were in unfamiliar waters when they reached the Venezuelan coast in May 1678. Because of changing currents and imperfect instruments, they did not have accurate information about location points (Dessert 1996). In addition, d'Estrées dismissed his pilot's corrections on the afternoon of May 11, 1678. Believing the fleet was 20–25 miles north of La Orchila Island, he ordered his captains to sail south-southwest.³ The fleet's small scouting vessels hit a reef between nine and ten o'clock that night (Urdaneta 1997). When those stranded crafts fired their guns to warn the rest of the fleet, the captains who saw the gunfire assumed that their admiral had engaged with enemies. Hoisting full sail, they ran aground within half a mile of each other (Dampier 1968).

The ships remained whole the following day. Although many men drowned, most managed to get onto the reef. However, numerous sailors perished afterward through lack of experience with handling such a hardship. Only those accustomed to accidents of this type, such as the *flibustiers*, survived thanks to provisions that floated ashore on the currents (Dampier 1968). Seven huge men-of-war, three transport vessels, and three *flibustiers* were stranded but largely intact. Although the reefs destroyed most of them later, these vessels kept many hundreds of sailors alive (Goslinga 1971).

The number of dead is unknown; estimates range from 80 to 500.⁴ According to Nicholas de Méricourt, the captain of *Le Terrible*, d'Estrées was solely at fault because he ignored his recommendations.⁵ Ignorance on the part of the admiral has long been the traditional explanation for the disaster. However,

historian Daniel Dessert, who has studied the incident, concluded that Méricourt's testimony amounted to little more than a fabrication (Dessert 1996).

In material terms, the Las Aves catastrophe was equivalent to a naval defeat. Most artillery pieces were too valuable to leave behind (Lenman 2009), and Captain Job Forant was immediately dispatched to retrieve them.⁶ Given the size and weight of most cannons and other objects, the rescue operations must have been difficult. In addition to their heavy weight, the cannons were attached to carriages. Although most carriages probably had fast-release clamps (Boudriot 1986), these would have been more difficult to release under water. In some cases, cannons and their carriages were lifted together.⁷ Historical sources record that Forant's rescue expedition retrieved 364 cannons of the 500 pieces that sank plus 3,000 cannonballs.⁸

The Study Area

Las Aves Archipelago is located 90 miles north of the Venezuelan port of La Guaira, some 30 miles west of Los Roques Archipelago and 33 miles east of Bonaire (fig. 19.1). It includes the Aves de Sotavento and Barlovento island groups. In total, the islands occupy an area of about 355 square meters. Most of these islands, which vary in size, have shallow banks and barrier reefs. Sev-

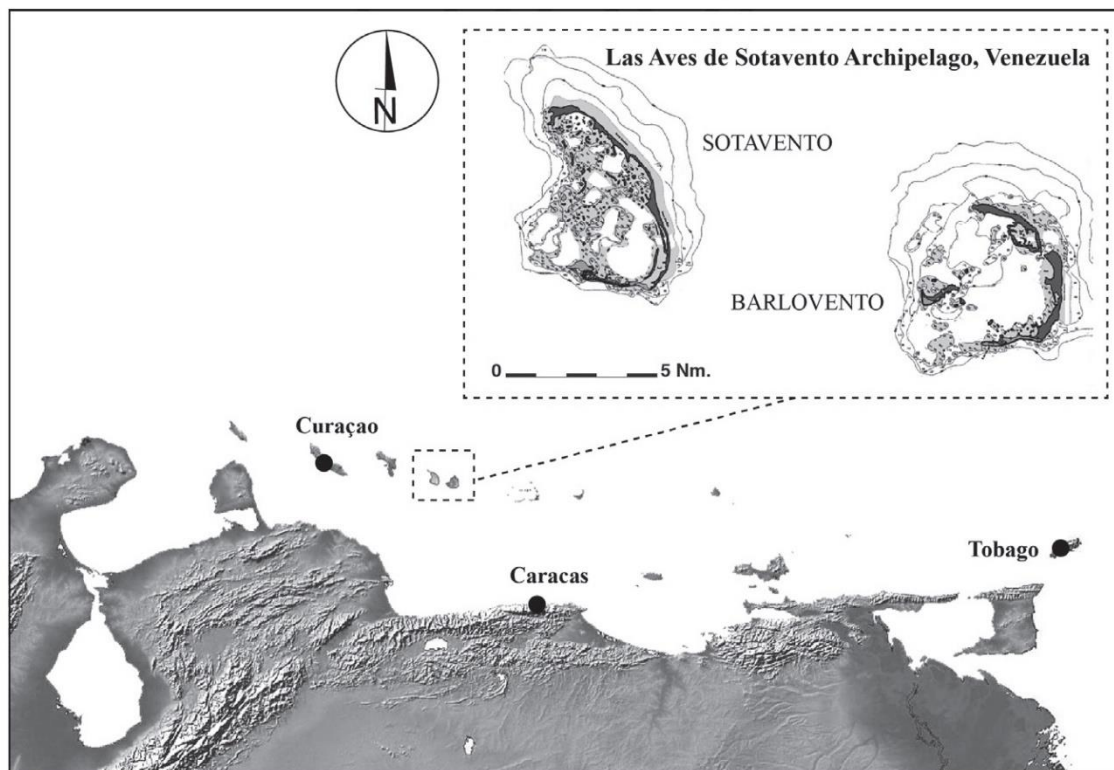


Figure 19.1. Map of Las Aves Archipelago in its broader geographical context. Image modified from Shuttle Radar Topography Mission (SRTM ©JPL 2000).

eral small keys are calcareous formations where sediments and reefs lie on Late Pleistocene limestone terraces. Las Aves de Sotavento and Barlovento, which are separated from the mainland by a 1,000-meter-deep marine channel, are considered oceanic islands because they were never connected to the continent by land bridges (Antczak and Antczak 2006).

Thanks to information from local fishermen, several cannons and anchors were found at Las Aves de Sotavento in the 1970s. In 1988, Venezuelan authorities authorized an archaeological project to evaluate these findings. A team of researchers performed two field surveys in the period 1988 to 1999 under the auspices of the Instituto del Patrimonio Cultural with the assistance of the Venezuelan navy. During these campaigns, the researchers discovered 273 artifacts (Pérez-Gómez 2016). Although the expectation was that the assemblage collected during these campaigns would pertain to the French fleet, doubts arose because some artifacts appeared to be from later shipwrecks.

Can analysis of this evidence combined with rigorous cataloging definitively link these artifacts to the events of May 1678? If so, can the cannons, anchors, and other objects be associated with specific vessels of the French fleet, including their accompanying privateer ships? We have researched historical sources, compared the typological and chronological features of the artifacts collected, and used satellite images to plot their GPS positions on the fatal reef. Through these multiple lines of research we have assessed the possible association of the artifacts with ships of the wrecked French fleet.

Historical Documents and Archaeological Evidence

The map prepared by King Louis XIV's royal cartographer, Nicolas Sanson d'Abbeville, in 1639 shows Las Aves islands separated by a small island in the middle.⁹ However, it omits the huge reef. According to our preliminary map studies, d'Estrées drew the first detailed map of the archipelago, perhaps before he departed from the disaster site. The map situates the wrecked vessels, including the privateer ships.¹⁰ The French fleet's crash into the reef changed the cartography of most of the Leeward Antilles and the Caribbean, as can be seen in Johannes Van Keulen's map of 1695, which depicts Las Aves Archipelago with enormous reefs that feature large arch shapes, similar to those seen on modern nautical charts (Pérez-Gómez 2016).¹¹

The most accurate description of the wreck of the fleet that is known so far comes from an unknown map dated 1678 that was recently found in a rare book in the Huntington Library in San Marino, California (fig. 19.2).¹² The book also contains printed and manuscript maps and charts from Dutch, French, Spanish, Portuguese, and English sources (Lenman 2009). The 1678

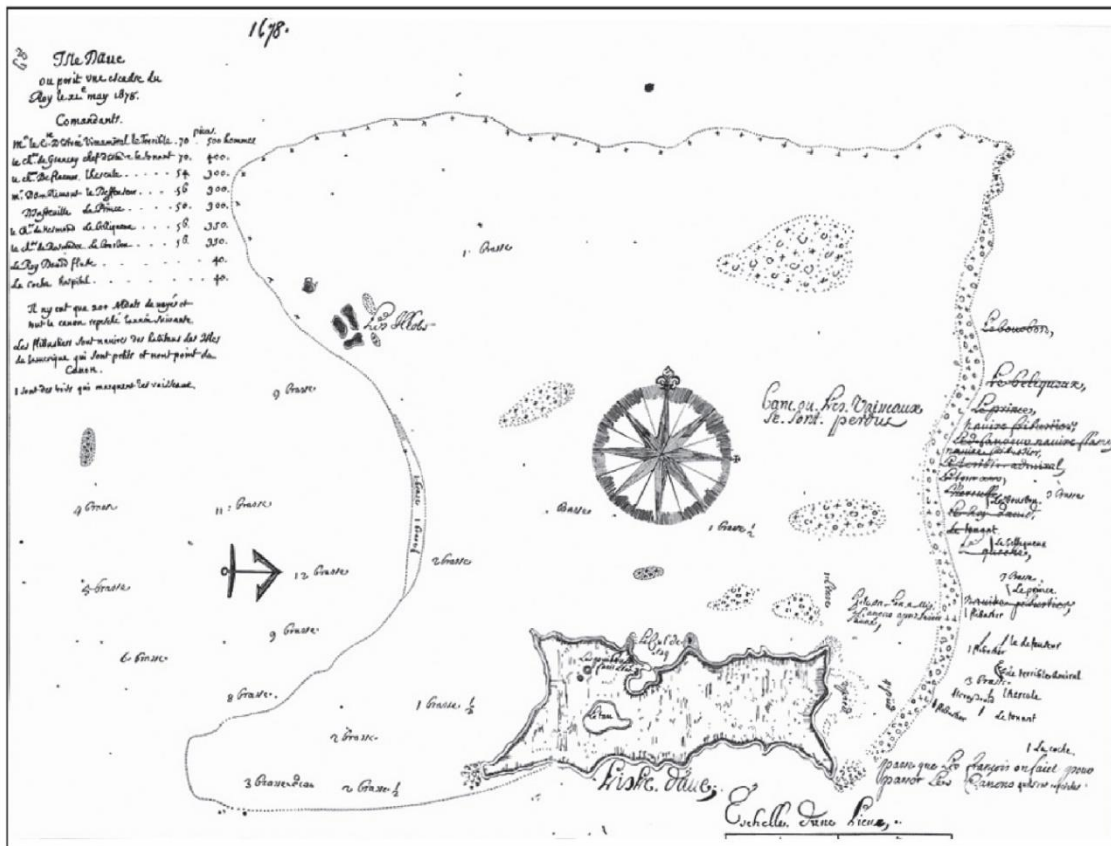
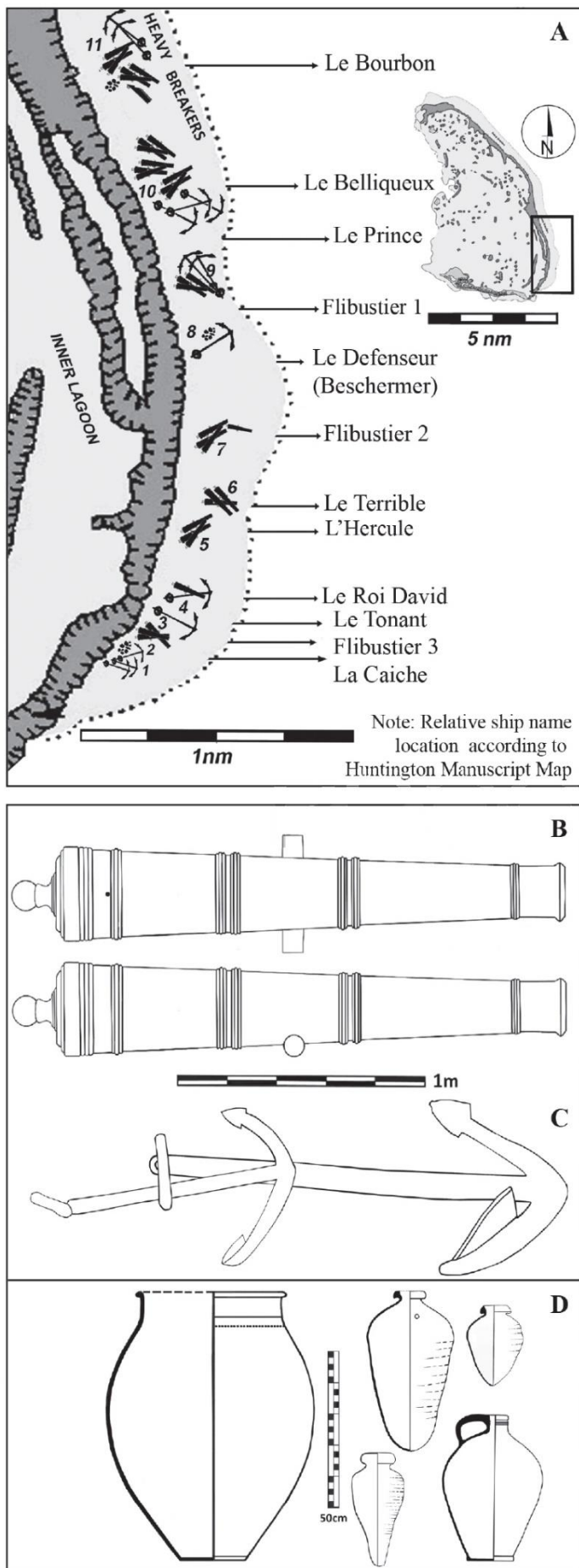


Figure 19.2. Huntington Library manuscript map of 1678. The top left corner provides names of the commanders, names of ships, and numbers of guns and crew. Source: Huntington Library Rare Book #109496, San Marino, California.

map includes careful observations that corrected earlier annotated sitings of the shipwreck, suggesting that it might be related to Job Forant’s expedition to rescue the cannons in 1679.¹³

During 1998–1999 survey campaigns to the archipelago, the research team used GPS to detect and record a number of artifacts, many of which were located in association with one another. Sand partially covered most of the objects recovered from the reefs and those located in the direction of the inner lagoon. Some exhibited hard encrustations. The artifacts were stabilized for conservation and research immediately after collection. By the end of December 1999, the assemblage included 273 artifacts in three categories: arms, ship items, and kitchen items. Some artifacts seem to correspond to the period 1750–1820, suggesting that other French vessels wrecked on this site.

Because of a lack of adequate resources and the fact that artifacts were dispersed over more than 5 kilometers along the treacherous reef, geophysical or remote sensing surveys have not yet been possible. Nonetheless, the data that has already been evaluated has led to the assessment of the site’s significance and to the elaboration of a preliminary site map that displays the positions of cannons, anchors, and ballast on the reef next to the location of ships accord-



F

Figure 19.3. (A) Preliminary site plan of the French shipwreck at Las Aves showing dispersion of cannons, anchors, and ballast and the location of ships according to the Huntington Library manuscript map (cartographer unknown); (B) cannon recovered from the site in the 1970s; (C) two kedgers observed at the site arranged in sailing position on the floor of the reef; (D) types of earthenware containers recovered at the site. Reconstruction drawings by José Miguel Pérez-Gómez.

Table 19.1. Ships included in “Isle Daue ou perit une escadre du Roy le xie May 1678”

Ship name	Rate	Where built/Year	Tons	Crew	Guns
<i>Le Terrible</i>	2nd	Brest/1669–1670	1100–1300	500	70
<i>Le Tonnant</i>	2nd	Brest/1669–1671	1100–1300	400	70
<i>L’Hercule</i>	3rd	Brest/1673	800–1050	300	54
<i>Le Defenseur</i> (<i>De Beschermmer</i>)	3rd	Amsterdam/1665*	800–1050	300	54–56
<i>Le Prince</i>	3rd	Rochefort/1668–1670	800–1050	300	50
<i>Le Belliqueux</i>	3rd	Rochefort/1666–1667	800–1050	350	56
<i>Le Bourbon</i>	3rd	Brest/1669–1670	800–1050	350	56
<i>Le Roi David (fluyt)</i>	5th	—	550–300	40	14
<i>Le Caïche (hospital)</i>	5th	—	550–300	40	57
<i>Flibustiers</i> (3)	—	—	—	—	—

Sources: “Isle Daue ou perit une escadre du Roy le xie May 1678,” in *Composite Atlas of Early Printed and Manuscript Maps of the Americas, Probably Compiled in France*, after p. 32, Huntington Library Rare Book #109496, Huntington Library, San Marino, CA. Additional annotations from Bender (2014) are indicated with an asterisk.

ing to historical sources (fig. 19.3A). Preliminary results indicate that because of the large quantity of artillery and anchors, there can be no doubt we are dealing with a large naval force at Las Aves de Sotavento. This conclusion aligns with French historical sources from 1678 that speak of twelve sunken ships (table 19.1) of enormous size. In total, they carried over 2,580 men and more than 412 guns.¹⁴¹⁴

Most cannons that have been evaluated were made of cast iron, although we know from historical documents that some ships such as *Le Terrible* and *Le Tonnant* carried some made of bronze. None of the latter were sighted (Pérez-Gómez 2016) among the ninety-four cannons that were observed scattered along the reef. The team positioned the cannons they could see with GPS and plotted them. They also mapped other pieces of artillery, including two cannonballs. The cannons that were sighted under water were of various sizes and calibers (Pérez-Gómez 2016). Additional documentary research estimates that the sunken French ships carried a total of over 500 cannons (Villette-Mursay 1991). The first surveys found several stacks of cannons. Some were in piles of more than thirty pieces, a circumstance that perhaps points to the recovery operations conducted in 1679 (Pérez-Gómez 2016). Unfortunately, recent surveys have shown that treasure hunters who were possibly searching for bronze pieces have disturbed these piles.

A cannon rescued in the early 1970s from the site at Las Aves was recently researched and documented at a yacht club in the *La Guaira* area (fig. 19.3B). The cannon, perhaps made in France in the late seventeenth century, is a cast-iron eight-pounder 2.2 meters long that weighed between 900 and 1,000 kilograms. In addition to cannons, large amounts of lead shot with no visible mold lines were identified at different locations on the sea floor along the reef (Pérez-Gómez 2016), suggesting mass production using a trencher (Scott 1899; Brown 1980). The material is similar in size to examples of shot found at Rockley Bay in Tobago (Batchvarov 2016). This possibly indicates that most of the Las Aves shot was grapeshot; that is, a cluster of small projectiles fired simultaneously from a cannon to produce a hail of shot (Ortiz Martínez 2011).

Large French ships with seventy or more cannons used up to six anchors, although only four served to secure a vessel (Boudriot 1986, 1988). Fifteen anchors were documented and recorded with GPS at Las Aves de Sotavento. Some were quite large, measuring over 5 meters, and could have been bowers (anchors carried at a ship's bow). These were the most massive pieces on a large vessel and were positioned for use in an emergency (Upham 2001; Steffy 2011, 2012). Smaller anchors such as kedgers were also documented on the seafloor (Pérez-Gómez 2016). Used in narrow inlets, kedgers would have been carried in one of the ship's boats at the end of a long cable. Until the end of the nineteenth century, the complement was usually two kedgers and four bowers (Curryer 1999). Most kedgers from Las Aves showed no trace of use (Figure 19.3, C).

A variety of kitchen-related artifacts, mainly for food and drink, were mapped and recovered during survey campaigns at the Las Aves de Sotavento site. The materials studied included an assemblage of olive jars (Marken 1994; Perez-Gomez 2020), fragments of a large earthenware vessel for storing water (Avery 1997; Romero Vidal and Cabasa 1999), and two fragments of a stoneware water jar (Barber 1907; Gaimster 1997; Skerry and Hood 2009) (fig. 19.3C). Although olive jars were used and produced primarily by Spaniards during the exploration and colonization of the Americas, they have also been recovered from Portuguese, English, and French archaeological sites (Stephen 1988).

Vast quantities of other artifacts, including a particularly small olive jar (fig. 19.3D) that was probably used as a honey container (Martin 1979; Marken 1994; Goggin 1960; Perez-Gomez 2020), were mapped and collected for further study (Pérez-Gómez 2016). The olive jar appeared to be identical to those found in the wrecks of the *San Antonio* (1621), the *Atocha* (1622), the *Santa Ana Maria* (1627), and the *Santa Margarita* (Marken 1994; Avery

1997; Perez-Gomez 2020). Other objects at the shipwreck site were similar to materials Carruthers recorded at the Santo Domingo monastery and those Carter recorded in Fermeuse Harbour in Newfoundland (Carruthers 2003; Carter 1982)

Conclusion

Archaeological study of this shipwrecked group has contextualized it on Las Aves de Sotavento reef in the Las Aves Archipelago in Venezuela. Team members also examined several historical sources of the time, including nautical charts. The study of mid-seventeenth-century charts reveals that the French did not have enough information to sail safely in this particular area of the Caribbean. That is the why they experienced a tragedy comparable to a military defeat. According to our historical and archaeological research, seven huge men-of-war, two transport vessels, and three ships belonging to privateers wrecked at Las Aves de Sotavento, an event at which an estimated 80 to 500 men perished. Las Aves is thus not only an underwater heritage site but also a memorial ground.

Preliminary investigation into the distribution of the shipwreck's artifacts shows that they are clustered along the first two nautical miles of the reef. Nearly 100 artillery pieces of distinct calibers, some grouped in piles of over thirty cannons, and fifteen anchors lie along the reef. Once these were analyzed and compared to information on the Huntington Library map, their dispersion proved to be consistent with annotations on the map. Typological and functional category studies performed on some of the artifacts showed that crews transported some of these materials not as cargo but as utilitarian ceramics and tableware. This fact, together with the many cannons and anchors, coheres with historical sources in confirming the presence of a large military fleet.

This research serves as an essential starting point for understanding a notable shipwreck better and provides a significant reference for further studies. The seventeenth-century French shipwreck in Las Aves de Sotavento Archipelago records a crucial historical moment. It also argues for the protection of this maritime cultural resource, perhaps one of the largest and most primary shipwreck sites in the Atlantic World and the Caribbean.

Acknowledgments

I would like to thank the Instituto de Patrimonio Cultural de Venezuela, the Armada Nacional Bolivariana, the Fundación Los Roques, and the Fundación Museo del Mar for making the initial campaigns to the study area and for making the research possible. I am very grateful to Dr. Charles Brewer-Carías, Dr. Chris Underwood, Dr. Dolores Elkin, Dr. Christophe Delaere, Dr. Martijn Manders, Dr. Alasdair Brooks, and Drs. Marlena and Andrzej Antczak for their invaluable support and guidance during this ongoing research.

Notes

- 1 Colbert to d'Estrées, Lettres du 1–29 Mai 1676, folio 156, 5v–7, Mar/B2/33 and d'Estrées to Colbert, April 1, 1677, folios 370–372v, Mar/B4/7, both in Archives Nationales, France. See also Ly (1993).
- 2 “Relation de la prise de Cayenne et de la bataille navale de Tobago, ainsi que de la prise de cette ile,” 1676–1677, folios 437–439, Mar/B4/7, Archives Nationales, France.
- 3 “Relation du naufrage de l'escadre des Isles, arrivé à l'Isle-des-Oiseaux, au mois de mai 1678, par le sieur de Méricourt, avec sa lettre du 3 juin 1678,” folios 261–274, Mar/B4/8, Archives Nationales, France.
- 4 “Isle Daue ou perit une escadre du Roy le xie May 1678,” in *Composite Atlas of Early Printed and Manuscript Maps of the Americas, Probably Compiled in France*, after p. 32, Huntington Library Rare Book #109496, Huntington Library, San Marino, CA. See also Villette-Mursay (1991), Newton (1933), and Dessert (1996).
- 5 “Journal de l'expédition de l'escadre de Forant commandant le Fendant, destinée à récupérer les canons perdus lors du naufrage des îles d'Aves,” 1678/1679, folio 459, Lettres de Forant, Mar/B4/8, Archives Nationales, France. See also Goslinga (1971).
- 6 “Journal de l'expédition de l'escadre de Forant commandant le Fendant”; see also Dampier (1968) and Dessert (1996).
- 7 “Plan de la pesche des canons en l'isle d'Avez dite isle des oisiaux en l'Amerique meridionale aux environs de la Guadeloupe,” 1679, GE SH 18 PF 154 DIV 9 P 3 D, Bibliothèque Nationale de France.
- 8 “Journal de l'expédition de l'escadre de Forant commandant le Fendant”; see also Villette-Mursay (1991).
- 9 Nicholas Sanson d'Abbeville, “Les Isles Antilles,” map, 1639, 291382, Biblioteca Nacional do Brasil, Rio de Janeiro.
- 10 “Plan du lieu ou le naufrage de Mr. le C. de Estrées est arrivé le 21 may 1678,” GE SH 18 PF 154 DIV 9 P 1 D, Bibliothèque Nationale de France.
- 11 Johannes Van Keulen, *Pas-kaart van de Zee kusten van Veneçuela*, map, 1695, Amsterdam. This map can be seen at “Zeekaart van de kust van Venezuela, met de Benedenwindse Eilanden, met inzetkaarten van de rede van Tortuga en een kaart van Curaçao,” The Memory, <https://geheugen.delpher.nl/en/geheugen/view/zeekaart-kust-venezuela-benedenwindse-eilanden-inzetkaarten-rede-tortuga-kaart-cura-ao-vooght-cj?coll>

=ngvn&maxperpage=36&page=1&query=van+keulen+venezuela&identifier=NESA01%3AK04-0350.

- 12 “Isle Daue ou perit une escadre du Roy le xie may 1678.”
- 13 “Journal de l’expédition de l’escadre de Forant commandant le Fendant.” See also Lenman (2009) and Pérez-Gómez (2016).
- 14 “Isle Daue ou perit une escadre du Roy le xie may 1678.”

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