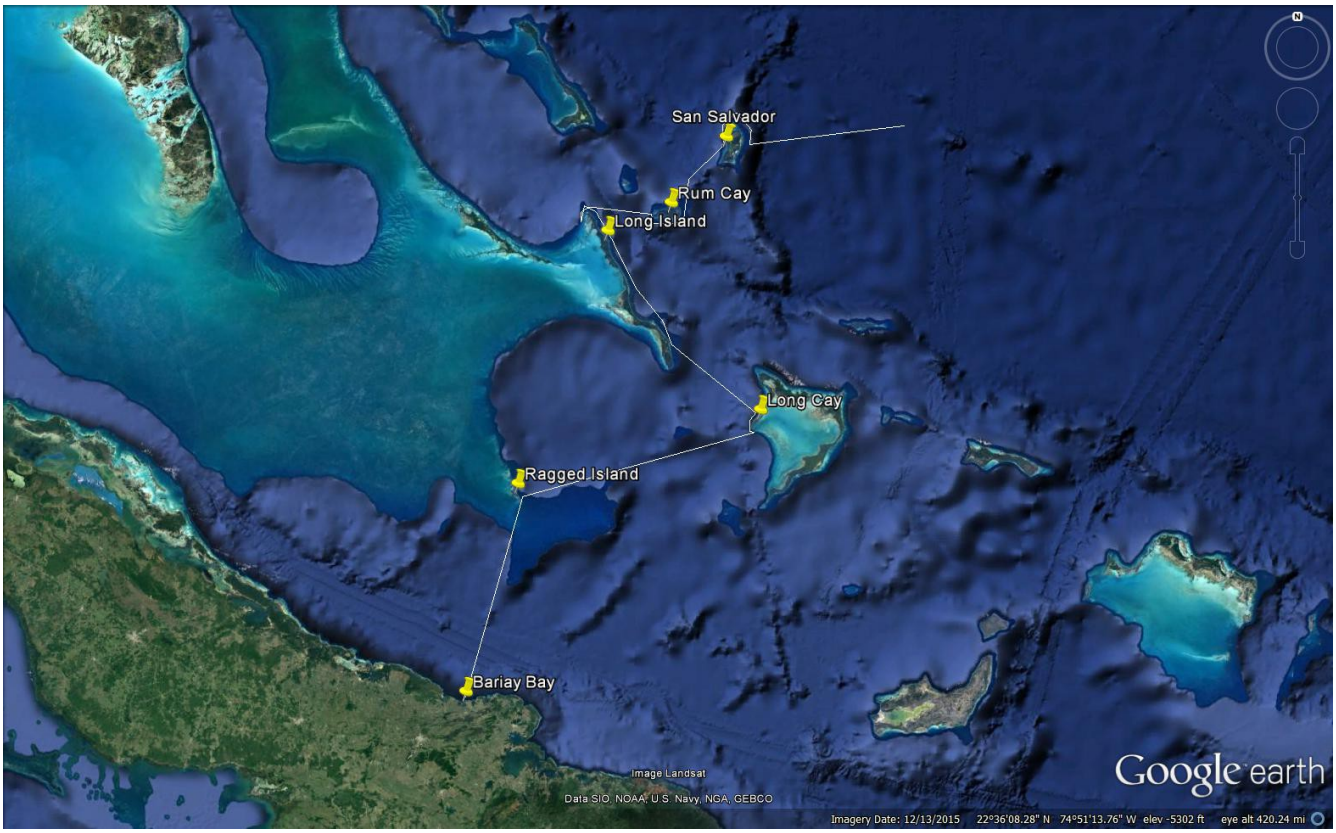
ADMIRAL MORISON'S ROUTE FROM WATLINGS/SAN SALVADOR TO THE RAGGEDS



Admiral Morison's description of Columbus's landing at and departure from the island he named San Salvador is found in pp. 315-331 of volume I of his two volume *Admiral of the Ocean Sea*, Boston, 1942. Morison's reconnaissance of San Salvador was carried out on board the *Mary Otis* in early June 1940.

The Admiral fixes Columbus's first landing at Fernandez/Long Bay on the west coast of Watlings/San Salvador.

On Watlings/San Salvador Island in the 1980s, Charles Hoffman excavated a substantial Lucayan settlement, contemporaneous with the first landing, close to the coast of Long Bay, where advocates of this island suppose Columbus first disembarked. Dr. Hoffman describes the Long Bay site as lying "between 100 and 200 meters from the beach of Long Bay." The site is suspected to "cover quite a few hectares" and may "involve a linear distance of some 7 km." By Columbus's account, it was not until the second day after he anchored that he first saw a native village. In view of the apparent size and proximity to Long Bay of the San Salvador settlement, it does not fit Columbus's description of settlements containing no more than fifteen houses.

14 [27] October: According to Morison, Columbus's fleet proceeds southwest from Fernandez or Long Bay, in the late afternoon. At a distance of 15 miles [on pg. 331, note 4, Morison changes this to 10 miles], the fleet spies the six hills of Rum Cay which quickly merge into a single island. The fleet spends the night hove-to. These six hills are supposed to conform with Columbus's statement "and I saw so many islands that I knew not how to resolve to which I should go first."

NB: Morison states that Columbus took six natives captive on San Salvador; Columbus states he took seven.

15 [28] October: Morison writes on p. 316:

> Unable to reach this six-in-one island before dark, the fleet lay-to that night. Filled away at dawn, and at noon made land. Columbus named this second island of his discovery *Santa María de la Concepción* after a doctrine to which he was devoted, the immaculate conception of the Virgin. The modern name is Rum Cay.[5]

Note 5: "There is no doubt about this identification, but an island 13 miles NW of Rum Cay was named Conception Island in the nineteenth century in accordance with the theory that Cat Island was San Salvador."

Morison continues:

> Columbus describes this island as ten leagues long and five leagues wide. This is the first instance of what we shall find numerous examples of his using, when sailing alongshore, a different league from the sea league of 3.18 nautical miles [the league of four Roman miles, now shown to be wrong]. Whenever Columbus estimated distances run at sea, he was usually accurate within 10 per cent. But when he was estimating the length of a coastline, he used, consciously or unconsciously, a league of about 1½ nautical miles.[6]

Note 6 refers to a table of distances mostly on Cuba, actual and reported by Columbus. At the top of the table Morison cites Columbus's estimate of the length and breadth of his second island as 15 leagues. **He notes that these dimensions on Rum Cay total 15 miles!** The second entry allows 12 leagues from the *Cabo del Isleo* on the fourth island [Bird Rock at the NW point of Crooked Island] to *Cabo Hermoso* on Long Cay/Fortune island [Windsor Point]; here Morison reckons 18 nautical miles. Twelve data points, 2 among the islands and 10 off Cuba, result in equating 1 Columbus shore league to 1.5 nautical miles!

15 [28] October: Morison makes no mention of Columbus's observation that "the tide detained me." Nor does he mention the fact that Columbus "charged all his sails" in order to anchor for the night of the 15th at the western cape of the second island. Thus described, Columbus sails from dawn to dusk with a full complement of sails to cover 15 nautical miles, a distance he would normally have covered in about two hours!
At the time of anchoring he sees a larger or higher island to the west. Morison identifies this as Long Island, seen at a distance of 22 miles! I doubt it was visible from *Mary Otis*.

16 [29] October: Morison correctly observes that the next Spaniard to visit the islands was Alonso de Hojeda [in 1500]. He also correctly remarks that the wind shifted to blow toward the southeast [Dr. Dunn in his 1989 edition of the *Diario* incorrectly translates this "from the southeast" (*i.e.* toward the northwest). In note 3, p.79 of his book, Dunn writes "The direction of the wind from the southeast is evidence that Columbus's anchorage was on the south shore of the island." This is a double howler!].

After two San Salvador natives have escaped, Columbus kindly receives a native who came to the fleet to trade a clew of cotton. He then sets a course to the west which he steers with little wind. In mid-channel the flagship picks up a solitary Lucayan in a dugout and proceeds to the third island off which the fleet lies a-hull the night of the 16th, receiving many visits of natives in dugouts. He describes this island as all beaches without rocks. We possess an aerial video of the entire eastern shore of Long Island showing forbidding and largely continuous ironshore toward its northern end.

17 [30] October: Morison's fleet anchors off Burnt Ground, Long Island, where around nine the next morning (*terce)* the ships' boats are sent ashore to fetch water. Columbus notes trees with differing branches growing on a windward shore! [Here we must look for all beaches and no rock and the opulence of Long Island's east coast vegetation.] He sets sail to the NNW with the intent of circumnavigating the island in order to arrive at *Saometo*, which the natives say is larger than the third island.

Columbus explores a marvelous harbour, large enough for 100 ships, with the ships' boats, finds it too shallow for his fleet [less than 7½ feet in depth]. Morison identifies this as an indentation behind Newtor Cay at the north end of Long Island. Columbus takes on drinking water at a village that Morison posits is there where Columbus's men find cotton hammocks in the natives' houses. Morison, p.323:

> "After taking on water," says Columbus, "I returned to the ship and made sail, and sailed to the NW until I had explored all that part of the island along the coast which runs east-west." In other words he rounded the Aeolian limestone cliffs of Cape Santa Maria, and sailed far enough to see the coast of Long Island falling away to the southwestward. … So the fleet came about at nightfall, and all that night, an oppressive and rainy one, steered E, ESE, and SE in order to keep clear of the land.

In 2014 and 2015, we found these Aeolian limestone cliffs impressive enough to merit mention.

18 [31] October: Morison, p. 324:

> Daybreak October 18 found the fleet "at the SE cape of the island to which I have to go." By the southeast cape he must have meant the southerly third of Long Island, from the Strachan Cays onward. "After it cleared up I followed the wind and went around the island as far as I could, and anchored in weather such that I could no longer sail; but I did not go ashore." This anchorage must have been off or very near the village of Roses.

Too many 'must haves' spoil any hypothesis!

19 October [1 November]: Morison, p. 324: *Mary Otis* spends the night of 10-11 June 1940 hove-to in the Crooked Island Passage.

> At daybreak on the nineteenth, about 5 A.M., Columbus ordered the anchors broken out, and dispatched his fleet fanwise in search of Saomete: *Pinta* to the ESE, *Niña* to the SSE, and *Santa María* between them to the SE. The caravels had orders to proceed on their respective courses until noon, when they should converge on the flagship, unless land were sighted earlier. Wind came fresh out of the north. At about 8 A.M. Pinta, having made 14 or 15 mies from the Long Island anchorage, sighted the Blue Hills of Crooked Island (elevation 200 feet) bearing about E by South, distant 20 miles. *Santa María* was about 5 miles to leeward, and *Niña* as far again; but Columbus had a system of signaling by gunfire, so they were able to communicate. All three altered course for Saomete, which Columbus named *Isabela* after his royal patroness. Before noon the fleet made rendezvous off the islet now called Bird Rock, and which now supports a high and powerful lighthouse to guide vessels through Crooked Island Passage. …
>
> *Santa María* and *Pinta* paused off Bird Rock only long enough for *Niña* to catch up: fortunately the wind held north, so she was able to fetch. The fleet then squared their yards and coasted along the curve of Crooked and Fortune Islands, a distance of about 18 miles, to the southern point of Fortune, which to Columbus seemed so exceptionally beautiful that he named it Cabo Hermoso.[14]

> **Note 14:** "The Journal for October 19 says that the fleet "ran along the coast from the islet to the W" for "12 leagues" to Cabo Hermoso. *Gueste* (W) must be a scribe's error for *Sueste* (SE); for a course W from Bird Rock – the only possible identification for the "islet" – would have taken the fleet back across the passage to Long Island, whilst the first course that one would steer to follow the shore from a position off Bird Rock would be SE. The distance, 12 leagues, is another case of Columbus's "land Leagues" of 1.5 nautical miles."

This famous **note 14** points out the arbitrary changes needed to reconstruct Columbus's route for all central Bahamas presumed landings. Rejection of these unwarranted changes automatically disqualifies all central Bahamas first landings!

Morison continues, p. 325:

> "And it is indeed handsome," says the Admiral, "round and low-lying, with no shoals offshore … and here I anchored this night Friday until morning." The south end of Fortune Island is bold, and the anchorage there is still recommended for its excellent holding ground – it is amazing how often Columbus found the best anchorages. But nobody would call that end of Fortune Island *hermoso* today. Low cliffs of dark, weathered Aeolian limestone, which is far from a beautiful rock, interspersed with a few small sand beaches, support a plateau that is covered with scrubby trees and bushes. The hill on Fortune Island, which Columbus praised as "a thing that beautifies the rest – not that it can be called a mountain," is green and shapely; but both island and cape must have been covered with an exceptionally fine growth of tropical hardwood in 1492 to have aroused such enthusiasm on the part of Columbus. Fortune Island "is the most beautiful thing that I have seen," he wrote, "nor can I tire my eyes looking at such handsome verdure, so very different from ours. And I believe that there are in it many plants and many trees which are worth a lot in Spain for dyes, and for medicines of spicery; but I do not recognize them, which gives me great grief."

20 October [2 November]: Morison writes, top of p. 326:

> From his anchorage off the south cape of Fortune Island (which he did not name although he noted that it was separated from Crooked Island) Columbus looked into the great protected sound now known as the Bight of Acklins, but could find no channel to enter.

Something is wrong here. It certainly appears that the previous Morison paragraph indicates he named the southern cape of Long Cay/Fortune Island [Windsor Point] *Cabo Hermoso*. Moreover, northward up the eastern shore from the southern tip of this Island, there is a channel deep enough to allow working island transports to reach the east coast harbour serving what's left of Albert Town. We've an aerial video of just such a transport in motion. It seems from this and the following passage that the Admiral has interpreted *laguna* as lagoon and has erroneously ascribed it to the Bight of Acklins.

Morison continues:

> The Bight is very shoal. So at sunrise on Saturday, October 20, the fleet weighed and proceeded to the anchorage (still recommended in official Sailing Directions) off the gap between Crooked and Fortune Islands. Columbus hoped to enter the Bight of Acklins at this point, which he named Cabo de la Laguna, and to proceed across the lagoon to Acklins Island, where his pressed guides said he would find the king who owned so many golden vessels. But there was even less water here than at Cabo Hermoso, so that the Admiral decided to sail around Crooked Island by its outer coast. Before dark the fleet put to sea again. The wind flattened out, and *Santa María* lay-to that night; the caravels misunderstood the Admirals signals and anchored close to the shore.

Astonishing that Admiral Morison knows what Columbus hopes and what the Captains Pinzon misunderstood of his signals! Desiring to cross the Bight of Acklins here is a bewildering invention!

The fact that Morison ignores Columbus's statement (*Diario* 15v14) that he sailed to the island's **southwest cape** and named it *Cabo del Laguna* may have added to the geographical confusion here.

21 October [3 November]: Morison, p. 326:

> Sunday morning the twenty-first at 10 o'clock the whole fleet arrived at the Cape of the Islet, as Columbus named the northwestern cape of Crooked Island, and anchored in Portland Harbour, the small and well-protected anchorage between the cape and Bird Rock. Wind had veered to the eastward, so there was no use trying to proceed further in that direction.
>
> Here the Admiral and his captains made a shore excursion. They saw marvelous verdure, grass like springtime in Andalusia, air full of birdsong, flocks of parrots that "obscured the sun," and a great salt lagoon, on the edge of which they hunted and killed a large iguana. The only plant that Columbus thought he recognized was aloes; but as aloes was not introduced into America until the following century he must have seen one of the agaves, such as the Bahama Century Plant. ...

Morison's "great salt lagoon" is Columbus's "one of these ponds" *(vna destas lagunas)*: *Diario* 16r.17-18. His iguana, more than five feet long, was more likely a cayman.

For Mr. Keith Pickering, who believes that Columbus first landed at West Plana Cay and who has the honourable distinction of pointing out the only two Lucayan sites where Columbus's description of the second island conforms with actual geography, the fleet's anchorage near the western cape of the second Island is either Portland Harbour between Crooked Island and an unmentioned Bird Rock or off Crooked Island's Landrail Point, which place, noted during our 2014 expedition, is perilously shoal with patches of rocky bottom. Mr. Pickering's fourth island, whose northern point the fleet passes on 18 October and anchors at from the 21st to midnight of the 23rd, is Long Cay/Fortune Island. Now, if Admiral Morison had difficulty reconciling this island with Columbus's description, Mr. Pickering's route presents even more difficulty. This Cay is only about ten nautical miles long and is oriented northeast-southwest. The *Diario* states that the fleet sailed twelve leagues or 32 nautical miles "to the west" from the northern point (*Cabo del Isleo*) of the fourth island to *Cabo Hermoso "*which is on the west side*,"* that is, its northwest point. Moreover, neither Admiral Morison nor Mr. Pickering pay any attention to Columbus's detailed description of this cape, which uniquely conforms with Northwest Point on Great Inagua. The Admiral places *Cabo del Laguna* northeast of *Cabo Hermoso* whereas Columbus gave this name to a southwest cape sailing from *Cabo Hermoso*; Mr. Pickering doesn't even mention it.

Midnight, 23-24 October [5-6 November] Morison writes, p. 328, citing Columbus:

> … At midnight a breeze sprang up, and "I weighed anchors from the Island of Isabela, Cape of the Islet, which is on the northern side where I was lying, to go to the Island of Cuba, which I heard from this people is of very great extent and trade, and has gold, spices, big ships and merchants, and they showed me that to the WSW would lead to it. … And so until day I sailed to the WSW."

Morison continues, same page and the next:

> It was now October 24, and again he was crossing Crooked Island Passage. At daybreak the wind dropped flat, and only revived at noon, very feebly. As Santa María in a light breeze was at a disadvantage compared with the caravels, Columbus like a true seaman set every sail he had: main course with two bonnets, maintopsail, fore course, spritsail under the bowsprit, lateen mizzen, and even a bonaventure mizzen on the poop, contrived out of the boat's mast and sail. But by nightfall, when Columbus reported "Cabo Verde of the island of Fernandina, which

> is at the western point of the southern end, " bearing NW distant seven leagues, the fleet had made only 21 miles from Bird Rock.[17]
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> **Note 17:** Journal, October 24. A WSW course from Bird Rock brings one to the NW bearing of C. Verde at latitude 22° 42'.5 N, longitude 74° 42'.5 W. The distance thence to C. Verde is only 12 miles, not 7 leagues; but C. Verde is visible 14 miles at most, as I observed. The current in Crooked Island Passage is unpredictable.

Morison continues, p. 329:

> Columbus then signaled the fleet to strike all sail except the fore courses; and later, when the wind freshened, stripped down to bare poles. He explained for the Sovereigns' benefit what all good seamen knew, that it would have been imprudent to carry sail at night "because all these islands are very steep-to, with no bottom around them except within two lombard shots, and this all patchy, a bit of rock and another of sand, for which reason it is not possible to anchor safely except by eyesight." The hunters' moon was only four days old, affording little light and setting early. That night "we did not make two leagues, " he says.

Admiral Morison estimated that one lombard shot covered a distance of from 500 to 1,000 yards. Two lombard shots are therefore 1,500 ±500 yards, or a bit under a mile ±.

The "harvest moon" is the full moon closest to the autumnal equinox (22 or 23 September), and the "hunters' moon" is the one following it. These names date from the early 18th century and are common in New England. Using this terminology, Columbus's harvest moon came full on 5 October. His hunters' moon came full on 4 November.

Our experience with the tropical moon is that even a four-day-old waxing crescent moon [seventeen days after full] casts enough light over the open sea far from terrestrial loom to navigate by and skirt land which has been spotted, but it does set early, in this case about 10 P.M..

In describing the route he postulates for Columbus on this day from a first landing at the Plana Cays, Mr. Pickering has the fleet depart at midnight from the north end of Long Cay/Fortune Island with its two cays (one might more correctly say three) rather than one. Since his technique in plotting Columbus's Lucayan course is to do so backwards from the Ragged Islands, he finds it convenient to combine certain distances in the *Diario* as remarked below.

25 October [7 November] Morison continues, p. 329:

> At sunrise October 25 the fleet made sail and resumed the WSW course. At 9 A.M., presumably on the advice of his Indian guides who were anxious to pick up the line of cays that marked their canoe route to Cuba, the Admiral changed course to West. The trade winds blew fresh that day, so that at 3 P.M., after logging 32 miles, "they sighted land, and there were seven or eight islands strung out north to south."[18]
>
> **Note 18:** In plotting this course I have assumed a night run WSW of 6.5 miles (about 2 leagues), and have reduced Columbus's distances of 5 leagues WSW to 9 A.M. and 11 leagues W to 3 P.M. by 9 per cent. This brings the fleet at 3 P.M. to about latitude 22° 34' N, longitude 75° 38" W, which is about 12 miles from the nearest cay. Columbus says they were 5 leagues (16 miles) distant, but that is too far for visibility.

Observe how difficult this all becomes with Admiral Morison's 1942 league of 3.81 nautical miles shortened by an arbitrary 9% to 2.89 nautical miles. But confusion in the matter of measurement here manifested itself again in the 1980s before most scholars accepted the Mediterranean league of 2.67

nautical miles as Columbus's customary marine metric:

Luis Marden was obliged to reduce the distances Columbus sailed across the ocean by 9 percent. See Luis Marden, 'The First Landfall of Columbus,' published in *National Geographic*, vol. 170, No. 5, November 1986, p. 577:

> The recomputed course, using a league of 2.82 nautical miles and incorporating current and leeway, because of the push of the current again came out too far west. Measuring the overrun back to the first possible landfall, I found an excess of 9 percent. Recalculating the daily distances less this percentage, we came to a position some ten miles east-northeast of Samana Cay.

This style of methodology was tastefully and deservedly ridiculed by Commandante don Roberto Barreiro-Meiro, "La Isla del Descubrimiento : San Salvador, ¿Guanahaní o Samaná?," *Revista de Historia Naval*, Madrid, Instituto de Historia y Cultura Naval Armada Española, Año V, núm. 18, 1987, pp. 15-26.

In 1941, Captain McElroy was obliged to resort to the same arbitrary expedient, even though he used a different set of data for computing the effect of currents across the Atlantic. Admiral Morison records this confusion in *Admiral of the Ocean Sea*, *cit.*, Vol. 1, p. 278, note 7.

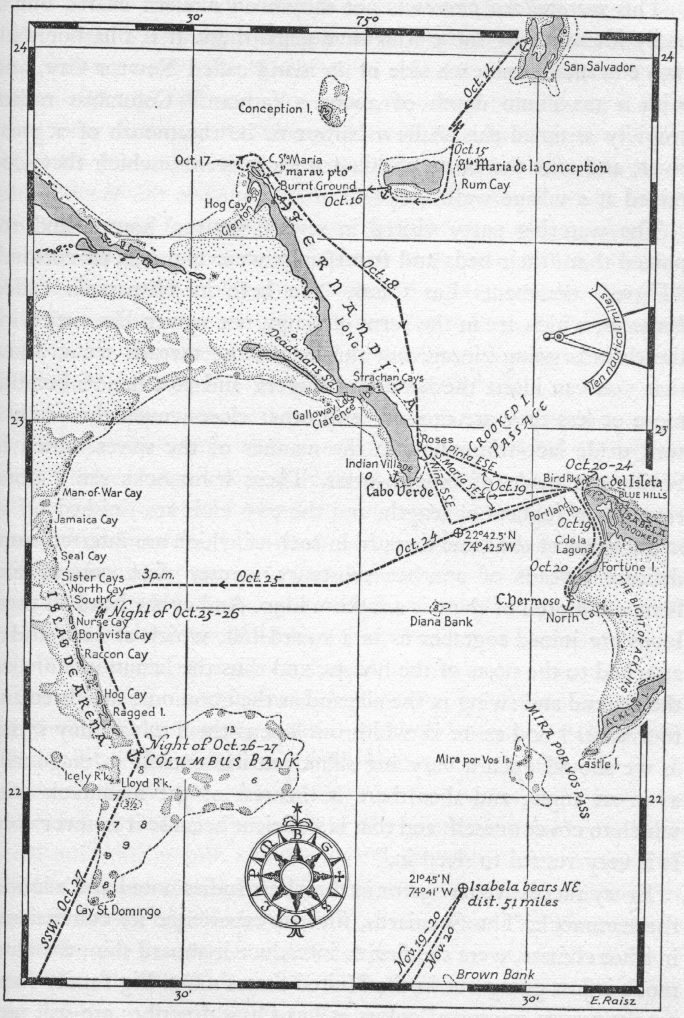
> Captain McElroy (*American Neptune* I) ascertains that Columbus's overestimate of distance on the First Voyage, outward passage, was 9 per cent; in other words, if you reduce the day-by-day distances as given in the Journal by 9 per cent, and apply van Bemmelen's map of compass variation in 1500 by plotting the courses as given in the Journal, you bring the fleet to within a few miles of San Salvador at 2 A.M., October 12. I have found the same reduction necessary on two measured distances (Crooked Island Passage, Windward Passage) later in the voyage. Consequently when Columbus says "league" for an ocean distance he means a unit of 2.89 nautical miles, instead of 3.18 as it should have been. ...

O stultifera navis! Note, keen-eyed reader, that Morison and McElroy, with their 9 percent adjustment, support Marden, and Marden, with his more refined data and same 9 percent adjustment, supports the length of the Mediterranean league now accepted as Columbus's league [2.63 miles is effectively 2 2/3 miles].

As noted above, Mr. Pickering combines the two leagues the fleet drifts during the night of 24-25 October with five leagues sailed west-southwest the next morning to make seven leagues in that direction. Then he combines the eleven leagues sailed on the 25th with spotting the Raggeds at a distance of five leagues to make a total distance sailed towards the west of sixteen leagues. This is not what is recorded in the *Diario*.

Since Las Casas's paraphrase of Columbus's words resumes under 25 October, the *Diario* offers much less detail on Columbus's voyage. Presumably the fleet lay-to eastward of the Raggeds the night of 25 October.

26 October (8 November) ends with the fleet's anchoring on the Columbus Bank.
Two days later it arrives at Bahia Bariay on the north coast of Cuba.



COURSE OF COLUMBUS'S FLEET
THROUGH THE BAHAMAS

ADMIRAL MORISON'S ROUTE FROM WATLINGS/SAN SALVADOR TO THE RAGGEDS

N O T E S