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## Contents



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# HISTORY RIDES THE WINDS TO COLONIAL CHARLESTON

W. M. Pine*

The phenomenal growth of colonial Charleston from an isolated hideaway on the Ashley River in 1670 to become, within a few decades, the major transoceanic port in the New World was due, in large measure, to its strategic location on the principal trade routes of the times as they crossed back and forth over the North Atlantic. These trade routes actually followed the pathways of a massive clockwise-rotating system of winds and wind-driven currents which literally pushed and ferried the relatively small and unwieldly square-rigged sailing ships of the colonial period around an eight-thousand-mile elliptical track interconnecting the North Atlantic coastlines of Europe, Africa, and North America. Since such square-rigged ships could not sail effectively against the winds and currents, it was their common practice, on leaving European ports for the American colonies, to first sail southwestward, often as far as the Cape Verde Islands, then to steer directly to the west along a parallel of latitude to the Antilles and, finally to head northwestward to the coasts of the Carolinas, a total westbound distance of approximately 5,000 miles.[1] Later, on clearing their colonial ports of call for the homeward passage, they headed northeastward out over the open ocean for a final three thousand miles before making landfall somewhere along the coasts of Europe. Discovered first by Columbus, it soon became apparent to succeeding mariners that they could anticipate favorable following winds and assisting ocean currents along this circuit for most of the year with the exceptions of the hurricane season in the lower latitudes and the winter months over the northeast-bound leg.

Charleston was located just over halfway around this elliptical track at a point where the northeast-blowing winds have their origins and the northeast-flowing ocean currents reach their maximum volumes. In effect, Charleston was positioned at the southwest terminus of an axis which followed the most direct and fastest sailing route of the times between the midatlantic colonial ports and the European ports far to the northeast. As a result of these natural advantages, together with the productivity of its agrarian economy, Charleston soon became not only the third largest port in the colonies, in terms of

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[1]Hans Leip, *Rivers in the Sea*, trans. H. A. Piehler, K. Kirkness Putnam (New York, 1957), p. 49.

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total trade, but it became the major colonial port in terms of direct transatlantic commerce, a position it maintained for as long as square-rigged sailing ships of the colonial period of imperial expansion were relied upon as the principal vehicles of marine transportation. As ships and navigational techniques were improved and as the power to move ships changed from reliance solely on the winds to fossil-fueled engines, the shipping routes were completely reoriented and the advantages initially enjoyed by colonial Charleston gave way to the more northern ports. Ultimately, as these changes progressed, the Port of New York became the western terminus of the principal transatlantic trading routes, and Charleston became a secondary port of call. Until that time, however, the affluence and influence of colonial Charleston were largely derived from the friendly winds and ocean currents which not only powered the sailing vessels of the times, but guided many of them to its harbor, shipways, and docks.

The rapid growth of Charleston as a major seaport can be most clearly seen in an analysis of the tonnages entering and clearing the port, particularly during the period in which South Carolina was a Royal Colony — the period from about 1720 to the time of the American Revolution. Fortunately, official detailed data can be studied for the period 1717-1772 based on the reports of the Crown's Customs Offices which recorded every commercial vessel entering or clearing the port, the general type of each vessel, its computed burden, and its last or first port of call, as the case might be.[2] During that period, a total of over 1.5 million tons of materials and produce were handled by the port of which about 65% consisted of direct shipments either cleared directly to or received directly from British and European ports. In terms of growth, based on average years, the total volumes per year increased from 15,000 tons to 60,000 tons during the period. The volumes of intershipments directly between Charleston and transatlantic ports increased from 8,000 tons per year to 36,000 tons during this same period. However, to the tonnages entering the port must be added an indeterminant figure for cargoes carried in ships calling at intermediate ports along the way in which the records of consignments may have been confused. In addition, the tonnages reported by the Customs Officers were based on the estimated capacities or burdens of the vessels computed under a formula developed by the British Navy in 1667. These computed burdens were the bases on which duties were collected, but it is reasonable to assume that often the vessels were probably loaded beyond these estimates at the time of sailing.

Based on available records for the northern colonial ports of Philadelphia, New York, and Boston, the bulk of their trade appears to

[2]Converse D. Clowse, *Measuring Charleston's Overseas Commerce*. Table C-11

have been either intracoastal or with the colonies in the West Indies in contrast to Charleston's transatlantic commerce. For example, in 1770, Philadelphia, the largest colonial port, cleared only twenty-six vessels in the direct transatlantic trade while Charleston cleared 109 to British ports alone.[3] From another source, it is apparent that at about the same time the total of such traffic originating in Charleston substantially exceeded the total exports for New York and all of the New England Ports combined.[4] Based on a number of similar references, it seems valid to assume that Charleston's transatlantic traffic alone closely approached or, in some cases, exceeded the total shipments clearing any of the older northern ports of the American colonies.

An even more interesting factor in analyzing the contributions of the winds and ocean currents to the early growth of Charleston has to do with the types of vessels which carried these cargoes back and forth across the vast expanses of the North Atlantic. As has been noted, most of such vessels were the three-masted square-rigged ships which consisted of a basic blunt-nosed wooden hull in which were mounted three masts of varying heights. The two forward masts supported square-cut sails, usually in two or three courses, while the aft or mizzen-mast supported a triangular sail resembling the lateen sails of the caravelles. In addition, from a bowsprit was hung a smaller square-cut sail carried forward to the bow of the vessel. The numbers of the decks and the types of enclosures varied from vessel to vessel as did the riggings and sizes of the sails. Of particular importance, however, was the length of the vessel at the waterline, inasmuch as the speed of the hull through the water was determined by the hull's waterline length. Generally, such hulls lose buoyancy if they are driven too hard and tend to "sail under," in the vernacular of the mariner, if their speeds through the water exceed the "hull speed" for each specific hull.[5] In terms of today's standards, the colonial square-riggers were small and tub-like and required excessive manpower to handle the square-cut sails in high winds. The square-riggers clearing Charleston in the colonial period seldom exceeded 125 feet in length overall or waterline lengths of much over 100 feet which limited their speeds through the water to about ten knots no matter how much power was applied to their sails. In consequence, therefore, they sailed most effectively in steady moderate winds abaft their beams assisted by the added velocity of the currents. Since they could not tack, as do fore-

[3]Arthur L. Jensen, *The Maritime Commerce of Colonial Philadelphia* (Madison, 1960)

[4]*Proceedings of the American Association for the Advancement of Science,* Third Annual Meeting in Charleston, March, 1850, pp. 17-20.

[5]Patrick M. Royce, *Sailing Illustrated* (Newport Beach, CA, 1974), pp. 140-41.

and-aft-rigged vessels, they had to "wear ship" or turn with the winds in order to make major directional changes, an often dangerous maneuver in high winds.[6]

A further serious obstacle faced by mariners of the colonial period was their inability to determine their longitudes at any given time when outside the sight of land. Many methods had been tried, but it was not until the late eighteenth century that accurate marine chronometers became available to ships in the commercial trade. Not only were the earlier navigators unable to determine their exact positions at sea, but their charts were generally distorted in their east-west orientations to the extent that they were often useless for navigational purposes. To offset these shortcomings, when at sea, a system known as "dead reckoning" was devised which, at best, was a series of "guesstimates" often leading to serious errors. According to Mathew Fontaine Maury, an eminent authority on navigational techniques, colonial mariners were often from five to ten degrees in error in crossing the North Atlantic which, in many cases, caused them to miss their intended landfalls by hundreds of miles. This type of error was extremely serious in crossings to the Antilles where, if a landfall were missed, it might take weeks or even months to return to original courses.[7]

Thus, because of these three major constraints, the square-rigged ships of the colonial period required an offsetting combination of three natural aids in order to sail with any degree of confidence: following winds of moderate velocities, blowing in the desired directions, and assisted by favorable ocean currents. For the greater part of the sailing year the rotational system of winds and ocean currents imbedded in the North Atlantic provided both the optimum power and the directional guidance required to cross back and forth. Obviously, Charleston was located at, perhaps, the most critical point in this North Atlantic gyre — a point which most square-riggers had to pass eventually in following the most sailable transoceanic circuit in the colonial period.

Strangely enough, historians for generations failed to perceive the critical relationship between this massive rotational system and the ultimate development of the British colonies along the midatlantic coasts of North America. Perhaps the first eminent modern historian to see this relationship in broad perspective was Professor George C. Rogers, Jr., Chairman of the History Department of the University of South Carolina. In 1969, Rogers published his perceptive volume,

[6]Samuel Eliot Morison, *Admiral of the Open Sea: A Life of Columbus* (Boston, 1941), p. xxvii.

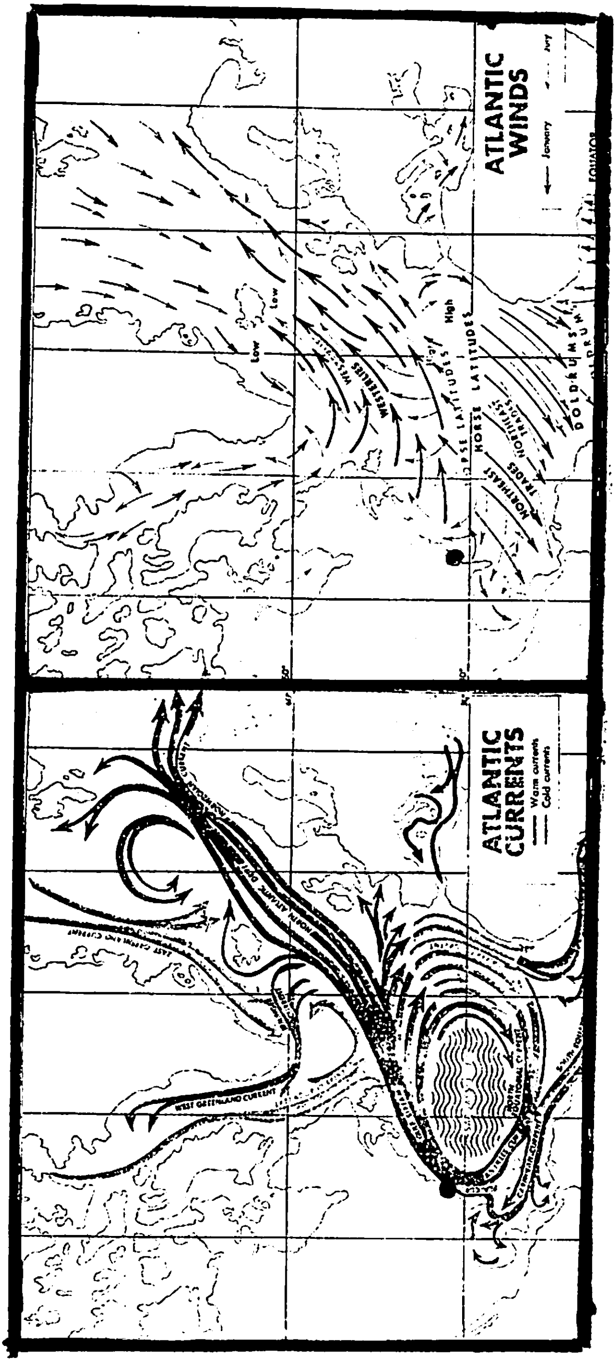
[7]Richard S. Dunn, *Sugar and Slaves* (New York – London, 1972), pp. 3-5.

*Charleston in the Age of the Pinckneys.* In his Introduction, Rogers, who had served as a meteorologist during his military service, delineates with remarkable clarity the linkage between this massive rotational system of winds and ocean currents, the heyday of the square-rigger, and the Golden Age of Charleston.[8] As he further points out, with the eventual obsolescence of the square-rigged sailing ship, Charleston lost many of its advantages and the Golden Age ultimately came to an end, the major transatlantic trade axis moving northward, with Charleston being replaced by New York as the western terminus of this axis. Following Rogers' comments to their ultimate conclusions, it might now be further argued that, without the winds and the square-riggers to sail them, two centuries of American history might well have been wiped out.

To see in better perspective the critical relationships between the physical forces of nature and the history of Charleston, it will be helpful to review briefly the oceanographic and meteorologic characteristics of the North Atlantic with particular emphasis on the rotational system which played such a critical part during the colonial period. Perhaps the best source of such basic data is to be found in the official *Pilot Charts of the North Atlantic Ocean* published quarterly in series of three monthly charts by the U.S. Defense Mapping Agency under the authority of the Department of Defense. This series of charts was initiated by Mathew Fontaine Maury in the 1840s and has been updated continuously since that time on an annual basis. Basically, each chart is a record of the logs of thousands of mariners transcribed on a Mercator Projection for each five-degree square of the North Atlantic Basin located between longitudes 36°E and 100°W and between Latitudes 5°N and 70°N, an isosceles trapezoid covering approximately twenty-seven million square miles of which seventy-eight percent is covered by sea waters. Together with the data included in the inserts, each chart reports all of the critical oceanographic data available to mariners including directions and velocities of the winds and ocean currents, locations of the major high-pressure and low-pressure centers during the specific month, magnetic compass variations, temperatures of both the air masses and the sea waters, movements of ice floes, areas of gale-force winds and twelve foot seas, and the recommended Great Circle routes between major ports during the month.[9]

[8]George C. Rogers, Jr., *Charleston in the Age of the Pinckneys* (Columbia, 1969; reprinted 1980), pp. 3-4.

[9]United States Defense Mapping Agency, *Pilot Charts of the North Atlantic Ocean* (Washington) Charts for 1984.



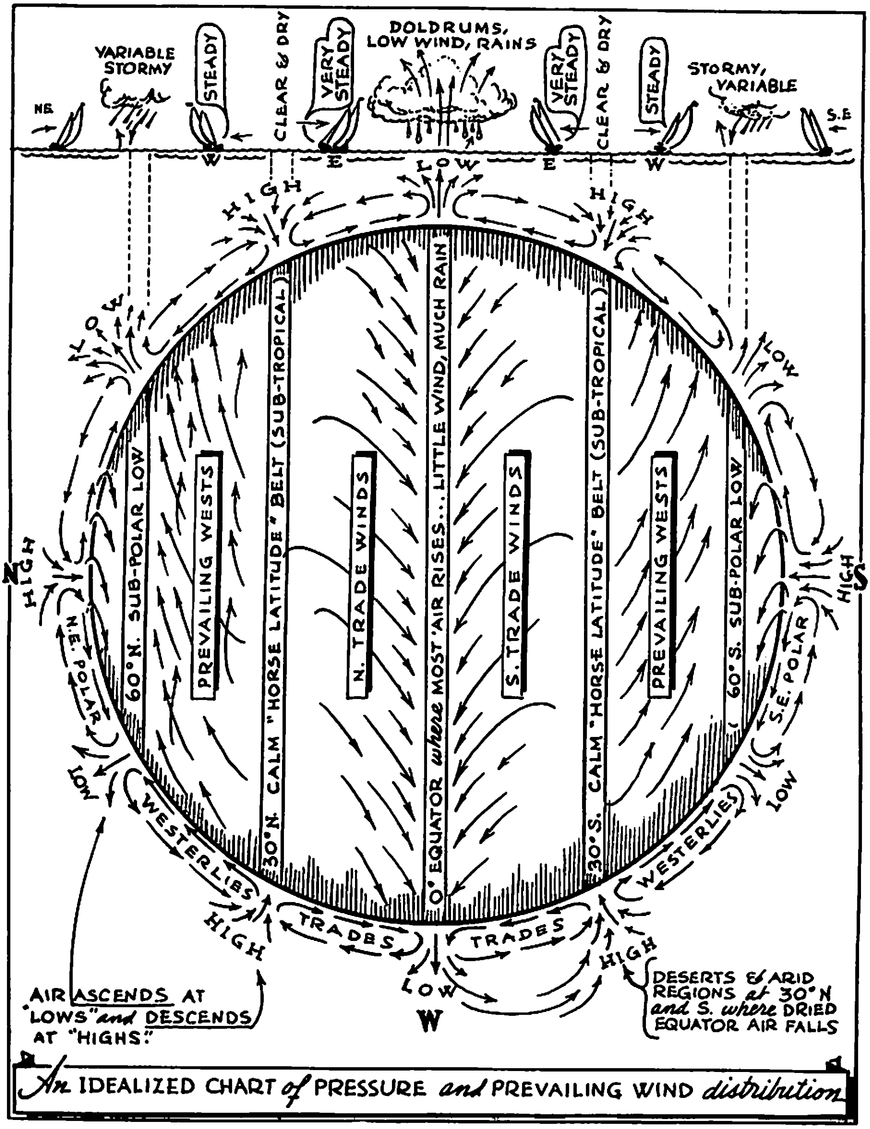

Leonard Outhwait, *The Atlantic: A History of an Ocean* (New York, 1957)

Upon examining one of these charts closely, it will be noted that there are actually two massive rotational systems in the North Atlantic, the more northern and smaller system revolves in a counterclockwise direction around the "Icelandic Low" which is located somewhere between the southern tip of Greenland and Iceland, changing somewhat with the seasons. This system is made up of two opposite-moving belts of terrestial winds separated by a zone of vertically - moving air masses generally referred to as the Subpolar Lows. The more northernly wind belt moves toward the west —the Polar Easterlies — and the southerly belt moves to the east —the upper margins of the Prevailing Westerlies. North of this entire system lies the conical Polar Highs covering the polar areas of the sphere and constantly pressing southward as the Polar Front attempts to penetrate the Subpolar Lows and force great surges of frigid air toward the lower latitudes. Thus in the winter season violent storms and high seas cover most of the upper latitudes of the North Atlantic. Along the surfaces of the seas beneath these terrestial winds is an interconnected series of slow-moving wind-driven ocean currents including the Norwegian, Irminger, East and West Greenland, Labrador, and North Atlantic Drifts.

Beginning in the tenth century, the Norsemen and others followed the more northern westerly-moving wind belts from the Shetland and Faroe Islands to Iceland and Greenland, eventually making their ways as far westward as the coasts of Labrador and northeastern North America. During the early Middle Ages, the temperatures in these northern areas had apparently been moderate, and the Norsemen were able to set up a series of agricultural colonies particularly in Iceland and Greenland. However, beginning in the thirteenth century the temperatures in these areas began to drop with the appearance of the latest phase of the Little Ice Age, and Greenland particularly and the northern seaways had to be abandoned as growing seasons were foreshortened and ice floes began to fill the seaways. [10]

Looking farther southward on the Pilot Chart, however, it will be noted that a much larger rotational system covers the North Atlantic from about L 45°N to the Equator. This system, which rotates clockwise, is centered around a high-pressure area, generally known as the Azores High, whose location shifts with the seasons, but can usually be found somewhere on a line running between Bermuda and the Azores close to L 30°N. This center is usually marked by the location of the Sargasso Sea. The system is also made up of two opposite-moving wind belts separated by a high-pressure zone of downwardly moving air masses, the zone usually being referred to as the Subtropi-

[10]Tjeerd van Ardel, *Tales of an Old Ocean* (New York – London), pp. 86-87.




Eric Sloan, *Weather Book* (New York, 1952) cal High or, by mariners, as the Horse Latitudes. The lower westerly-moving winds are known as the Trade Winds, while the upper belt of easterly-moving winds are the Prevailing Westerlies. Beneath this wind system is a series of inter-connected ocean currents made up of the Portuguese, Canary, North Equatorial, Antilles, Florida, Gulf Stream, and North Atlantic Currents.[11]

Charleston is located just at the northern edge of the Subtropical High and just inshore of the point where the Antilles and Florida currents join to form the Gulf Stream. Charleston's winds are often light and variable and, while there is a southward-flowing counter current close in, it is about fifty miles from the main flow of the Gulf Stream itself as it emerges from the area of the Horse Latitudes. Past this point the Gulf Stream carries incredible volumes of warm tropical water northeastward across the North Atlantic, the flow averaging two-to-three knots and at an estimated volume of 50,000,000 tons per second as it follows a Great Circle route to Europe and the subpolar areas.[12]

It was this great rotational system which Columbus discovered on his first voyage in 1492-93 and which was followed by thousands of square-rigged vessels for centuries thereafter, eventually becoming the main artery of trade during the entire colonial period. It will be remembered that Columbus first sailed from Palos to Gomera in the Canary Islands, then turned westward roughly following L 24°-28° N to San Salvador where he made his first landfall. In so doing he was blown and carried along by the Northeast Trades and the Portuguese and Canary Currents until he picked up the full flow of the west-moving Trades and the North Equatorial Current which brought him to the Bahamas. Later, on his homeward-bound course, he steered northeastward as the Gulf Stream ferried him through the Horse Latitudes where he was able to pick up the lower margins of the Prevailing Westerlies and the North Atlantic Drift which eventually carried him to the Azores and Spain.[13]

Essentially this was the same general course followed by Sir Walter Raleigh's expeditions to the Carolinas in 1584-85; by Captain John Smith, in the founding of Jamestown; by the Pilgrims in their passage to Plymouth Rock, in 1620; and by Captain Alan Villiers in his passage aboard *Mayflower II* in 1957, during which he duplicated as closely as feasible the course of the first Mayflower 337 years before.[14] However, with modern instruments and weather data Cap-

[11]W. L. Donn, *Meteorology* (New York, 1965), Fig. 19-20.
[12]F. G. W. Smith, *The Seas in Motion* (New York, 1973), p. 203.
[13]Daniel J. Boorstin, *The Discoverers* (New York, 1983), p. 223.
[14]Alan Villiers, *Men, Ships, and the Sea* (Washington, 1962), pp. 142-143.

tain Villiers was able to make his passage in eleven days less than the first *Mayflower* since he knew his exact position at all times and could change his headings appropriately. It is of more than passing interest that both Villiers and Columbus made about the same speeds over comparable sections of their journeys which might be expected inasmuch as they were sailing somewhat comparable vessels blown and carried along by the same rotational systems.[15]

While the Pilot Charts report the surface conditions of the seas, it should be remembered that these sea and wind conditions are, in fact, the products of incredible physical forces which have generated and sustained these massive systems for millions of years. To add this dimension to the overall perspective it is necessary to turn for a moment to look more closely at the structure and behavior of the lower atmospheric strata covering the North Atlantic. The sources of the terrestial winds which blow across the surfaces of the seas are to be found in the interactions of three major physical phenomena. These physical phenomena — solar radiation, gravity, and the socalled Coriolis Force — provide the energies which lift incredible volumes of moisture-vapor aloft only to be pulled back to the earth's surface by the force of gravity and given a twisting motion by the west-to-east rotation of the earth itself. That part of this mantle which is directly involved in the terrestial wind systems is known generally as the Troposphere. It is positioned between the earth's surfaces and an altitude where the mean temperature levels off at about 67° below zero F, the socalled Tropopause. Over the Equator this level may reach 65,000 feet or more while over the poles it may be as low as 25,000 feet. The estimated weight of the atmosphere over the North Atlantic Basin is in the magnitude of about one short ton per square foot of lateral area.[16]

Since water-vapor is the principal energizing component of the Troposphere in terms of motion, this function is initiated by the vaporous mass being lifted aloft from the surfaces of the liquid seas from which it is originally derived. To make this possible, the radiant energy of the sun is converted to sensible heat as it is absorbed by the seas' surfaces. This, in turn, raises the temperature of the water to a point at which it begins to change form from a liquid to a vapor, this process of evaporation being the first step in the hydrologic cycle. As these masses of moisture-vapor are displaced or pushed aloft by

[15]L. A. Vigneras, *Journal of Christopher Columbus; Log from Gomeras, Canary Islands, to San Salvador, Bahamas,* translated by Cecil Jane (New York, 1960), pp. 8-23.

[16]John C. Hill, USN, Thomas F. Utegaard, USN, and Gerard Riordan, *Dutton's Piloting and Navigation* (Annapolis, 1958), p. 346, basis for computation.

incoming heavier air masses, they begin to cool and, as a result, condense to form droplets around minute solid nuclei of salt or dust particles. Thus, the light vapors are converted by precipitation back to a form of liquid or, in some cases, ice crystals, being eventually pulled back towards the earth by the force of gravity leaving the resulting dry air as a frigid strata along the Tropopause.[17]

This residual air mass is then pulled outward and downward toward the poles, again by the force of gravity. However, at about L 30° N, a combination of gravity and the Coriolis Force pull much of the sliding dry cold air mass earthward thus forming the zone of the Subtropical High or the Horse Latitudes, the air being warmed in its descent by compression. The result is a warm dry zone from which the descending air masses are deflected either to the north or to the south, thus giving each part a lateral motion. The air masses so deflected are, in effect, the sources of the terrestial wind systems. However, as this initial deflection is taking place, the laterally moving air masses are further deflected by the Coriolis Force which bends them either to the east or to the west. Basically, the Coriolis Force is the name given to the directional relationship between the west-to-east spinning motion of the earth and freely moving bodies above its moving surfaces. While it has no effect on bodies over the Equator, for those north of the Equator, they seem to be deflected to the right; south of the Equator, to the left. In both cases, the deflection increases with the latitudes. Thus, the winds blowing south from Subtropical High are deflected to the west, becoming the Trade Winds. Those blowing north become the Prevailing Westerlies.[18]

Through friction between the winds and the surfaces of the seas beneath them, the opposite-moving Trade Winds and Westerlies generate and sustain the ocean currents which are further deflected by the continental land masses which limit them to the east and west. The persistent Trade Winds drive the North Equatorial Current, the Antilles and the Florida Currents, and force the build-up of sea levels in the Gulf of Mexico which, in turn, energizes the Gulf Stream. The Westerlies drive the upper reaches of the Gulf Stream, the North Atlantic Currents, and, in part, the flows of the Portuguese and the Canary Currents. During the days of the colonial square-riggers, these wind-driven currents often acted as massive balance wheels ferrying otherwise becalmed sailing ships through such areas as the Horse Latitudes. In addition, these currents acted as transports of warm or cold waters which greatly modified the climates of the adjacent land areas. For example, the Gulf Stream and the North Atlantic Currents,

[17]Smith, *The Seas in Motion*, pp. 190-196.
[18]Donn, *Meteorology*, Fig. 10.

carrying warm tropical waters to the shores of Ireland, have enabled palm trees to grow along its coasts while, at the same latitudes on the North American continent, the land is covered with ice and snow during much of the year.[19] Thus, from the standpoint of colonization, this elliptical system of winds and ocean currents not only provided transoceanic transportation, but accounted for relatively similar climates in wide ranges of latitudes to which the British colonists could reasonably adapt. London, for example, being 600 miles north of Boston.

As has been inferred, however, these general circulation patterns were often interrupted by the intrusion of relatively localized storm systems along the peripheries of the central gyre. In part, these resulted from the north-south shifts of the Azores High as the areas of greatest solar intensity moved northward in summer and southward in winter. During the summer months the buildup of solar radiation in the latitudes of the Cape Verde Islands triggered violent tropical depressions leading to a period of hurricanes; while, in the winter months the reduction of solar heat in the northern latitudes permitted vast surges of heavy frigid air to move southward. As these cold air masses collided with warm moisture-laden masses moving northeastward from the lower latitudes, violent squall lines resulted extending far out over the open seas and producing gale-force winds and high dangerous seas. While colonial Charleston was often in the pathways of these storms, its location at the edge of the Subtropical High, with its normally light and variable winds, added to the port's advantages as a harbor of refuge and a safe place to wait out violent storms over the North Atlantic.

Until the end of the colonial period, mariners little understood either the complexities of the rotational system itself or the forces which maintained it. In fact, by today's standards, it is difficult to understand how navigationally primitive the mariners of those times were. They could determine magnetic north, but they were never sure of true north when outside the sight of land. They could determine their latitudes, but they could only guess at their longitudes. They could measure changes in barometric pressures, but they had only a minimum knowledge of wind systems. They had charts of the land masses, which were often distorted, but they had little in the way of charts of the seas. As has been observed, if a navigator of the colonial period were to have laid his hand upon his chart and then to have found his ship to be within the area covered, he would have been considered unusually skilful.[20]

[19]Leip, *Rivers in the Sea*, p. 15.
[20]Robert G. Albion, *Square Riggers on Schedule* (Princeton, 1938), pp. 6-8.

Yet, because of its location, Charleston prospered until the advances in oceanographic research and advances in navigational techniques solved some of the mysteries of the seas. It may come as a surprise to many that an instrument as simple as a thermometer dragged behind a ship by a curious passenger contributed to the eventual reorientation of shipping routes across the North Atlantic perhaps more than any other single event in the eighteenth century.

However, it is perhaps best for Lt. Maury to tell the story as he did in a paper which he read in Charleston in March of 1850 at the Third Annual Meeting of the American Association for the Advancement of Science. At that time, Maury was Director of the Naval Observatory and Officer-in-Charge of the Depot of Charts and Instruments in the city of Washington. The paper had to do with the "influence arising from the discovery of the Gulf Stream on the Commerce of Charleston." As he observed — "vessels bound for America usually ran down the other side toward the Cape de Verdes until they got to the N.E. Trades and with them to steer for America. This route brought them upon the coasts of the Southern States, where their first landfall was generally made. Then steering northward, they drifted along until they made the Capes of Delaware and other headlands to the north .... It should be borne in mind that the boats then were not the sea boats or the sailors they now are .... The instruments were rude, the chronometers unknown, lunars were impractical, and it was no uncommon thing for vessels to be out of their reckoning 5° or 6° or even 10° .... At the time Dr. [Benjamin] Franklin made it known how navigators, simply by dipping their thermometers in the water, might know when they were entering or clearing the Gulf Stream, Charleston had more commerce than New York and all the New England States put together . . . This discovery changed the route across the Atlantic . . . and consequently changed the course of trade also. In this way the northern ports became the halfway house, and Charleston an outside station .... In consequence of the improvements made in navigation, shipbuilding, etc., a ship could now go from New York to England and back in less time than, when Charleston was the halfway house, she could get from Charleston to London."[21]

Yet, while advances in science and marine engineering have made it possible for vessels to now defy the winds and ocean currents by proceeding at will in any directions desired, sailing against the winds and ocean currents exacts a heavy toll for such privileges. As a contemporary example, in 1985, for example, the M.V. *Ocean Princess,* with a normal range of thousands of miles, departed Bridgetown,

[21]AAAS *Proceedings,* 1870, pp. 17-20.

Barbados, W.I., at 2100 hours, headed for the coast of Africa, Gibraltar, and the Mediterranean with a full load of fuel following eastward approximately the same route Columbus had taken westward almost five hundred years before. Five days later, the *Ocean Princess* put in to Mindelo, Sao Vincente, Cape Verde Islands, about half of the way, in order to take on enough fuel to complete the passage. Although the seas and the winds were moderate, the passage eastward cost thousands of dollars more than an opposite passage, according to officers of the ship, just to force a way against the Northeast Trades and the North Equatorial Current.[22]

Shortly before this passage, the *Port News* of the Port of Charleston published an article — "Charleston First-In Port for New OCL/NOL Round-the World Service" which notes in part, "The vessels will sail from the Atlantic Coast directly to Singapore, slashing time . . . from 80 to 67 days. What's more, by sailing continuously eastbound, the ships will be able to take advantage of the prevailing winds and currents in the Atlantic, Indian, and Pacific Oceans".[23]

Thus, even today, the rotational system of winds and wind-driven currents reward one shipping line for riding the Prevailing Westerlies eastbound to Gibraltar while it penalizes another for going to Gilbraltar the "wrong way". Columbus had the right idea — he rode the winds both ways for free.

[22]Log of the Motor Vessel *Ocean Princess* Eastbound from Tampa, to Athens, Greece, April 4-26, 1985.

[23]*Port News*, South Carolina State Ports Authority, March, 1985, pp. 17-18.

# BOOK REVIEWS AND NOTES

*In My Father's House Are Many Mansions: Family and Community in Edgefield, South Carolina.* By Orville Vernon Burton. Chapel Hill: University of North Carolina Press, 1985. 480 pages. $29.95.

Few counties anywhere in the south, and certainly no other section of South Carolina, can claim a past so rich, so colorful, so full of controversy, so tinged with violence, and so difficult to unravel as that of Edgefield. From Andrew Pickens and Eldred Simkins through George McDuffie, Preston Brooks, George Tillman, Martin Gary, and Ben Tillman down to the state's current senior senator, J. Strom Thurmond, Edgefield has produced a long and impressive list of bold and charismatic politicians whose intrepid character and defiant style must somehow have been rooted, at least in part, in the social mores and political culture of their native county. Largely because of its compelling political tradition, Edgefield has long fascinated and puzzled historians anxious to understand what sort of society could breed such an array of skillful politicians and furnish so many symbols of southern regional defiance. Now Orville Vernon Burton, professor of history at the University of Illinois and a native of the Ninety-Six area, has given us a detailed, scholarly social history of nineteenth century Edgefield that is destined to become "must" reading not only for those interested in South Carolina history but also for those with a more general interest in southern community studies. Burton has almost literally ransacked libraries, archives, and courthouses and tapped Edgefield's rich oral tradition, leaving no source unexamined, in his effort to reconstruct the warp and woof of family, community, and religious life for all nineteenth century Edgefieldians, whether rich or poor, town or country, white or black.

The portrait of Edgefield which emerges from Burton's prodigious efforts is one of an unusually complex rural society molded, at least to some degree, by intense racial antagonisms, great disparities in wealth, and frequent tensions between the stern evangelical morality of the common whites and the more tolerant Anglican habits of the planter elite. Nineteenth century Edgefield was a land of contrasts, a society with enough diversity to provide material that would later be embellished into myths about Tara's plantation elegance and the hard-bitten poverty of *Tobacco Road.* On the eve of the Civil War, the richest ten percent of Edgefield's free households controlled about seventy-three percent of the district's total wealth, while the poorest twenty-five percent of free households owned virtually no property at all. Moreover, even though about three-quarters of all household heads were employed in agriculture (as farmers, tenants, or laborers) nearly forty percent of these household heads were landless. About ten