

Gallery Guide

The Third Coast:
Mapping the Gulf of Mexico and the Caribbean Sea

Gallery Guide Editor and Exhibition Curator
Katherine R. Goodwin

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The Third Coast: The Mapping of the Gulf of Mexico and the Caribbean Sea

The Exhibition

Introduction

An old children's poem begins, "In fourteen hundred and ninety-two, Columbus sailed the ocean blue." Taught long ago to help school children remember a turning point in world history, it also reminds us that a great cartographic adventure began with Columbus's landfall in a "New World." In the five hundred years since this first encounter, the mapping of the newly found Gulf of Mexico and the Caribbean Sea has provided the catalyst for emerging arts and sciences to document the movement of people and ideas out of Europe. And, despite numerous textual accounts, including journals and diaries, maps continue to best illuminate the rapid movement into, and exploitation of, the New World.

The cradle of New World exploration and discovery, the Gulf of Mexico and the Caribbean, has intrigued and challenged mapmakers for hundreds of years. Today the area is bordered on the north and west by the United States, Mexico and Central America. The islands of the region, many now independent countries, run from the southern tip of Florida to the northeastern corner of South America. This vast area of sea and ocean, shore and land, was first depicted on a 1507 map produced by the eminent geographer, Martin Waldseemüller. The map was a compilation of information retrieved from the explorers who sailed not only on the four historic voyages of Christopher Columbus, but also others who were beginning to dip into the waters west and south of the Old World. It was the mapmakers in the early 16th century who gave substance to the names and descriptions reported by these explorers.

It also will be mapmakers in the following four hundred years who will chronicle the hopes and ambitions of kings, ministers, presidents, and cabinets, as sovereigns and governments sought to control the peoples and lands of this New World. Moreover, increasingly sophisticated maps and charts document the exploration and settlement of the land. Coincidentally, the printer's art also will expand along with the scientific discoveries in navigation and surveying.

The maps of this exhibition focus on the Gulf of Mexico and the Caribbean and have been selected to highlight the mapmaker's efforts at portraying the region in the complex scientific and political atmosphere after discovery. The exhibition is not comprehensive, nor is it intended to be. Rather, the maps on display reveal selected aspects of the cartographic history of the region from 1507 to 1900. The exhibition is divided into five periods. The first is defined by exploration and discovery of the region, beginning with the maps produced during the first decades after Columbus's historic voyages in the late fifteenth and early sixteenth centuries. A group of scholars, cosmographers, geographers and printers assimilated the new discoveries on a variety of printed maps and, in the process, changed the view of the world dramatically. The second period represents works produced by some of the great Dutch mapmakers as that country came to dominate shipping and finance during the late sixteenth and early seventeenth centuries. The commercial interests in the Gulf of Mexico and the Caribbean are clearly evident in their works. It is interesting to note that in this

era when ships and shipping are focused on economic gains, the maps and sea charts display some of the most beautiful examples of the mapmaker's art. The French mapmakers are the focus of the third period of the exhibition, and they bring a more scientific approach to the industry that is centered in Paris in the mid-seventeenth to mid-eighteenth centuries. France sought to become a major power in North America and saw an advantage in claiming lands cartographically. They established an official cartographic agency to assist with those aims.

The fourth period of the exhibition reveals the rise of British power at the end of the eighteenth century, as her colonization efforts spread around the world. Her goals are most evident in North America, where she comes in conflict with both French and Spanish interests. English mapmakers, who previously copied works of the Dutch and French, also come into their own as the map industry flourishes in London, and English productions become some of the most sought after maps. In the fifth period of the exhibition, the focus is on the Americans, as the map trade finally settles on the North American continent beginning in the early decades of the nineteenth century. Philadelphia map and atlas firms take the lead, with New York publishing houses close behind. Chicago garners the map trade honors in the mid-years of the century, as the wax-engraving process revolutionizes the industry. The American contribution closes on the

impressive work produced by the United States Coast Surveys in the Gulf of Mexico during the mid to later years of the nineteenth century. As a final glimpse at the entrance to the New World, the exhibition brings together a few of the items that were produced for publication by the Spanish over the centuries. As secretive as they were, the Spanish government did allow a few publications to filter into the map trade. These maps, atlases and geographies are important in documenting the claims to the Gulf and Caribbean, of course, but more important they reveal the attitudes of one of the greatest of the New World powers.

The maps and atlases are drawn from the collections housed in the Virginia Garrett Cartographic History Library of The University of Texas at Arlington Libraries and the private collections of members of the Texas Map Society. The maps are, with one exception, original publications produced from woodcut block prints, copper engravings, steel plate engravings, lithographs, and wax-engravings. The displays of the maps are supplemented with original atlases, geographies, and monographs of the periods. Although only a few maps from each period are published with their annotations in the *Gallery Guide*, all of the materials are listed in the cartobibliographies at the end of each section. The exhibition was designed and fabricated by Pratap Mandapaka, Exhibits Technician, Special Collections, The University of Texas at Arlington Libraries.

Exploration and Discovery

Fifteen years after Christopher Columbus's initial discovery, there were numerous and often conflicting reports on the geography of the region we know today as the Gulf of Mexico and the Caribbean. The Spanish, sponsors of the first explorations, quickly found themselves in competition with other maritime powers for new territories and the vast riches of the New World. As a result, Spain as well as other European powers often considered geographical information as state secrets. The Spanish were particularly secretive. As early as 1508, they established the *Casa de la Contratación*, which was responsible for receiving mandated reports from each royally sponsored voyage and for coordinating the mapping of new Spanish dominions, but the information was definitely not for "public consumption." In the thirty-five years after the initial discoveries, only the reports of Amerigo Vespucci's voyages appeared in print in Europe, and, in fact, no reports were published in Spain or Portugal, as those nations feared both international and domestic competition. Ironically, it is the advent of the printing press and its power to represent geographical knowledge in a convenient and relatively easy to produce package that leads to the undermining of the secrecy practices.

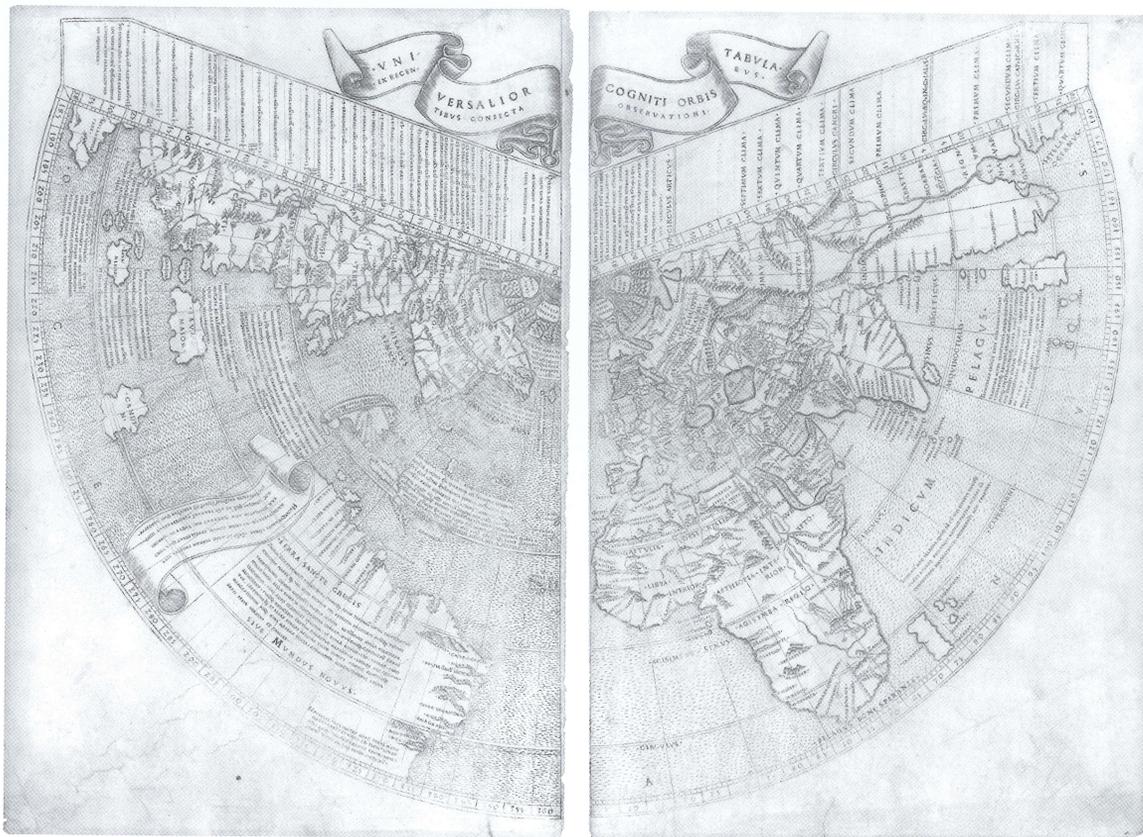
The influence of mapmakers begins in 1507 with a group of humanists in St. Die who met with the purpose of pulling together all of this myriad data. The group, which included scholars, geographers, cosmographers, engravers, printers, and draftsmen, produced a radically new map of the world published by the eminent geographer, Martin Waldseemüller. With this first compiled map, the adventure begins to depict exploration, discoveries, and settlement in the New World.

In "Exploration and Discovery," the maps show, at first, interpretations of discovery information, and then highlight various revisions by the mapmakers as they tried to account for the conclusions drawn by the explorers as they sailed into this "Other World." Much of the information was in official reports and charts of the early expeditions, but much also came from individual pilots and was based on crude observations of latitude, dead-reckoning longitude, sketches, and lists of rivers, bays, headlands sighted, and was colored by their own expectations.

Universalior Cogniti Orbis Tabula

The map, published in the 1508 Rome edition of Claudius Ptolemy's *Geographia*, became the first to depict the New World in the landmark cartographic work of the greatest of the ancient geographers. At the time of discovery, geographers and scientists relied on the fifteen hundred year old worldview developed by the first century mathematician. Ruysch's map was the first modern map added to the work of Ptolemy.

Ruysch was from the Netherlands and is generally believed to have sailed on a voyage to the New World between 1501 and 1505, thus becoming the first mapmaker to have first-hand knowledge of the explorations. His map is a combination of classical, medieval, and early renaissance geographical thought. Ruysch relies on the reports of Marco Polo, then two hundred years old, as well as information coming from the Columbus voyages and more immediate confidential news from Portuguese sources. One revealing aspect of the map is how the Caribbean is depicted as part of the sea off the China coast, while the ribbon obscuring the western portion of Cuba has an inscription that states, "As far as this the ships of Ferdinand have come." The notation is a reference to the voyages of Christopher Columbus and his insistence that the islands were located off the coast of China.

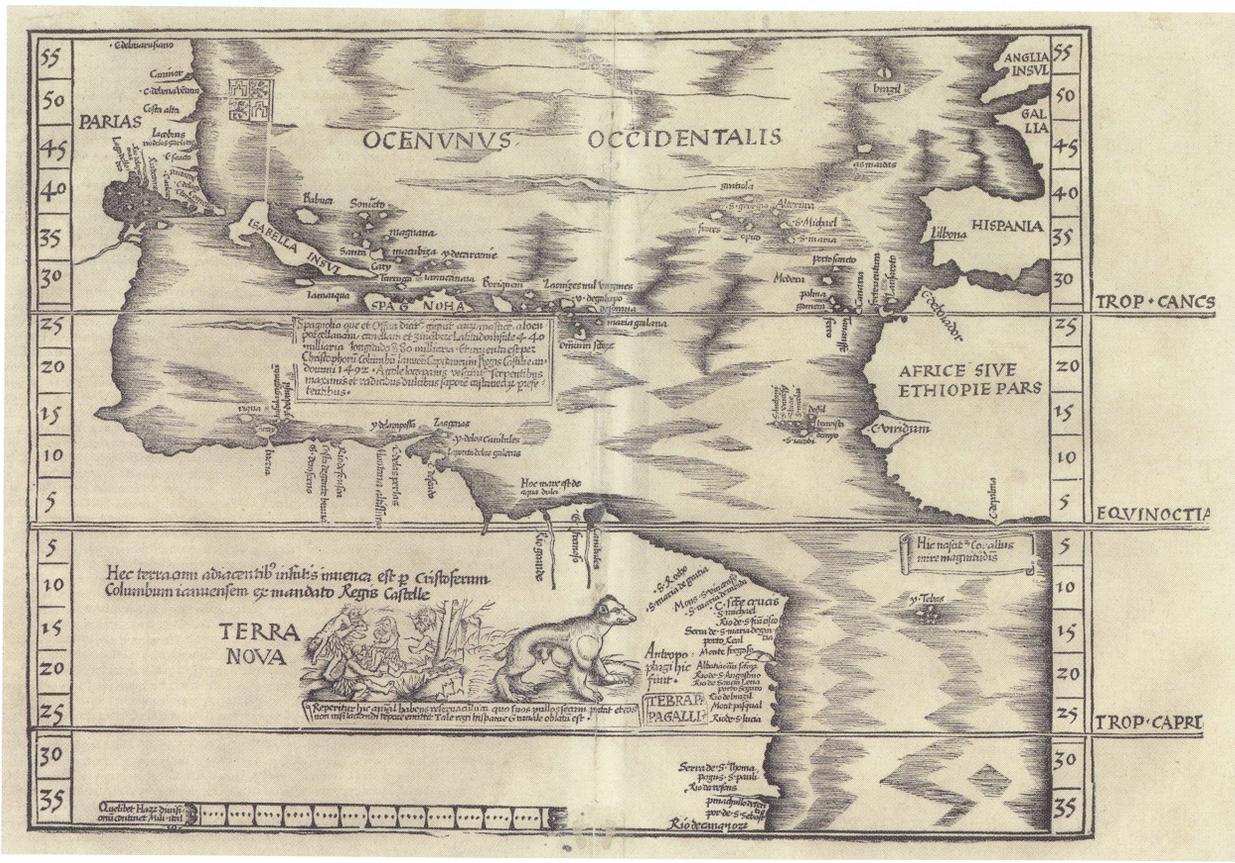


Universalior Cogniti Orbis Tabula by Johann Ruysch. Published in Rome, 1508. Copperplate engraving.

Tabula Terra Nova

This 1525 edition of Waldseemüller's work devoted largely to the New World is based on the cartography of Waldseemüller's groundbreaking 1507 map that came out of the Gymnasium Vosagense, the group of scholars, cosmographers, geographers, and printers who met in the decades after the Columbian discoveries to assimilate conflicting data on the new discoveries. It is on the 1507 map that Waldseemüller names the new lands "America," after Amerigo Vespucci, whom the mapmaker thought deserved the honor for his voyages to the New World. However, in this 1525 view, Waldseemüller seeks to correct his mistake with the bordered notation in the middle of the region attesting to the fact that the lands were first discovered by Christopher Columbus.

Tabula Terra Nova was one of the earliest maps to show a complete delineation of the Gulf of Mexico, albeit a small one, in relation to the islands of Isabella and Spagnolla, presentday Cuba and Haiti. The 1525 edition of the map is also noted for the small vignette, the first of New World peoples, flora and fauna, in depicting native inhabitants as cannibals. It is thought by many to be a reflection of the report by Columbus of fierce tribes found on one of the outer islands.



Tabula Terra Nova by Martin Waldseemüller. Published in Strasbourg, 1525. Woodcut print.

Cartobibliography: Exploration and Discovery

Fine, Orance. *Nova, et Integra Universi Orbis Descriptio*. Vale, 1531.

Münster, Sebastian. *Americae Sive Novi Orbis Nova Descriptio*.
Basel: S. Münster, 1588.

Münster, Sebastian. *Tabula Novarum Insularum*. Basel: S. Münster, 1550.

Ruscelli, Girolamo. *Orbis Descriptio*. Venice: G. Ruscelli, 1574.

Ruysch, Johann. *Universalior Cogniti Orbis Tabula*. Rome: J. Ruysch, 1508.

Waldseemüller, Martin. *Tabula Terra Nova*.
Strasbourg: M. Waldseemüller, 1525.

Waldseemüller, Martin. *Universalis Cosmographiae*.
Amsterdam: M. Waldseemüller, 1507. Reproduction.

Trade and Mercantile Interest

Exploration and discovery gave way to exploitation and commercial enterprise as European nations sought to gain from their earlier endeavors. The enterprise of the Indies provided a rich bounty for the maritime powers, and the secrecy policies of nations could no longer be enforced. The Dutch moved into the gap and rose to prominence as the commercial transporters of mercantile goods both in Europe and the New World. By the turn of the seventeenth century, Amsterdam had risen to prominence as the financial capital of Europe, with shipping forming a vital link to markets at home and abroad. The formation of the Dutch West India Company in 1612 solidified Dutch shipping in the New World, and the heavy traffic depended on accurate charts and pilot books.

The center of mapmaking had moved to the Netherlands by the middle of the sixteenth century and was fostered by the Dutch cartographers, especially Gerhard Mercator and Abraham Ortelius. Mercator developed the grid system for navigation that would carry his name and was the first cartographer to depict a New World divided into North America and South America, and Ortelius effectively eliminated the Ptolemaic system for maps and developed and published the first modern atlas containing maps of uniform coverage. In addition to cartographic contributions, the Dutch maps were replete with beautiful depictions of peoples, flora and fauna of the lands portrayed. Many of these maps today are collected as sixteenth and seventeenth century works of arts.

The Dutch also are credited with producing the first systematic collection of navigation charts bound into book form. These "sea atlases" were compiled and published beginning in 1584 by Lucas Jantz Waghenaer and followed closely by Willem Janszoon Blaeu. Commercial enterprise accounted for the demand for accurate maps and resulted in many editions of both atlases and separate sheet maps printed in Latin, German, French, Spanish, English, Italian and Dutch. This domination of charts and sea atlases continued into the seventeenth century with Johannes van Keulen, whose company provided hydrographic information for close to two centuries.

*Insulae Americanae in Oceano Septentrionali,
cum Terris adiacentibus*

The domination of the Dutch in shipping and trade reached its peak in the seventeenth century, and the enormous traffic relied on accurate navigational information found on charts and pilot books. As navigation became more precise and sophisticated, these guides developed into detailed books of charts called sea atlases. Lucas Janszoon Waghenar produced the first of these atlases in 1574. Soon, other mapmakers followed his model, including Willem Janszoon Blaeu, and publication of hydrographic information became predominantly a Dutch enterprise.

Blaeu's sea charts and maps, including *Insulae Americanae*, reflect the type of cartographic product developed for transcribing the information needed by sailing ships engaged in commercial trade. In the sea areas, rhumb lines and compass roses indicate sailing directions, while the land area is reminiscent of the old hand-drawn portolan charts prepared by early sailors. It features place names for rivers, bays, capes, towns and settlements along the coastline, and interior information is limited to names of countries. Blaeu's chart is typical of Dutch cartography in its artistic presentation as well. The cartouche, dedication, and scale legends depict cherubs, a goddess, a coat of arms, a variety of snakes, turtles and lizards, and ships sail the seas and oceans.



Insulae Americanae in Oceano Septentrionali, cum Terris adiacentibus by Willem Janszoon Blaeu. Published in Amsterdam by W. J. Blaeu, 1635. Copperplate engraving.

*Pascaerte van West Indien begrypende in zich
de Vaste kusten en Eylanden, alles op syn waere lengte en
breete op wassende graden geleg*

Almost fifty years after Willem J. Blaeu published his celebrated sea charts, the development of Dutch pilot books or sea atlases reached its zenith with the firm of Johannes van Keulen. The publisher obtained the services of Claes Jansz to compile his charts, which were recognized as the best on the market. The works were noted for accuracy and detail. The house of Van Keulen operated from 1678 to 1885 and was the largest non-governmental hydrographic office in the world. It was the most important source of hydrographic information in the world for close to two centuries.

Like most sea charts of the region, *Pascaerte van West Indien* contains rhumb lines and compass roses for navigational purposes over both sea and land areas. The chart has the look of a portolan, with place names of towns and settlements along the coastline while interior details are limited to country names. Van Keulen uses graphic presentations to indicate shoals and shallows, especially in the Bahamas. The east coast of North America is depicted in greater detail than the northern Gulf Coast, indicating the lack of information available from the Spanish. There is an inset showing the north shore of Cuba in greater detail. The region is bisected by the Tropic of Cancer, and scale is given in Dutch, Spanish and English designations, giving a clue as to the anticipated audience for the chart. The cartouche is flanked by cherubs, a favorite of Dutch cartographers, and they hold the instruments of navigation.



Pascarte van West Indien begrypende in zich de Vaste kusten en Eylanden, alles op syn waere lengte en breete op wassende graden gelegd by Johannes van Keulen. Published in Amsterdam by J. van Keulen, c1680. Copperplate engraving.

Cartobibliography: Trade and Mercantile Interest

Blaeu, Willem Janszoon. *Insulae Americanae in Oceano Septentrionali, cum Terris adiacentibus*. Amsterdam: G. Blaeu, c1635.

Hondius, Jodocus. *America*. Amsterdam: J. Hondius, 1630.

Keulen, Johannes van. *Pascaerte van West Indien begrypende in zich de Vaste kusten en Eylanden, alles op syn waere lengte en breete op wassende graden gelegd*. Amsterdam: J. van Keulen, c1680.

Mercator, Gerhard. *America Sive India Nova*. Amsterdam: J. Hondius, 1609.

Ortelius, Abraham. *America Sive Novi Orbis, Nova Descriptio*. Antwerp: Aegid, 1570.

Imperial Aims and Scientific Accuracy

The French intrusion into the Gulf of Mexico in the late decades of the seventeenth century challenged both Spanish dominance of the area and the increasing interest of the English in the region. In the late seventeenth century, France moved aggressively in expanding her New World territory. She had held the St. Lawrence seaway since the beginning of the century, and in 1673 moved onto the Great Lakes, the Ohio and the upper Mississippi River. Later in the seventeenth and early in the eighteenth centuries, an opportunistic France was seeking an outlet in the Gulf and finally succeeded with the establishment of a fort at presentday Mobile Bay, Biloxi, and later New Orleans, placing a French "wedge" in the Spanish Gulf. Although English interest in the region was slower to be realized, by the beginning of the eighteenth century, the northern rim of the Gulf from the Texas coast to St. Augustine in Florida as well as the sea lanes in the Gulf and Caribbean had become the site of a three-way struggle among Western Europe's most expansive empires.

Dutch dominance of the map trade gradually gave way during the seventeenth century to the French. The move to Paris becomes evident with the publication of Nicolas Sanson d'Abbeville's atlas in 1650. Sanson, the Royal Geographer, brought a more scientific approach to mapmaking, and his maps were the most accurate, influential and often copied of the age. Many other French cartographers and publishers followed his lead, and they dominated the industry with their less embellished, more empirical approach to mapmaking. In conjunction with this new attitude, the government established the *Dépôt des Cartes et Plans de la Marine*, which, along with the French Royal Academy of Science, was responsible for the use of advanced mathematics and scientific data based on actual observations that were incorporated in the construction of the maps and charts. The department also was the focal point for verification and compilation of all available geographic data, and in the later years actually sponsored publication of government charts and maps. The result was an expanded geographical knowledge base presented in increasingly accurate cartographic works.

Amerique Septentrionale

Nicolas Sanson de Abbeville revolutionized the map trade in the mid-seventeenth century and propelled France into prominence. He founded a new school of cartography that dominated the field for over a hundred years. He emphasized a scientific approach to cartography and moved away from the elaborate ornamentation of the Dutch. His maps, and those of French cartographers that followed, relied on verifiable information and recorded the data acquired from exploring expeditions.

Amerique Septentrionale is a landmark map representing the best information available in the period from European and American sources. Sanson introduced a great deal of new information about the continent. In addition, it contains representative data on the Gulf and Caribbean as well. In the northern Gulf of Mexico, the Mississippi River is still unknown, but the prevailing information led the mapmaker to believe that four large rivers emptied into the "Baye de Spirtus Santo," and that those rivers were bounded on the west by a line of mountains. Sanson also depicts the Rio del Norte, the present day Rio Grande, as originating from a large lake in the western interior and emptying into the "Mar Vermejo," rather than in the northwestern Gulf—a myth fostered by the Spanish to further their policy of secrecy regarding geographical information in her New World possessions. The ocean east of the Florida peninsula is labeled "Mer de Mexique," and the entire region from the Gulf of Mexico to the ocean on the east of the Caribbean is noted as "La Nouvelle Espagne," acknowledging the claims of Spain to the area.



Amerique Septentrionale by Nicolas Sanson de Abbeville. Published in Paris, 1650. Copperplate engraving.

*Carte Reduite du Golphe du Mexique
et des Isles de l'Amerique*

Bellin was the first chief hydrographic engineer of the *Dépôt des Cartes et Plans de la Marine* established in the early 1720s, and was the agency's main hydrographer until his death in 1772. He provided maps for many scholarly publications as well as hundreds of maps, plans, and atlases during his tenure with the *Dépôt des Cartes*.

The chart of the Gulf of Mexico and the islands of the Americas displays features both inland and within the seas. Inland, river courses are indicated along with symbols for mountainous areas as well as many place names. There is even a major roadway depicted on the island of Cuba. The water areas contain rhumb lines and compass points for navigation, and in the northern Gulf and around Florida there are soundings marked. The Florida peninsula is shown as a group of islands and waterways, typical of Bellin's work. The map also includes a legend for color-coding of the territorial possessions in the region. As the map is hand-colored, some of the color-coding is suspect, but does indicate the increased colonial possessions of other maritime nations into previously Spanish claimed territory.



Carte Reduite du Golphe du Mexique et des Isles de l'Amerique by Jacques Nicolas Bellin. Published in Paris by the *Dépôt des Cartes et Plans de la Marine*, c1740. Copperplate engraving.

Cartobibliography: Imperial Aims and Scientific Accuracy

Bellin, Jacques Nicolas. *Carte Reduite du Golphe du Mexique et des Isles de l'Amerique*. Paris: Dépôt des Cartes et Plans de la Marine, c1740.

Buache, Philippe. *Carte d'une Partie de l'Amerique pour la Navigation des Isles et du Golfe du Mexique avec l'interieur des Terres*. Paris: P. Buache, 1740.

Chatelain, Henry Abraham. *Carte Contenant le Royaume du Mexique et la Floride*. Paris: H. Chatelain, c1719.

Coronelli, Vincenzo Maria. *America Settentrionale*. Venice: V. M. Coronelli, 1688, 1695.

Covens, Jean and Corneille Mortier. *Archipelague du Mexique ou sont les Isles de Cuba, Espagnole, Iamique, &c.* Amsterdam: Covens & Mortier, c1722.

d'Anville, Jean Baptiste Bourguignon. *Carte des Isles de l'Amerique et de plusieurs Pays de Terre Ferme situés au devant de ces Isles & autour du Golfe de Mexique*. Paris: J. d'Anville, 1731.

Delisle, Guillaume. *Carte du Mexique et de la Floride des Terres Angloises et des Isles Antilles du cours et des Environs de la Riviere de Mississipi*. Amsterdam: Covens & Mortier, 1722.

Fer, Nicolas de. *Le Vieux Mexique ou Nouvelle Espagne avec les costes de la Floride*. Paris: N. de Fer, 1705.

Mortier, Pierre. *Le Golfe de Mexique et les Isles Voisine. Archipelague du Mexique ou sont les Isles de Cuba, Espagnola, Jamaica, &c.* Amsterdam: P. Mortier, 1700.

Sanson d'Abbeville, Nicolas. *Amerique Septentrionale*. Paris: N. Sanson d'Abbeville, 1650.

Sea Power and Political Influence

Great Britain's colonization efforts along with her growing sea power propelled her into becoming the dominant political power by the eighteenth century. As had the Dutch and the French, she established a string of colonies and settlements along the coasts and islands from Canada to the Antilles. These settlements flourished with cash crops, including sugar, tobacco, and other trade commodities. Great Britain's colonial holdings represented both her economic and political influence, especially in North America and the Caribbean.

This political and sea power coincided with British leadership in mapmaking. Although there were early important British cartographers, most were either involved in producing English county maps, such as Christopher Saxon, or were producers of navigational charts, like John Sellers and John Thornton. Most English-produced maps of the earlier centuries usually were copied from Dutch or French sources.

The first British mapmaker of note in the eighteenth century is John Mitchell, whose 1755 *Map of America* has been called the most important map in American history because it was used as the authority in several boundary disputes. Other English mapmakers followed, including Emanuel Bowen, Herman Moll, and the leader of the London trade, Thomas Jeffreys, Geographer to King George III. By the turn of the nineteenth century, the firm of Aaron Arrowsmith introduced a new standard of excellence in mapmaking. Arrowsmith carefully gathered the best information available and compiled his maps, painstakingly verifying the data. Other important English cartographic houses of the early nineteenth century included those of John Cary, James Wyld and the Hydrographic Office of the British Admiralty.

*North America According to ye Newest
and most Exact Observations*

Herman Moll was one of Great Britain's most celebrated geographers and mapmakers of the first half of the eighteenth century. During his sixty-year career, he produced a prolific number of geographies, atlases, maps, charts, and globes. He was an accomplished engraver and a skilled artisan. His precision line work and characteristic lettering made his work unique, distinguishable, and desirable.

Moll's 1720 map of North America is representative of the detail he included in his works. There is an elaborate cartouche with a dedication, illustrations, numerous insets, and notations. The land areas reveal many place names, rivers, lakes, bays and notations. Likewise the Gulf of Mexico and the "North Sea," the area between Cuba and Hispanola and the northern tip of South America, impart a great deal of information. As with a number of English maps, the oceans and southern seas are covered with small arrows indicating the prevailing winds, important information for sailing ships. Typical of most English maps and charts, Moll indicates the route of the Spanish galleons that annually withdrew much wealth from the Indies and took it back to Spain. In addition, Moll adds an "Explanation" concerning the Flota in the bottom right hand corner to further emphasize the Spanish routes and purposes. Unusual for most English produced maps of the time are several labels for the region. Off the eastern shore of southern North America, Moll calls the area "Sea of the British." Along with this label are a number of notes concerning English holdings both in the Caribbean and on the continent. Moll attempts, on this map and others of the period, to counteract territorial claims by the French on maps published under the auspices of the French *Dépôt des Cartes et Plans de la Marine*.

An Accurate Map of the West Indies. Drawn from the best Authorities, assisted by the most approved modern Maps and Charts, and regulated by Astronomical observations

Emanuel Bowen was a leading map engraver and print seller in London, and his work is typical of the work of British mapmakers as they rose to prominence at the end of the eighteenth century. He was appointed Engraver of Maps to George II and apprenticed two young men, Thomas Kitchen and Thomas Jeffreys, whose work later would be acknowledged worldwide. Great Britain's overseas colonies and commercial interests pushed the map trade in the country to develop its own expertise, and Bowen was counted among those who responded. Previously, with few exceptions, English mapmakers relied on French and Dutch cartographers to provide data and copied most of their maps and charts for English needs.

The *West Indies* map contains a great amount of information and reflects the interest of the English in the region and seeks to reinforce British claims. The map depicts the southern and eastern half of the North American continent, Central America and the northern section of South America, along with the regions known today as the Caribbean. The landmasses include names of the regions adjoining the seas and oceans, some indication of inland political divisions, place names of towns and settlements, and the area is replete with tiny trees indicating forested lands in the north and numerous scattered mountains over the majority of the area. Bowen also indicates the prevailing winds across the Atlantic and in the "North Sea" and the Gulf with small arrows. The map is bisected by the Tropic of Cancer, and the Caribbean region is further subdivided into the "Lucayos or Bahama Islands, Caribbe Islands, the Greater Antilles Islands, the Lit. Antilles Islands." There are several notes of a historical nature on the face of the map stretching from the east coast of Florida down to the Bahamas. These notes describe an English charter, the site of the first landing place of Columbus, and English claims in the Bahamas. Typical of most English charts is the line drawn around the Gulf Coast indicating the route of the Spanish Flota departing from Vera Cruz on the west coast to its exit through the channel between Florida and the Bahamas on the way back to Spain.



An Accurate Map of the West Indies. Drawn from the best Authorities, assisted by the most approved modern Maps and Charts, and regulated by Astronomical observations by Emanuel Bowen. Published in London, c1752. Copperplate engraving.

Cartobibliography: Sea Power and Political Influence

Admiralty. Hydrographical Office. *A General Chart of the West Indies and Gulf of Mexico, describing the Gulf and Windward Passages, Coasts of Florida, Louisiana and Mexico, Bay of Honduras and Musquito Shore: likewise the Coast of the Spanish Main to the Mouths of the Orinoco*. London: Hydrographical Office of the Admiralty, 1824, 1855.

Arrowsmith, Aaron. *Chart of the West Indies and Spanish Dominions in North America*. London: A. Arrowsmith, 1803.

Bowen, Emanuel. *An Accurate Map of the West Indies Drawn from the best Authorities, assisted by the most approved modern Maps and Charts, and Regulated by Astronomical Observations*. London: E. Bowen, 1752.

Cary, John. *A New Map of North America, from the Latest Authorities*. London: J. Cary, 1806.

Dudley, Robert. *America. Carta Particolare della Baia di Messico con las Costa*. Florence: R. Dudley, 1646-47.

Jeffreys, Thomas. *The Western Coast of Louisiana and the Coast of New Leon*. London: T. Jeffreys, 1775.

Moll, Herman. *North America According to ye Newest and most Exact Observations*. London: H. Moll, c1720.

Wyld, James. *A Map of America, or the New World, wherein are introduced all the known parts of the Western Hemisphere, Shewing also the Boundaries of the New States*. London: J. Wyld, 1824.

Commercial Enterprises and Coastal Surveys

American cartography came into its own in the early decades of the nineteenth century, although American excellence was noticed in the 1790s with the works of Matthew Carey in Philadelphia. That city was the home of other map and atlas publishers of note, including Henry S. Tanner and Samuel Augustus Mitchell. New York followed shortly afterwards and was the home of several prominent firms, such as those of J. H. and G. W. Colton and later Alvin J. Johnson. These early nineteenth century publishing houses focused on producing maps with great detail, and they marketed maps and atlases to settlers, travelers, land speculators, and government administrators, especially as the nation moved westward. The second half of the nineteenth century saw the development of the firms of Rand McNally, George C. Cram, and C. S. Hammond in Chicago, all of whom catered to the railroads, educational, and business interests. This also was a period when new printing techniques, such as lithography, revolutionized the industry.

The second half of the nineteenth century also saw the increased influence of the United States Coast and Geodetic Survey, as that agency became the source of geographic and hydrographic material for the use of governmental and private chart publishers. Originally authorized by the United States Congress in 1807 to survey the coasts of the country from Maine to Georgia, the government agency's mission eventually included the scientific survey of all three coasts of the United States, the publication of charts and maps, the adaptation of patterns of soundings, recording of observations on geomagnetism, coastline dynamics, tides and currents, gravity, possible discernible alternation in the figure of the earth, and other physical observations.

The Navy carried on the hydrographic survey work and commanded the vessels. Army personnel, including the Topographic Engineers, carried out the land surveys, while the overall policies and command control were in civilian hands. All the data collected was under relatively uniform standards and procedures. In addition, officers and individuals employed by the Coast Survey would occasionally report on historic and scientific work accomplished in the field. Many were recognized leaders in the scientific community, especially the first and second directors, Rudolph Hessler, a Swiss mathematician with extensive surveying experience and knowledge of surveying and navigation instruments, and Alexander Dallas Bache, the great grandson of Benjamin Franklin, who was a graduate of West Point as well as an extraordinary scientist and educator.

*A Chart of the West Indies From the latest
Marine Journals and Surveys*

The rise of the U. S. map trade begins with the maps of Matthew Carey in the late eighteenth century, and the firm continued to publish through the early decades of the 1900s. Carey's 1814 chart of the Indies is typical of his attention to detail, a trait that became the hallmark of the American publishing industry.

Carey's chart shows its reliance on "Marine Journals and Surveys" with its Mercator-like grid, scale given in "Nautical Leagues," and indications of shoals and shallows surrounding mainlands and islands, particularly in the Bahamas. Carey also focuses on naming all the sub-regions in the West Indies, including differentiating the "Greater Antilles" from the "Little Antilles," the "Lucayos or Bahama Isles" from the "Carribbee Isles," and noting the area of "The Spanish Main." Carey's coastline work, reminiscent of earlier cartographers, gives a more artistic flare to the precise presentation.

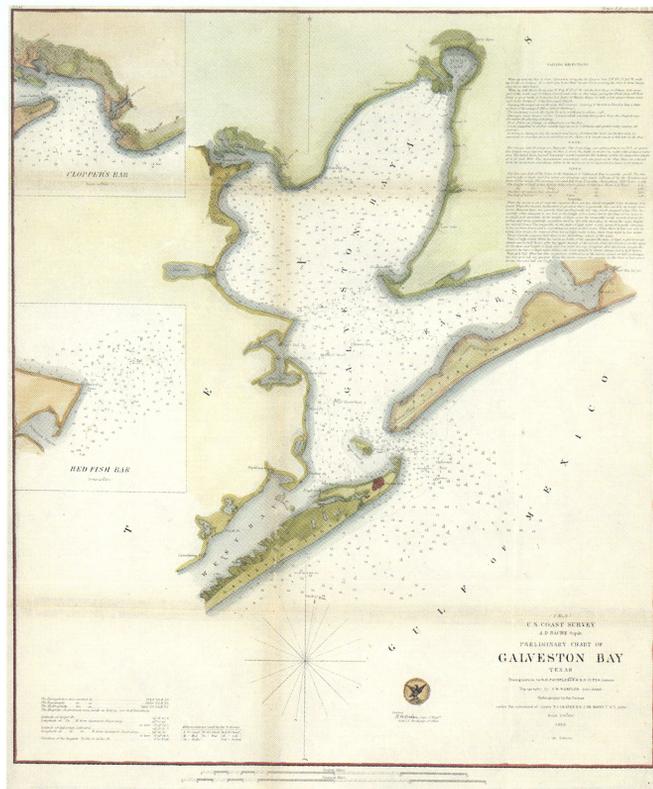


A Chart of the West Indies From the latest Marine Journals and Surveys by Matthew Carey. Published by M. Carey in Philadelphia, 1814. Copperplate engraving.

Preliminary Chart of Galveston Bay

The goal of the United States Coast Survey was to rapidly convert acquired data into usable charts for mariners and commercial mapmakers. The agency first published "sketches," which were augmented periodically. Next came the "preliminary charts," such as this one of Galveston Bay, which were made large enough to include the older first field surveys and notes as well as the newer work in the area. And finally, they published large and very detailed charts depicting all the data collected, fulfilling their charter to "provide useful and necessary navigational products required for the safe and efficient maritime commerce in and out of our nation's ports."

The Galveston Bay chart is typical of the preliminary publications of the U.S. Coast Survey. It focuses on the bay and the two landmasses at the entrance—Galveston Island and the Bolivar Peninsula. There are, even at this level of publication, extensive markings of the soundings and notations of bars, shoals, keys, reefs and smaller islands. In addition, there are insets on the face of the map detailing two particularly troublesome areas—Clopper's Bar and Red Fish Bar. The note area in the top righthand corner includes comments on "sailing directions, notes, tides" and additional "remarks." Finally, the chart includes notations on survey methodology, the abbreviations used on the chart, and credits the officers in charge of the various aspects of the work.



Preliminary Chart of Galveston Bay Texas by the U.S. Coast Survey, A. D. Bache, Superintendent. Published by Browne & Hasbrouck in New York, 1855. Lithograph print.

Cartobibliography: Commercial Enterprises and Coastal Surveys

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Spanish Contributions to New World Cartography

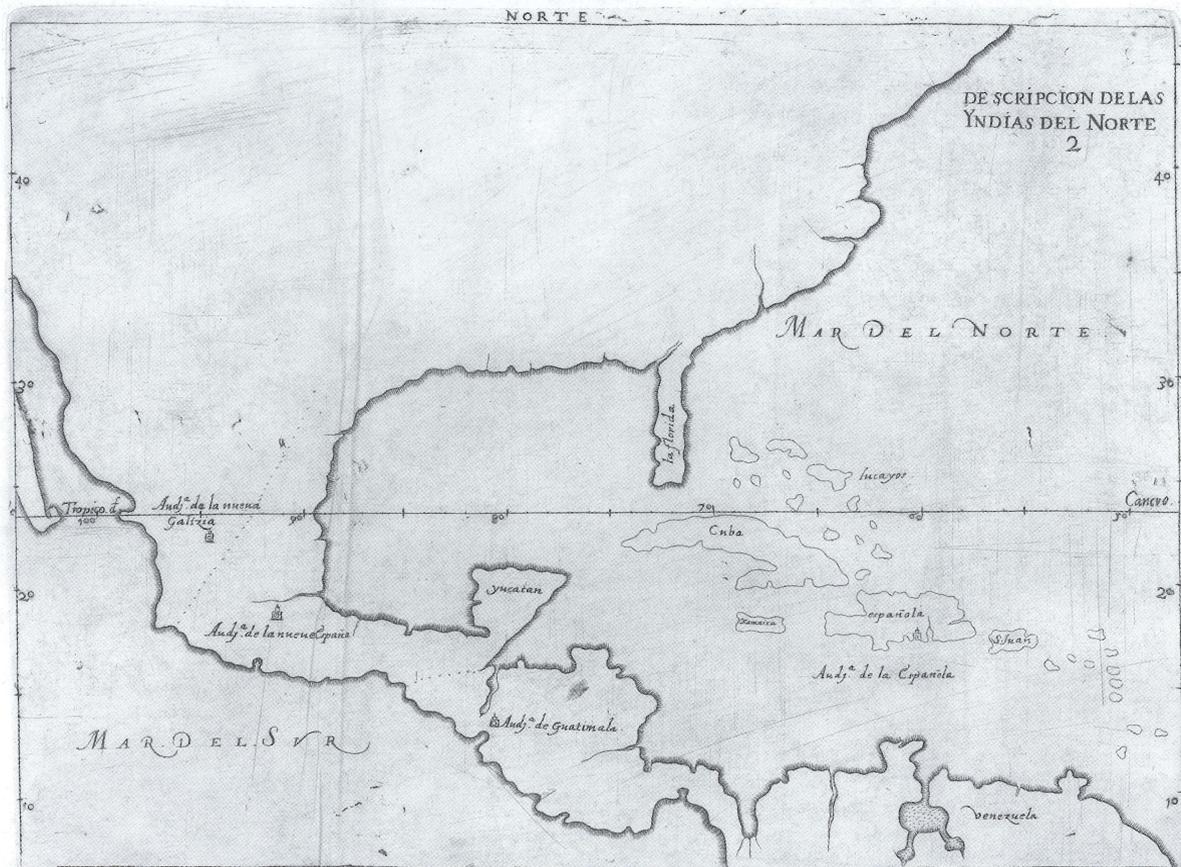
Spain holds claim to the discovery of the New World with the four voyages of Christopher Columbus into the Caribbean Sea beginning in 1492. Subsequent exploration by the Spanish as well as other maritime nations in the West Indies and along the South American coast expanded greatly on the information about the New World. Spain created the *Casa de la Contratación* in 1508 to oversee the information and mapping from the explorations. But Spain, one of the great maritime nations, did not participate in the publication of that information about these discoveries for several centuries. Rarely were the maps prepared by their official cartographers published. Instead, the Spanish considered the information they gathered as a result of their extensive explorations a closely guarded secret.

There were some notable exceptions to Spain's policy. One was the history of New Spain written with discretion by Antonio de Herrera y Tordesillas, the Historiographer of Castile and the Indies, who had access to the Spanish archives. Another exception was Tomás López de Vargas Manchuca, who surfaced in the mid-eighteenth century to publish atlases and maps on the Spanish possessions in the Americas. By the late decades of that century, most European nations with interests in the region, including France and Great Britain, established government hydrographic offices, and all published charts of the waters of the West Indies. Spain joined the growing list and created the *Dirección de Hidrografía*, a government sponsored maritime agency. That organization published sea charts and descriptions of the gulfs, seas, ports, bays, and harbors of Spanish territory in the hemisphere, including the Gulf of Mexico and the Caribbean Sea.

Descripción de las Yndias del Norte

Herrera's work represents some of the best information regarding Spanish claims and attitudes about their New World explorations and territorial acquisitions. The well educated scholar, appointed Historiographer of Castile and the Indies by Phillip II, had unprecedented access to the extraordinary Spanish archives. His careful labors resulted in a four-volume history of Spain's New World discoveries and acquisitions dating from Columbus's first voyage in 1492 to 1555, the end of most of the initial explorations in the Gulf and Caribbean Sea. The volumes also included fourteen maps depicting Spanish territory.

Descripción de las Yndias del Norte is a stark outline map depicting the southern portion of North America, the Gulf of Mexico, the Caribbean, and the northern part of South America. What is today Mexico and Central America are divided and labeled as Spanish Audencias or governing regions. The islands of the Caribbean are outlined with a lighter line and labeled as "Audja. de la Española." The map is bisected by the Tropic of Cancer, and the major seas, "Mar del Norte" and "Mar Del Sur," are labeled above and below the line. Interestingly, and in contrast to most maps of the period, the general outline of the continent and islands is fairly accurate. The simplicity of the map reflects the official position of the Spanish and their wish to keep exploration information to themselves.



Descripción de las Yndias del Norte by Antonio de Herrera y Tordesillas. Published in *Descripción de las Occidentales* in Madrid, 1601. Copperplate engraving.

*Carta Esférica que comprehende las Costas
del Seno Mexicano*

Carta Esférica, published by the Spanish government first in 1799 and again in 1805, was the first large-scale printed sea chart of the Gulf from Yucatán to Florida that used data collected from actual explorations and soundings. Commissioned by the Spanish governor of Louisiana, Bernardo de Gálvez, the Gulf survey was accomplished by José Antonio de Evia in 1785. The material from the detailed exploration and soundings languished for a decade until Don Juan Francisco de Langara y Huarte, the Spanish secretary of state and of the navy, requested the information be published. The chart was an important advance in geographical knowledge of the Gulf and remained the best authority for many years.

The map depicts the Gulf Coast from Yucatán to Florida and includes the western portion of Cuba. The grid projection used is indicative of its navigational nature. Like the portolan charts produced for sailors centuries before, the inland features are sparse with only names of the surrounding countries labeled, while numerous place names appear along the coast. Extensive soundings are marked offshore along the entire length of the Gulf Coast. The agency offered many notes and advisements to expand on the information portrayed in the chart and placed their seal in the bottom lefthand corner.

Cartobibliography: Spanish Contributions to New World Cartography

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The Greater View

The maps in the exhibition focus on the Gulf of Mexico and the Caribbean. However, the maps are a part of the mapmakers' efforts to integrate the region into a world view consistent with their current knowledge and the state of the science of cartography at the time. In the early stages of exploration and discovery, this meant moving from a simple allegorical map to geographical portrayals of an expanding globe with a viable map projection. As knowledge of the region and the world grew, mapmakers also were confronted with the challenges of technology, especially as the printing process itself evolved. From relief printing using carved wood blocks in the early decades, the mapmaker adapted an intaglio process using incised copperplates, giving him greater control over the presentation. Much later the process involved incorporating a planar technique, which utilized chemical separation as is done in lithography. The maps of the Gulf of Mexico and the Caribbean reflect this evolution. When seen in the context of atlases and other published products, the maps of the Gulf of Mexico and the Caribbean are clearly a part of the world at large.

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"Exploration is the essence of the human experience."

-Frank Borman, U.S. astronaut

Cover map: Jean Baptiste Bourguignon d'Anville, *Carte des Isles de l'Amerique et de plusieurs Pays de Terre Ferme*, 1731.