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# Why We Are Favorable for the Watling-San Salvador Landfall

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## PART I INTRODUCTION

During numerous surveys made in the Bahamas we have visited Eleuthera, Cat Island, San Salvador (Watling), Rum Cay, Conception Island, Samana, Great Exuma, Long Island, Crooked Island, Long Cay (Fortune), Acklins Island, Mayaguana, Great Inagua, Little Inagua, Caicos and Grand Turk.

We have also paid attention to the waters between islands, keeping in mind the route indicated by Morison and those indicated by Navarrete, Varnhagen, Fox and, above all, by those who came after Morison: Verhoog, Link, Didiez Burgos and Robert H. Fuson.

The latter's scientific essays are particularly worthy of respect and consideration. The hypotheses expounded by Robert H. Power corresponds almost exactly to that of Verhoog. And the very accurate arguments of Oliver Dunn constitutes a strengthening of support for Verhoog's and the Link's hypotheses and against Morison's theory.

We are convinced that in the great debate involving many choices and many arguments, some contrasting and some converging, four hypotheses are scientifically strong, many times verified on the site, and therefore worthy to be taken into consideration: the Watling's (today's San Salvador) hypothesis, expounded for the first time by Munoz and later supported and verified on site by Becher, Murdock, Morison, McElroy, Wolper, Taviani and Kelly; the Grand Turk-Caicos' hypothesis, expounded the first time by Navarrete and then supported and verified on site by Gibbs, Link, Fuson and Power; the Cat Island hypothesis, suggested to Washington Irving by his naval counsellor, which was accepted by that greatest geographer Humboldt and recently reaffirmed by the Portorican Columbian Aurelio Tio; and the Samana hypothesis, suggested by HARRISSE and Fox and lately supported, after long research, by Joseph Judge, Luis and Ethe Marden and Eugene Lyon.



We will examine in due time in proper notes the Caicos hypothesis (in particular that of the Links), the Cat Island hypothesis (particularly Aurelio Tio's), and the Samana hypothesis.

We intend now to explain the reasons why the author of these notes and his assistant, Dr. Paolo Masetti, lean toward the Watling-San Salvador hypothesis.

The first important argument against the hypothesis of the Links, and of all those who want to place the Landfall on Caicos or on Grand Turk, concerns the route of Columbus's Atlantic crossing from the beginning to its end.

It is quite impossible to agree on the exactness of the route indicated by Morison and McElroy: there are arguments concerning the measures of the mile and the league adopted by Columbus and the figures he gives are entirely approximate, being very rudimentary computations of the ship's speed and of the longitudes.

We want also to take into consideration the test made by Luis and Ethe Marden with the scientific support of Lyon. The hypotheses of the Atlantic routes — the one of Morison and McElroy and that of the Marden and Lyon — are both approximate, but they have a common ground: neither places the arrival point south of 23°. Grand Turk and East Caicos are at 21° 30' N. and at 21° 40' N. of latitude.

However one interprets the daily figures for the route (the true ones and those altered for the sailors) written by the Genoese in his *Journal*, it is very difficult to suppose that his ships were displaced 6 degrees SW in reference to the starting point. Indeed the displacement from 27° 42' N. (Iron Island's latitude) to 23° 56' N. (according to Morison-McElroy) or at 23° 5' N. (according to the Mardens) — notwithstanding the deviation toward NW from September 19 to 24 — can be justified only thanks to the remarkable change of route in the last days following the birds' flight. To suppose instead that the ships were displaced south of the 6° seems to us difficult indeed, if not impossible.

This is already an argument that we might consider decisive to exclude, not the hypothesis regarding Cat Island and Samana, which are on latitudes near enough to those of San Salvador, but the Caicos and Grand Turk hypothesis, which seems to be the one highly favored in relation to the hypothesis of Morison-Wolper-Taviani-Kelley.

But we do not intend to close our address with this argument, although it is important. The scruples and passion of contemporary scholars who support the original hypothesis of Navarrete regarding Grand Turk-Caicos (Link, Verhoog, Power, Fuson, Dunn) are such that they deserve thorough analysis in all their aspects. That of the Atlantic crossing route is only one of them; the other three aspects are the characteristics of the Landfall island, the course along the coast of this island, and the course and its halting-places in the Bahamas archipelago.

Regarding this last subject, a first fact is evident; opponents of Morison's hypothesis do not agree on the indication of the course between

islands and do not agree either on the exact identification of the first island.

While it is evident that for the Links the landfall would have been in the present East Caicos, for Fuson and Power it would have occurred in Grand Turk, since to this island Fuson attributes the name of Guanahani-San Salvador.

But more important are the divergencies about the route. Let us leave aside Navarrete and Kettel, who did not conduct verification on the spot, and analyse the hypotheses proposed by those who traced the routes after having confirmed them in person.

*Route according to Gibbs*

Grand Turk → Caicos → Little Inagua → Great Inagua → Cuba.

*Route according to Verhoog*

Grand Turk → Caicos → Providenciales → Mayaguana → Plana Cays → Crooked Island → Fortune (Long Cay) → Acklins Islands → Little Inagua → Ragged Islands → Cuba.

*Route according to Link*

Grand Turk (only the light) → Caicos (Landfall) → Providenciales → Caicos → Mayaguana → Plana Cays → Samana → Long Island → Crooked Island → Fortune (Long Cay) → Ragged Islands → Cuba.

*Route according to Power*

Grand Turk (Landfall) → Providenciales → Caicos → Mayaguana → Plana Cays → Acklins Islands → Great Inagua → Little Inagua → Ragged Islands → Cuba.

There are therefore four different hypotheses that oppose that of Morison-Wolper-Taviani-Kelley.

There is also another variation, the first assumption of Becher regarding a stop in Great Exuma, an assumption correctly criticized by Fox. If Exuma is eliminated, what is constant in all the authors is: Watling (San Salvador) → Rum Cay → Long Island → Crooked Island → Fortune (Long Cay) → Ragged Islands → Cuba.

Already this has persuaded me to be skeptical about the method used to solve the Landfall problem by focusing on the route really taken by the three vessels of the discovery, all extraordinarily undamaged between the treacherous waters and beaches of the isles and of the coral cayos.

There are some parts of the *Columbus's Journal*, between the 14th and 24th October, which give information and measures that do not fit any of the hypotheses proposed, neither those which offer a single solution (Murdock-Morison, McElroy, Taviani, Kelly) nor those which propose various solutions (Gibbs, Verhoog, Link, Power, Fuson).

Our impression is also strengthened by the results of the expedition of the Links, accompanied by Capt. Weems and by Commodore Mendel L. Peterson of the Smithsonian Institution.

In a boat and in an airplane (at a height of 65 feet) they explored all the possible routes of Columbus. These were their conclusions: for 11 reasons Watling should not be the Landfall island; for 13 reasons the route indicated by Verhoog should not be valid, except for its indication that the Landfall should be in the Caicos islands. Such results should agree with Link's theory: Caicos → Samana → Long Island → Crooked Island. But we'll see in another paper (Part II, this presentation) how this theory is instead unacceptable, according to my opinion.

What is interesting next is to establish whether the method can be used to obtain, if not with certainty at least with probability, the exact Landfall island, and to leave aside the interpretation of the route of Columbus' cruise in the Bahamas, starting on October 15, and focus attention on the characteristics of the island, as the Genoese navigator describes it.

In favor of this method there is another argument, at least in our point of view, conclusive.

The information that Columbus gives us on the first island discovered may be affected by his excited state, by his need to find everything attractive, by his desire to report strong and astonishing reactions. On the whole, however, substantially the information is valid.

However, the accuracy of the substance of the information Columbus gives on the route is doubtful. First of all, the Genoese is never precise — and he couldn't be — in his sight measurements, especially the terrestrial ones. It is not to be forgotten with how much confidence he will assure us that Hispaniola is larger than England (when in fact it is less than a third) and that the mountains around Baie de l'Acul are higher than the Peak of Tenerife (when they don't reach even half of its height). It is, on the other hand, recognized by everybody that more than once in the *Journal* miles are confused with the leagues and vice versa, and sometimes a confusion on the cardinal points occurs.

But there is more. We shall see further on that the latitude grades of Cuba were wrong, as there is no doubt that the mistakes were made either by Columbus or by the copyist, so that later, competing explorers could not take advantage of it. We can't therefore even be certain that also for the route through the Bahamas the hand of some copyist has not intervened to alter some number. This is not the case with the geographical, hydrographical, orographical, botanical, and maritime particulars, which Columbus speaks of in detail in presenting to us the island of his first landfall.

Decided upon the priority of the method, we now proceed examining, one by one, the characteristics of Guanahani, of the local inhabitants of Columbus's San Salvador, as they are described in the *Journal*.

On the 11th of October the *Journal* says "illegaron a una isleta de los Lucayos"; on the 13th of October: "esta isla es bien grande".

The apparent contradiction is easily explained. On the 11th of October the one who writes is Las Casas, a copyist and summarizer of the diary: on

the 13th of October, as it seems from the context, the one who writes is Christopher Columbus.

To Las Casas, and to all of us from the Mediterranean, all of the Bahamas islands — except one — are “isletas”. Only Andros, the surface of which (about 6 thousand square kilometers) is three quarters of Corsica and nearly the double of Maiorca, would be called an island.

Columbus instead calls it “bien grande”, meaning that it is not a small island, but not a rock either. It is to be remembered that on the 13th of October the Genoese had already seen many rocks, small islands, and cayos after arriving at and sailing around San Salvador. Comparing them with San Salvador — with its 155 km<sup>2</sup> — it fits the definition of “bien grande”, while to Las Casas — with the European islands and the major Caribbean ones, to him now already known, in mind — it fits to the definition of “isleta”.

Let us now examine the other islands that compete for the title of the Landfall island.

To the double definition of Las Casas correspond also Mayaguana (285 km<sup>2</sup>), Cat Island (388 km<sup>2</sup>) and Caicos. This last one — and we’ll talk about it again when speaking about Link’s theory — was an island only at the end of the 15th century; today it is divided by marine canals into four islands (North Caicos, South Caicos, Middle Caicos, East Caicos) that in area add up to about 300 km<sup>2</sup>. Therefore Caicos has the conditions of being an “isleta” for Las Casas and “bien grande” for Columbus.

But Grand Turk doesn’t at all match these conditions: it is a very modest island, 10 km long from north to south, less than 4 km wide at its widest point from east to west. And also Samana Cay doesn’t fit: it is a simple cay 14 km long from east to west and less than a kilometre wide south to north. We now examine again the features mentioned in the *Journal*.

*“Muy llana”*

Each of the islands examined is flat. It is enough to remember that the highest point of all the Bahamas Islands is 69 meters.

*“Sin ninguna montaña”*

None of the islands in question has mountains.

*“Una grande restinga de piedras, que cerca toda aquella isla alrededor”*

The coral reef which surrounds the entire island is a peculiar characteristic of San Salvador, of the Caicos Islands, of Grand Turk and, even if less, of Mayaguana, but it is not found either in Cat Island or in Eleuthera.

*“Una laguna en medio muy grande”*

This is a characteristic only found in San Salvador. Here there was, and today is as well, a large lagoon (Great Lake) about 16 km long from north to south, and at the largest point, more than 3 km wide. Caicos as well has many lagoons, but of modest proportions. There is not a “en medio”, a “muy grande” lagoon.



*“Muchas aguas,” “y much agua”*

San Salvador has a lot of fresh water, especially during the rainy season, and October is its end. There is plenty of fresh water on Mayaguana, Cat Island and Samana. Not Caicos and neither Grand Turk, which suffer from lack of fresh water.

*“De arboles muy verde”*

This characteristic is to be connected with abundance of water and automatically eliminates Caicos, which was dry and deserted. It has none of the full bloom that Columbus attributes to San Salvador.

In October, San Salvador was — and is — covered with a blooming vegetation. Flora is basically changed from Columbus's time. Of the big mahogany trees, today in San Salvador there are only the trunks. The transformation occurred during the North American War of Independence, when colonists loyal to the English Monarchy — and therefore known in history as Monarchists — moved from the continent to the islands with their black slaves, and cut down forests, changing them into cotton plantations. When the cotton cultivation became unprofitable, the plantations were abandoned: one can still see here and there some plants with white flocks. Besides mahogany, which is now only a memory, there were and still are in San Salvador many trees, which make it in every month of the year very green and pleasant to view. Woods and brush are very thick and tangled, covering it completely, and between the various plants there are the Sabal dwarf palm and the *Lignum vitae*.

To conclude: Grand Turk and Samana are to be excluded because they are small islands — neither “isleta”, nor “bien grande”.

Cat Island is to be excluded because it lacks abundant water and vigorous vegetation; but also has only a small lake in the southern part and certainly not in the middle; and it doesn't have “la grande restinga de piedras” which “la cerca toda alrededor”.

Mayaguana is to be excluded because, although it has a lot of fresh water, it hasn't any lagoon in the middle, nor in any other place.

Eleuthera is to be excluded, as well, even though it has a lot of water and vegetation, because there is no lagoon and it isn't completely surrounded by a coral reef.

Caicos is finally also to be excluded because its lagoons are of modest proportions; it hasn't much water and vegetation and it is, on the contrary, dry and desolated.

Up to now we have followed the more certain text, the *Journal*. Let us now examine Las Casas' and Don Fernando's texts.

Las Casas in the *Historia* repeats “sin montaña alguna”, “como una huerta llena de arboleda verde y fresquisima toda baja”, features already mentioned in his copy of the *Journal*. He also adds new information, “isla de quince leguas de luengo, poco mas o menos”, and he specifies that the lagoon which “estaba en medio” was “de buena agua dulce de que bebian”.



Las Casas in the *Apologética Historia* always says that in the “cartas del marear” it is called “Triango, como ignorantes los pintores de la anti-guedad” (that is to say: the map-makers do not know the Indian name). And he adds that “tiene la diche isla forma de una haba”.

Don Fernando is more moderate. He only says that “era una isla de XV leghe di lunghezza, piana e senza montagne, piena di alberi verdi e di bellissime acque, con una gran laguna in mezzo, popolata di molte genti”.

It is important that Don Fernando, and also Las Casas, does not say that the lagoon was fresh water. Because — as is well known — the big lagoon in San Salvador is sea-water. The abundance of fresh water is however real, especially in October, at the end of the rainy season. As Las Casas had never been to the Lucayan Islands nor to San Salvador, it is obvious that the sentence “de buena agua dulce de que bebían” is an arbitrary addition.

The particulars of the form of the island, “triango” and “forma de una haba”, refer to the maps of the time, particularly during the ensuing period of Spanish explorations (the greatest which included them all, that of Ponce de Leon’s in 1513). Two are the particulars which suit perfectly to Watling-San Salvador Isle; and which do not suit any other island, let us say, in competition.

The only new information which disturbs our thesis is the length of 15 leagues. Great importance does not attach to this number because more than once in the *Journal* there is some confusion between miles and leagues. If instead of 15 leagues we substitute 15 miles, the measurement corresponds nearly perfectly to the length of San Salvador from south to north: 13 miles, which means 21 km, corresponds almost exactly to the 15 Mediterranean miles of Columbus: a little more than 22 km.

The reason why Columbists haven’t given a great importance to the above mentioned detail is that the number of 15 leagues is completely out of proportion not only for San Salvador-Watling but also for Caicos and even more so for Grand Turk and Samana. Since our opponents all lined up for the Caicos-Grand Turk solution, they are obviously in accord with us in accepting the hypothesis of a confusion between leagues and miles. There is only one hypothesis which takes the 15 leagues into serious consideration and it is the one which identifies Cat Island as the Landfall. This hypothesis is discussed in the paper we have already circulated.

So far, from this initial discussion, San Salvador would seem to be the Landfall site. But there is more to it.

On the 14th of October, Columbus sails along the coast of the island in the direction of North/North-East. The natives invite him to land, but he “wanted”, he writes on the *Journal*, “to see a great reef of rocks which encircled the whole of that island, while within there is deep water and a harbour large enough for all the ships of Christendom, the entrance to which is very narrow. It is true that inside the reef there are some shoals, but the sea is no more disturbed than the water in a well. And in order to see all this, I went this morning, that I might be able to give an account of all

to Your Highness and also say where a fort could be built. I saw a piece of land, which is formed like an island although it is not one, on which there were six houses; it could be converted into an island in two days”.

This harbor, protected by the coral reef — the waters being as still as in a well, that can receive all the vessels of Christianity — is to be found only in San Salvador. It is Graham’s Harbor: it was identified by Morison, by Wolper and by the author of this essay.

We have also discovered the peninsula which “with a couple day’s work can become an island”. The slow, inexorable action of the sea has made it into an island, wearing away the thin isthmus made of rocks and digging a real canal in which one can walk on foot during the low tide. Either some natural phenomenon caused this or the corsairs (who frequented and inhabited Watling) or the English, sometime during their history there employed the small island as a fortress. An old iron gun was found there at the end of last century.

As to the six houses on the peninsula, today an island, which the *Journal* refers to, Wolper was able to trace them as a sure ancient sign of Indian habitation.

Objectively, we must say that this port, which Wolper, Morison and we have identified as being Graham’s Harbor, is, to an extent, a source of contradiction.

Among the supporters of the Grand Turk hypothesis there is one (Power) who denies that Graham’s Harbor might be the port of which Columbus speaks on the date of October 14th; and there is one (Fuson) who denies that Columbus had gone with long boats toward it in the morning of that October 14th.

Let us face the first objection. The *Yachtsman’s Guide to the Bahamas* — says Power — demolishes Morison’s theory of the port. *The Guide* says: “There are no real sure ports in San Salvador but the anchoring is quite comfortable in Cockburn Town (the capital). There is then the open anchoring of Graham’s Harbor, which is situated in the north-east side of the island where a boat with a draught of 7 feet can enter. The legend says it is the one Columbus described which “could contain all the vessels of Christianity”.

This reference to the *Guide* doesn’t seem at all pertinent to us. It is obvious that today’s *Guide* must advise the tourists on the risks of shallow waters of the Graham’s Harbor, risks Columbus never hid or left out.

He in fact wrote: “Es verdad que dentro d’esta cintha ay algunas baxas”. Today’s *Guide* has and must have a different vision about the sea than the one Columbus had, as he was used to 100 tons ships. And on the other side Columbus — during all his first journey — was generally elated and this many times induced in him fantastic exaggerations about ports, bays and river estuaries.

We know that Wolper’s interpretation which is very important is completely different. But as from now we can affirm owing to much personal

experience, that it concerns a pond of over 30 km<sup>2</sup>, that there are many shallows and that in some points the seabottom is more than 10 meters deep. It is clear even today that the island (peninsula) could serve as a fortress.

While Power denies that Graham's Harbor might have been the port which Columbus talks about in the *Journal* on the 14th of October, his colleague Fuson says it might be and — to oppose our theory and Morison's — he troubles himself to demonstrate that Columbus didn't go to that port on that important morning of October 14th.

To argue this, Fuson interprets the Spanish language in his own way and particularly the phrase "en el camino de": a conception which would allow him to affirm that Columbus — in the morning of the 14th — would have sailed not towards the North-East — toward where Graham's Harbor is situated — but towards the South-West.

One of Fuson's supporters, Oliver Dunn, thinks he can demolish Morison's hypothesis and ours on the Landfall by utilizing alleged transcription mistakes in the *Journal*, so we go back to the text of October 14th, in its absolute literal transcription: "fue al luégo dla ysla en el camino del nornord-este *pa* ver la otra *pte* que era de la pte del leste q avia". We think that this passage should be interpreted to mean: "fue al luégo de la isla en el camino del Nord-nordeste para ver la otra parte, que era de la parte del Leste, que avia".

Up to here there should be no controversy. The controversy starts here, regarding the translation of the few words we have italicized. Fuson translates *del* as meaning from. "He went along the island on the route *from* the north-northeast in order to see the other part which was the eastern part, that was there". Through such a device one would understand that Columbus went South instead of North-East, and wasn't able to find Graham's Harbor. In this way an important proof in favor of Watling (today San Salvador) collapses.

We can't understand for what reason one would translate *en el camino de* as *from*. We have compared the three Italian translations. Ferro, Caddeo and Braibanti translate the passage in question: "I led myself along the island, on the North-North-East route to see the other side" (Ferro); "I went out to sail along the coast of the island in direction North-North-East to examine the opposite coast" (Caddeo); "I sailed along the coast of the island in direction North-North-East, to see its oriental part" (Braibanti).

But first of all, Las Casas himself, copyist of the *Journal*, in writing the *Historia General de las Indias*, refers this way to the passage in question: "comenzo a caminar por el luengo de la costa de la isla, por el Nornordeste, para ver la otra parte de ella".

The elaborate disquisition made by Fuson is therefore without grounding.

We have stopped on this point for a time because the argument against the hypothesis of Watling-San Salvador constitutes one of the most exploited arguments. The question finds credit because, while it is easy to translate



from Castilian into Italian, it isn't easy to translate from Castilian into English.

Another issue often raised by the opponents of Watling-San Salvador is the reading of the *Journal* on the date of October 15th. It concerns some rather confused periods in which an island of 5 leagues from North to South and of 10 leagues from East to West is mentioned. Then another island which should be larger on the West side is also mentioned. The interpretation which we give — in accord with Morison — is that the first island is Rum Cay, called by Columbus Santa Maria de la Concepción, and that the second island is Long Island, called by Columbus Fernandina.

Fuson, Power and the sustainers of the Grand Turk hypothesis object that they do not match at all the measurements indicated by the *Journal*. And here they are right; but we do not worry about the question, as many other times Columbus gives wrong or inexact measurements, and sometimes even fantastic ones.

They also add that from the text it seems that the islands mentioned by Columbus are three: the first, which has no name (unnamed); the second, named Santa Maria de la Concepción; the third, Fernandina. And as there are not three islands, but only two in the part of sea considered on the Western side of Watling-San Salvador, the hypothesis that the latter is really the Landfall island would fall down.

We suggest the reader very carefully go through the sentences of the *Diary* that are object of conflict. They are very confused but the claim that they refer to three islands and not two is absolutely unfounded. The Spanish text and the Italian translations of Ferro, Braibanti and Caddeo (who have no preconceived ideas regarding the Landfall) leave no doubts at all. It concerns two islands. But the most decisive argument, which demolishes the objection, is that Las Casas (in chapters XLI and XLII of the *Historie*) interprets this part of the *Journal* without leaving any space for doubts: the islands are two: Santa Maria de la Concepción and Fernandina. The third island not named doesn't exist in their texts; its existence rises only from a biased reading of the *Journal*.

One more question. At the end of October 14th, the Admiral writes: "I looked at all the port and then went back to the ship and raised the sails, and I saw many islands and I couldn't decide to which to go to first. And then the men I had taken were telling me, by gestures, that there were so many that they could not enumerate them, and they named more than a hundred. Therefore at the end I chose the largest one and towards that I decided to go, and so I did; it must be away from San Salvador 5 leagues and so the other".

This passage of the *Board Journal* contains the most serious evidence against the hypothesis of the Landfall in San Salvador-Watling. The ship of Columbus was anchored in the sea, while raising the sails in that place no island can be seen, unless one wants to consider as islands — and it would be absurd — the rocks and the coral reef of San Salvador.

However, it is to be stressed that Columbus doesn't say he saw the islands at the moment he raised the sails. He writes: "yo miré todo aquel puerto y después me bolví a la nao y dí la vela y vide tantas islas. . ." In the same sentence Columbus lists four successive actions — four events, which, obviously, were subsequent in time. Some hours have certainly passed between the event "me bolví a la nao" and the "dí la vela" one. More hours might also have passed between the "dí la vela" and "vide tantas islas". In those hours a good part of the sea might have been crossed. Coming from San Salvador towards the South-West, one must cover between 20 to 25 miles to arrive to a point where Rum Cay and Conception might be seen with all their surrounding cayos. We have crossed this part of sea many times and therefore we make this hypothesis out of direct experience. This explanation is supported by the *Historia* of Las Casas (cap. XLI).

Another explanation is Morison's. To whomever comes from San Salvador, Rum Cay seems to have six points on the sea, which at first sight seem to be six different islands. Only as one gets near does one realize that the six promontories belong to but one island, which is Rum Cay. Morison's explanation is neither wandering or arbitrary. We have repeated as well — myself and Dr. Masetti — the experiment and the first impression of being in front of six islands was verified in a very clear way. It is as Morison says.

In the end it must be remembered that the Indians said to the Admiral that the islands were "many many so it was impossible to count them and they nominated more than one hundred".

The question is explained with a geography text underhand: the Bahamas comprise 30 major islands, 660 small islands, and 2400 rocks; Turks are 6 islands and various rocks; Caicos 6 as well, 16 small islands and numerous rocks. The Indians, who usually exaggerated, didn't exaggerate at all in this occasion.

There could be many more disquisitions on the route subsequent to the Landfall, but the doubts, arguments, and discrepancies related to this route concern the distances and they are of no great importance.

Our method — it should be clear by now — is not to rely on Columbus's measurement of the distances, but, for the Landfall indications, to focus on the comparison of the characteristics of each island. From this point of view Eleuthera appears remote from any correspondence to the characteristics mentioned in the *Board Journal*. Therefore, we cannot accept the conclusions of Molander's study (not lacking in sharp and interesting remarks) in reference to an eventual northern route in the Bahamas' archipelago.

In regard to the Mayaguana hypothesis, I have no knowledge that it has ever been verified on site by Varnhagen or even by Didiez Burgos.

Worthy of particular attention are instead the elaborate theory of the Links and any hypotheses of Cat Island and Samana: to these we will turn in separate lectures.

In conclusion, we repeat what we emphasized earlier: these problems cannot be solved within mathematics. There is no certainty, only a high



percentage of probability. In this context, we lean to the Landfall in Watling, which, very opportunely, the Bahamian government renamed San Salvador.

### GENERAL BIBLIOGRAPHY

- F. Colombo, *Historie di Cristoforo Colombo*, capp. XXI, XXII, XXIII.
- B. de Las Casas, *Historia General de Las Indias*, lib. I, cap. XXXIX.
- B. de Las Casas, *Apologética Historia*, cap. I.
- G. Fernandez de Oviedo, *Historia general y natural de Las Indias*, lib. II, capp. V, VI.
- P. Martire D'Anghiera, *De Orbe Novo*, decade I, lib. 1.
- AA. VV., "La prima isola scoperta da Colombo nel 1492," *Riv. Geogr. Ital.* (Firenze, 1952), 138.
- J. M. Asensio, *Cristóbal Colón, su vida, sus viajes, sus descubrimientos*, Vol. I, lib. II (Barcelona: Espasa y Compania, 1893), pp. 301-307.
- A. Balesteros Beretta, *Cristóbal Colón y el describrimiento de América*, t. II, vol. I (Barcelona-Buenos Aires: Salvat, 1945), pp. 68-70.
- A. B. Becher, *The Landfall of Columbus on his First Voyage to America* (London: J. D. Potter, 1856), p. 11.
- R. Caddeo, *Nota 1 a F. Colombo, Historie de Cristoforo Colombo*, vol. II (Milano: Alpes, 1930), pp. 163-164.
- E. A. D'Albertis, "Sulla traccia del primo viaggio di Cristoforo Colombo verso l'America," *Boll. Soc. Geogr. Ital.* (Roma, 1893), 741-751.
- R. J. Didiez, *Guanahani y Mayaguain* (Santo Domingo: Editora Cultural Dominicana, 1974), pp. 148-167, 400-413.
- O. Dunn, "The Diario, or Journal of Columbus's First Voyage: A New Transcription of the Las Casas Manuscript for the Period October 10 through December 6, 1492," *Terrae Incognitae*, vol. 15 (Detroit, 1983), 173-231.
- M. Fernandez de Navarrete, *Colección de los viajes y descubrimientos que hicieron por mar los españoles desde fines del siglo XV*, vol. I (Madrid: Atlas, 1954), p. 95.
- C. Fernandez Duro, "La isla Guanahani," *Ilustracion española y americana* (Madrid, 1891), 221.
- G. V. Fox, "An Attempt to Solve the Problem of the First Landing Place of Columbus in the New World," *Report of the Superintendent of the U. S. Coast and Geodetic Survey*, Appendix 18 (Washington, 1880), 346-417.

- R. H. Fuson, "Caicos: Site of Columbus's Landfall," *The Professional Geographer*, n. 2 (Washington, 1961), 65-97.
- R. H. Fuson, "Caicos, Confusion, Conclusion," *The Professional Geographer*, n. 5 (Washington, 1961), 35-37.
- R. H. Fuson and W. H. Treftz, "A Theoretical Reconstruction of the First Atlantic Crossing of Christopher Columbus," *Proceedings of the Association of American Geographers*, n. 8 (New York, 1976), 155-159.
- R. H. Fuson, "The Diario de Colon: A Legacy of Poor Transcription, Translation and Interpretation," *Terrae Incognitae*, vol. 15 (Detroit, 1983), 51-75.
- G. Gibbs, "Observations to Show That the Grand Turk Island, and Not San Salvador, was the First Spot on which Columbus Landed in the New World." *Proceedings of the New York Historical Society* (New York, 1846), 137-148.
- R. D. Gould, "The Landfall of Columbus: an Old Problem Restated," *The Geographical Journal*, I (London, 1927), 403-429.
- R. D. Gould and G. H. T. Kimble, "The Four Voyages of Columbus," *The Geographical Journal*, I (London, 1943), 260-265.
- K. Hellweg Larsen, *Columbus Never Came* (London: 1963).
- A. von Humboldt, *Examen critique de l'histoire de la géographie du Nouveau Continent*, vol. III. (Paris, la ed., 1836-37).
- W. Irving, *A History of the Life and Voyages of Christopher Columbus* (Paris: A. and W. Galicani, 1828), vol. I, p. 247; vol. IV, pp. 245-278.
- J. Judge, "Where Columbus Found the New World," *National Geographic*, vol. 170, n. 5 (November, 1986), 566-599.
- J. Judge, E. Lyon, and L. Marden, *A Columbus Casebook*, a supplement to "Where Columbus found the New World," *National Geographic* (November, 1986).
- J. E. Kelley, Jr., "In the Wake of Columbus on a Portolan Chart," *Terrae Incognitae*, vol. 15 (Detroit, 1983), 77-111.
- S. Kettel, *Personal Narrative of the First Voyage of Columbus to America* (Boston: Thomas B. Wait & Son, 1827), p. 34.
- J. Knox, *A New Collection of Voyages*, vol. II (London: J. Knox, 1767), p. 77.
- E. A. Link and M. C. Link, "A New Theory on Columbus's Voyage Through the Bahamas," *Smithsonian Miscellaneous Collection*, vol. 135, n. 4 (Washington, 1958), 6-45.

- R. H. Mayor, *Select Letters of Christopher Columbus, with other Original Documents, Relating to his Four Voyages to the New World* (London: Hakluyt Soc., 1870, 1 ed. 1847).
- J. W. McElroy, "The Ocean Navigation of Columbus on his First Voyage," *American Neptune* (Salem, 1941), 208-240.
- A. M. Manrique, *Guanabani. Investigaciones historico-geograficas sobre el Derrotero de Cristóbal Colón por las Bahamas y Costa de Cuba, que comprenden la situación exacta de la Primera Tierra descubierta del Nuevo Mundo* (Arrecife: Imprenta de Lanzarote, 1890), pp. 97-110 e passim.
- L. Marden, "The First Landfall of Columbus," *National Geographic*, vol. 170, n. 5 (November, 1986), 572-577.
- C. R. Markham, "Sul punto di approdo di Chistoforo Colombo," *Boll. Soc. Geogr. Ital.* (Roma, 1889), 101-124.
- A. B. Molander, "A New Approach to the Columbus Landfall," *Terrae Incognitae*, vol. XV (Detroit, 1983), 113-149.
- B. de Montlezun, "Revue nautique du premier voyage de Christophe Colomb," *Nouvelles annales des voyages et sciences géographiques*, vol. X (Paris, 1828-29), 299-350.
- S. E. Morison, "Text and translations of the 'Journal of Columbus', First Voyage," *Hispanic American Historical Review* (Durham, 1939), 235-261.
- S. E. Morison, *Admiral of the Ocean Sea. A Life of Christopher Columbus* (Boston: Little Brown, 1951, ed. 1983).
- S. E. Morison, *Journal and Other Documents of the Life and Voyages of C. Columbus* (New York: Heritage, 1963).
- S. E. Morison and M. Obregon, *The Caribbean as Columbus Saw It* (Boston: Little Brown, 1964), p. 25.
- S. E. Morison, *The European Discovery of America*. 2nd. vol.; *The Southern Voyages: A. D. 1492-1616* (New York: Oxford Univ. Press, 1974), pp. 61-65.
- J. B. Muñoz, *Historia del Nuevo Mundo* (Madrid, 1793).
- J. B. Murdock, "The Cruise of Columbus in the Bahamas, 1492." *The Proceedings of the U. S. Naval Institute* (Annapolis: 1884), 449-486.
- L. S. Olschki, "What Columbus Saw on Landing in the West Indies," *Proceedings of the American Philosophical Society* (Philadelphia, 1941), 633-659.
- J. Parker. "The Columbus Landfall Problem: A Historical Perspective," *Terrae Incognitae*, vol. 15 (Detroit, 1983), 1-28.

- R. H. Power, "The Discovery of Columbus's Island Passage to Cuba, October 12-27, 1492," *Terrae Incognitae*, vol. 15 (Detroit, 1983), 151-172.
- P. Revelli, *Cristoforo Colombo e la scuola cartografica genovese*, vol. II (Genova, 1937), pp. 178, 189-190.
- J. B. de la Roquette, *Relations des quatre voyages entrepris par Christophe Colomb*, vol. II (Paris: Treuttel & Wurts), pp. 37-88, 339-345.
- S. Ruge, *Columbus* (Dresden: Ehlermann, 1892).
- A. Suarez Chiglioni, "Primera isla de las Américas que descubrió Colon," *El Archivo Ibero-Americano* (Madrid, 1892).
- P. E. Taviani, *I viaggi di Colombo, la grande scoperta* (Novara: Istituto Geografico De Agostini, 1984), vol. I, pp. 30-38; vol. II, pp. 54-61.
- J. B. Thacher, *Christopher Columbus, His Life, His Works, His Remains*, vol. II (New York: Putnam's son, 1903), pp. 23-26;
- F. A. de Varnhagen, "La verdadera Guanahani de Colón," *Anales de la Universidad de Chile*, vol. 24 (Santiago, 1864), pp. 1-20.
- P. Verhoog, "Columbus landde op Caicos 12 Oct. 1492," *Tijdschr. V. H. Kon. nederlandsch. Aardijksk Genoots* (Amsterdam, 1952), pp. 96-109.
- P. Verhoog, "Columbus Landed on Caicos," *Proceedings of the U. S. Naval Institute*, vol. 80 (Annapolis, 1954), pp. 1101-1111.
- P. Verhoog, "Columbus Landed on Caicos," *Terrae Incognitae*, vol. 15 (Detroit, 1983), pp. 29-50.
- R. Durlacher Wolper, "A New Theory Identifying the Locale of Columbus' Light, Landfall and Landing," *Smithsonian Miscellaneous Collections*, vol. 148, n. 1 (Washington, 1964), pp. 1-39.

#### SPECIFIC BIBLIOGRAPHY

On the question of Graham's Harbor see:

- A. Braibanti, *Il giornale de bordo di Cristoforo Colombo*, p. 73.
- R. Caddeo, *Il Giornale de bordo (1492-1493)*, p. 49.
- O. Dunn, *Columbus's First Landing Place: The Evidence of the Journal*, cit., pp. 40-42.
- G. Ferro, *Note a C. Colombo, Diario di Bordo, Libro della prima navigazione e scoperta delle Indie*, trad it., Mursia, (Milano, 1985), pp. 48-50.

- R. H. Fuson, *The Diario de Colón: A Legacy of Poor Transcription, Translation and Interpretation.*, cit., p. 63.
- R. H. Power, *The Discovery of Columbus's Island Passage to Cuba, October 12-27, 1492*, cit., pp. 156-160.
- Yachtsman's Guide to the Bahamas*, The Ministry of Tourism, (Nassau, Bahamas, 1974), pp. 9, 262-263.
- R. G. Durlacher, *A New Theory Identifying the local of Columbus's Light, Landfall and Landing*, cit., pp. 27-29.
- For the ambiguous Board Diary passages on the date of October 15th see:
- F. Colombo, *Historie di Cristoforo Colombo*, cap. XXXIV.
- B. de Las Casas, *Historia general de las Indias*, lib. 1, capp. XLI and XLII.
- R. H. Fuson, *The Diario de Colón: A Legacy of Poor Transcription, Translation and Interpretation*, cit., pp. 64-65.
- R. H. Fuson, "Grand Turk was Guanahani," *Turks & Caicos Current*, (July-August, 1982), 21-30.
- L. A. Leicester, "Columbus First Landfall," *Sea Frontiers*, XXVI (1980), 27-78.
- S. E. Morison, *Admiral of the Ocean Sea*, cit., pp. 239-240.
- R. H. Power, *The Discovery of Columbus's Island Passage to Cuba, October 12-27. 1492*, cit., 161-163.
- P. E. Taviani, *I viaggi di Colombo, la grande scoperta*, cit., vol. II, pp. 56-58.



## PART II

### LINK'S THEORY ON THE LANDFALL

We have already said that only three hypotheses among the ones which contrast with what we have argued about the identity of San Salvador, deserve special mention, not only because of the seriousness of their elaboration, but also for their notes on the places from which something real is tried to be found.

Let us examine the hypothesis of Grand Turk-Caicos. It must immediately be said that while the Links — like Verhoog — incline to the Landfall in Caicos, Power and Fuson prefer Grand Turk.

We have already said in the previous notes that Grand Turk is a small island, the characteristics of which do not correspond to what Columbus writes on the 11th, 12th, 13th and 14th October.

Following Edwin and Marion Link, only the light seen by Columbus the night previous to the Landfall should be situated in the extreme northern point of Grand Turk; the island of the Landfall should therefore be identified in Caicos, and more precisely in the present East Caicos.

The Links have done careful research in all of the archipelago of Turks and Caicos and Bahamas. On the basis of measurements reported by Columbus and the actual ones, they arrive at the conclusion that the itinerary of the Admiral in the Bahamas is the one we have already mentioned and which we repeat here: Grand Turk (light seen), East Caicos (island of the *Landfall*), *Mayaguana* (only seen), *Samaná* (baptized Santa Maria de la Concepción) and then Long Island and Crooked Island and for the rest of the route the reconstruction made by Morison and validated by our on-site researches.

Following the Link's idea, the light seen by Columbus and by Pedro Gutierrez — “the light of a candle which rose and went dimmer” — would have been in a Taino camp situated at the extreme north point of Grand Turk, where today is the lighthouse. After catching sight of it, the small fleet seems to have proceeded in a straight line towards the west and at 2 o'clock of October 12 Juan Rodriguez Bermejo, alias Rodrigo de Triana, seems to have seen the first American land in the whitish cliffs of East Caicos and more precisely in one called Grassy Creek, in the actual Columbus Cay, two miles down Cape Comete (today Drum Point) where there is still a beach with very white sand.

Here Columbus dropped anchor, disembarked and stayed for three days, exploring the island and making the first contact with the inhabitants. He seems to have then proceeded North-North-East and — still following the Links — he doubled Cape Comete. Changing the route to West-North-West, he went towards the north coast of East Caicos, where, protected by the continuous coral reef line, he found the famous port described in his *Journal*, so large “that it could receive all the vessels of Christendom and the entrance of which is very narrow”.

It is the port which we have identified instead, in accordance with Morison and Wolper, as Graham's Harbor at San Salvador Island.

From this port Columbus saw "many islands", among which he did not seem to be able to choose the one to go to.

The Links's attention focuses for a long time on the study of the numbers adopted by various authors concerning the measurements attributed to Columbus, by Las Casas and Don Fernando, about the dimension and locations of the various islands seen or visited before arriving at Cuba.

Following Links's notion, the second island (Santa Maria de la Concepción) is not Rum Cay, because it is too small compared with the one described in the *Journal* and because it is situated further than the 5 leagues indicated by Columbus in respect to San Salvador. The second island should be identified as Mayaguana, which, however, could have only been seen by the Genoese, who did not disembark there. The real Santa Maria de la Concepción should be instead Samaná, where, following the notes of the *Journal*, the ships anchored on the western coast for one night.

Columbus should have passed Long Island (Fernandina) and from here the route, following the Links, starts to correspond to Murdock's and Morison's (and my) hypothesis. Only one difference: the North American husband and wife team identifies as the "maravelloso puerto" not the one situated a few miles north of Burnt Ground but the one in Clarendon town port, which is much farther south although on the eastern coast of Long Island.

In spite of the respect due to the seriousness of the inquiry made by the Links, we are still of the opinion that the real San Salvador is Guanahani, and for the following reasons:

(1) It is not understandable why the Genoese, instead of making the landfall in Grand Turk, where he seems to have seen the light, has continued. Towards what? Columbus knew that after Grand Turk there was the Caicos group. Why would he have dared to proceed towards the unknown when he had found a sure indication of land and life?

(2) The reconstruction of the Links does not explain why Columbus, supposing he really made landfall in Caicos — therefore the first land of the New World — did not circumnavigate it and didn't arrive at the Providenciales and didn't go back to recognize the Turks where, in the extreme north of Grand Turk, the famous light has been seen.

The Admiral would have described in a detailed way this island or such a group of islands, but instead, plainly for four days, he describes the natural characteristics and the population of only one island, Guanahani.

The characteristics of Guanahani described by the *Journal* correspond to those of San Salvador-Watling, Caicos — which at Columbus's time was an island — doesn't correspond at all to the description made by the Genoese.

It is true that lagoons are found in Caicos as well: one in East Caicos, one in North Caicos, one in Grand Caicos. These lagoons are of modest

proportions. It might also be that these lagoons once were of larger proportions, that they became basins of sea water that today have opened a route towards the sea and now are gulfs. In such a case, the lagoon of East Caicos could be "muy grande" in respect to East Caicos. But at Columbus's time it didn't exist. Only one Caicos island existed, which later broke into South Caicos, East Caicos, Grand Caicos and North Caicos. In respect to Caicos, not even a larger lagoon than the one existing presently in East Caicos would be in "en medio" or "muy grande". Caicos has sea-water lagoons, low and full of coral, so that the island is absolutely without the abundance of water which Columbus mentions.

The nature of Caicos today — dry and desolated — doesn't allow in any way the supposition that, at the time of the discovery, it was blooming and luxuriant like the first island he described. San Salvador instead has, now as well, good vegetation, with forest remains which allow us to suppose that at that time before the ruin was effected to obtain space for the cotton plantations — the island was, like the other Bahamas, covered with an even richer and luxuriant flora. The climate then is much more pleasant than that of Caicos.

It is true that traces of inhabitants were found in Caicos, but it seems that their numbers were few or limited. While Columbus speaks, from his arrival, of many people and many different populations met during the circumnavigation of the island, it is Wolper's carefully researched conclusion that towards the end of the fifteenth century the inhabitants of San Salvador were at least four times the supposed number.

(3) Let us now face the interesting point, that of the place of the Landfall indicated by the Links as being two miles under Cape Comete, on the east coast of East Caicos. It is absolutely unthinkable that Columbus, expert and careful seaman that he was, could have even tried to anchor and effect a landfall on the east coast of East Caicos. This coast — as we were able to observe during our explorations — is totally exposed to the trade-winds coming from the East-North-East, which are always blowing and which, when they are strong, make it impossible even for a boat to go near or land.

On this side of the island the beaches are rare. The navigation — on this side of the coral reef — is very dangerous because of the banks of coral of every form and dimension which occur everywhere. Even a small boat with a small draught risks serious difficulties. Often, the one on which we made our inspection had to raise the propeller and proceed very slowly, rowing after being anchored, even when the keel was flat.

Only in the northern part of East Caicos, within Drum Point and Jacksonville, does the sea become calmer and the coral reef, which proceeds without continuity, creates a vast and rather tranquil area, but wide and characterized by shallow waters. This however, absolutely cannot be the bay in which Columbus wanted all the vessels of Christianity to anchor and where, as he says, there are shallow waters but also parts of the sea which are deep.

Such a site can't be found anywhere in the Caicos today, while — as we said — we have clearly identified it in San Salvador.

(4) A grave contradiction is also noted, due to the exploration Columbus made on October 14th, between the itinerary indicated by the Links and the route which results from the *Journal*. The Links state that Columbus, after having doubled Drum Point, arrived, sailing towards the west, in the large tranquil bay in the north-western part of East Caicos. This interpretation is the result of a wrong translation of Columbus' text we have talked about in criticising the argumentations of Fuson.

(5) The question brought out by the Links — the "large number of islands" mentioned by the Admiral in the *Journal* of the 14th of October — has already been debated. We have admitted that from San Salvador neither Rum Cay nor the other islands which were explored afterward by the Genoese can be seen, but this negative information is also valid for Caicos, which, and it must be again underlined, was then one whole island. Neither from South Caicos nor from East Caicos is it possible to see the Turks Group (about 20 miles away). It is true that, leaving the coast, Columbus might have seen Providenciales and many other cayos in the Caicos Bank. But it is also true that in such a case the distance indicated by Columbus (5 leagues, perhaps 20 miles) would certainly be inadequate.

Different would be the question of the landfall — and the Links don't say this, while Fuson and Power do — if it had been in Grand Turk. We must honestly admit that the terminal parts of the Diary of the 14th October adapt perfectly to the hypothesis of the Landfall in Grand Turk. But it concerns only this argument. It seems to us not too scientific to stick to a hypothesis just because it has one element in its favor, forgetting all the others which are definitely contrary.

(6) Concerning the distance between the various islands and their extension the Links insist on the discrepancies between the measurements of Columbus and the real ones.

It must first of all be noted that today the islands of the Bahamas seem much smaller than they seemed to the eyes of the Genoese and to his crew. A land, an island, or even a small island or a rock, if it is covered by thick vegetation, seems — in the absence of instrumental relevations — larger, and even an expert observer might make mistakes about relative size.

But an even better explanation must be found in the inexactitudes, inaccuracies and contradictions noticeable in the numbers, the measurements and the type of miles and leagues Columbus adopted in the same *Journal* as well as in the texts of Las Casas and Don Fernando. We have already said so and we have also advanced the suggestion that the *Journal* has been altered on purpose in the numbers even in this part, because of the secret nature of news about the newly discovered lands.

(7) Let us come back again to our first question. The reconstruction of the route of the Atlantic crossing of Columbus allows us to suppose that the Santa Maria and the other two caravels might have previously been sailing

towards the West — not without a variation to NW — and declined to SW for 4 grades, arriving at the Bahamas on a latitude of about 24°. It doesn't seem possible to us to demonstrate how they could have declined SW of 6° and more, arriving under the latitude of 22° at Grand Turk and Caicos.

#### **BIBLIOGRAPHY**

- A. A. Link and M. C. Link. "A New Theory on Columbus's Voyage Through the Bahamas." *Smithsonian Miscellaneous Collection*, n. 4 (Washington, 1958), 6-45.



### PART III

#### THE CAT ISLAND HYPOTHESIS

The route of the Atlantic crossing which places the landfall in Grand Turk and Caicos is not valid — as we have already noted — for the people that place it on Cat Island.

Among these people there are some famous names, such as Washington Irving and Humboldt. We, however, in dealing about it in these notes, prefer to recall the studies made by Aurelio Tió, not only because they are more recent, but also because they have depended on local inspections of the lands and seas they treat.

Aurelio Tió bases his theory on the analysis of the *Board Journal* of Columbus compared with the *Diario de Navegación* of Ponce de León as transcribed by Herrera. This *Diary* concerns the voyage of the discovery in Florida made by Ponce de León in 1513. During this trip Ponce de León touched some islands in the Bahamas in March of that year and in August during his journey back.

Tió does a careful study of the map which Herrera obtained from the *Diary* of Ponce de León and shows how it is rather insufficient; from it — and this is Tió's idea — came the error of R. H. Mayor who, as we know, was one of the first and more important supporters of a landfall in Watling. The *Diary* of Ponce de León is — for Tió — a more authentic source than the *Carta* which Herrera obtained. Better evidence of Ponce de León's voyage would be found — as suggested by Justing Winsor — in the map of Count Ottomano Freducci, copied from the map of Ponce de León, which contained details of the map of Christopher Columbus.

This interesting and complex study induces Tió to state that Ponce de León identified Guahananí of the landfall as Cat Island. From this comes Tió's hypothesis: Columbus saw the light at ten o'clock on the evening of 11th October on the northern coast of San Salvador-Watling while Bermejo, Rodrigo de Triana, would have seen the Columbus Point at the south-east extremity of Cat Island at 2 o'clock. The landfall would have been in Port Howe, a bay on the southern coast.

We think that the thesis that Ponce de León identified Guahananí as Cat Island is acceptable. This explains also how Makenzie might have suggested to Washington Irving the hypothesis of the landfall in Cat Island and how it seemed right to the important historian Humboldt to believe it.

This, however, doesn't cancel the fact that we today may correct Ponce de León's interpretation, because we can today verify the details which were in the *Journal*, in the *Historia*, in the *Apologética Historia* of Las Casas, in the *Historia* of Don Fernando, and in Herrera's text.

We find ourselves, with the hypothesis revived by Tió, confronted with not a complete change of the Morison-Wolper-Taviani thesis but a variation of the same.

We have already said that San Salvador-Watling and Cat Island are on a terminal latitude of the ocean crossing of the three ships of Columbus's first voyage. We now add that the hypothesis of Tió, Irving, and Humboldt does not change anything in our view of the following route: Tió takes for granted the fact that the stops of the following route are Rum Cay (Santa Maria de la Concepción), Long Island (Fernandina), Crooked Island (Isabela), Ragged Islands (Islas de Arena) and Cuba.

It is therefore a change that exclusively concerns the landfall. We find ourselves in a different position in regard to the Grand Turk-Caicos' hypothesis: this one has proved to be unacceptable for the reasons explained in previous notes. We can't, however, deny Tió's hypothesis — which once was Irving's and Humboldt's — for it has charming arguments.

It is in fact also supported by another argument which we can't forget: the length of Cat Island from South to North is a little less than 15 leagues, by Columbus's measurements. There, a mistake between miles and leagues should not be considered a mistake by Columbus and repeated by Las Casas and Don Fernando as we, and with all Watling-San Salvador supporters were obliged to hypothesize.

However, together with other attractive aspects of Cat Island there are other points which induce us to incline to a landfall in San Salvador-Watling.

The most doubtful point of the Cat Island hypothesis seems to be raised by what Columbus writes in the *Journal* for the 12, 13 and 14th October. From such evidence it is clear that Columbus had a very precise idea of the whole island at which he made landfall: he talks about "a great reef of rocks which encircled the whole of that island"; he says that in the middle of it there is "a very big lagoon"; he explores the northern coast to see the east side (and on this last question we have dwelt for a long time, in polemic with Fuson and Dunn).

In order to accept the fact that the landfall island is Cat Island it should be understood that the visit and the explorations of Columbus were limited to a small part of the whole island, at its southern part, which is the largest from east to west, but which is 45 miles from the northern point of the island. It is really unthinkable that — on the morning of October 14th — Columbus rowed more than 40 miles by boat.

In fact, the interpretations Tió gives regarding the movements of Columbus are not persuasive.

Hawksnest Creek doesn't correspond to what Columbus says on October 14th about the peninsula which "with a couple days' work can become an island". We (the writer of these notes and Dr. Masetti) have visited Hawksnest Creek and we had a different impression from the one we had after visiting Graham's Harbor.

In Graham's Harbor everything corresponds to Columbus's considerations. In Hawksnest Creek there isn't the part of the peninsula which could, according to Columbus, be cut in a couple of days' work and there also isn't the large port "which may receive all the vessels of Christianity". Tió says

that the Old Bight is “una grande ensenada muy bien resguardada de los vientos prevalecientes del nordeste, tan perfectamente que allò el mar “no se mueva màs que dentro un pozo”, as Columbus wrote in his “*Diario de Navegación*”. There is nothing to object to in this. However, Columbus says that the large port is between the peninsula, which can be island, and the coral reef which surrounds Guanahaní, while the “grande ensenada” of the Old Bight is only a large bay which has in front, on the western side, the open sea.

Moreover, where is the large lagoon mentioned by Columbus? Tió replies that the Great Lake of the southern part of Cat Island was probably connected — 500 years ago — with some small lakes around it and was therefore larger than the present one. But, however large it might have been, it was never in the middle of the island — as is the lagoon of San Salvador-Watling — but in the middle of the southern part of an island which extends farther toward north for another 40 miles.

Tió insists on two characteristics which do not favor the lagoon of San Salvador-Watling. One is that this lagoon is salt water and not fresh water. But we have already pointed out how the qualification “de buena agua dulce” is only found in the *Historia* of Las Casas: it is not found in the *Journal* or in the *Historia* of Don Fernando. It is an arbitrary insertion of Las Casas.

The other characteristic on which Tió insists is that the lagoon of San Salvador-Watling is not a lagoon, but a complex of eight or nine lagoons. There are really in San Salvador-Watling eight minor lagoons, but the Great Lake is by far the largest and covers on the whole the extension of the part which is “en medio” of the island. Indeed, the large lagoon “en medio” exists on San Salvador-Watling and not on Cat Island.

There is also another fundamental condition which can't be forgotten: the coral reef, the “grande restinga de piedras, che cerca toda la isla al rededor”.

For all these reasons, although we appreciate the investigations of Tió, we can't accept his hypothesis which remains only a possibility for those who would want to reject at all costs the hypothesis of Watling-San Salvador, which is more than 90% probable.

#### BIBLIOGRAPHY

- A. Tió, *Dr. Diego Alvarez Chanca (Estudio Biográfico)*, Publicaciones de la Asociación Medica de Puerto Rico, Instituto de Cultura Puertorriqueña, Universidad interamericana de Puerto Rico, 1966, pp. 307, 310, 313, 316-18, 321-26.
- J. Winsor, *Christopher Columbus and How he Received and Imported the Spirit of Discovery*, Houghton, Mifflin & Company (New York 1891), p. 560.

On the theme, developed by Tió, of the identifications (or confusions) of the islands corresponding to the names of Guanahani, Guanina and Triango, from the discoveries (or rediscoveries) of Ponce de León till the whole seventeenth century, see also:

R. Durlacher Wolper, *New Theory Identifying the Locale of Columbus's Light, Landfall, and Landing*, cit., p. 3.

## PART IV THE SAMANÁ HYPOTHESIS

The hypothesis of a landfall in Samaná, put forward for the first time by Captain Gustavus Fox, was taken up again by Harrisse, who nevertheless never had the opportunity to make on-site visits in the archipelago of the Bahamas.

The author of this paper, with his assistant Dr. Masetti, visited the island of Samaná in 1974, and again in 1986 accompanied by Dr. Donald T. Gerace, director of the CCFL Bahamian Field Station. None of us noticed in this island the characteristics of San Salvador described by Christopher Columbus, Don Fernando, and Las Casas.

In 1986 the *National Geographic* launched with much fanfare an article in its November issue with the ambitious title *Our Search for the True Columbus Landfall* signed by its senior associate editor Joseph Judge.

An essay by Joseph Judge himself criticizes the arguments favoring Watling-San Salvador. He believes he found in Samaná the characteristics described in the *Board Diary* of Christopher Columbus. In another essay, concerning the routes of the Atlantic crossing of Columbus, Luis Marden intends to prove by using computer calculations of the *Board Diary* data that the Genoese Navigator on the night of the thirty-third day should have been at 23°09' N latitude and 73°29'13" longitude W, rather than at 23°56' N latitude and 74°20' longitude, which we endorse.

The work done by Marden is of great diligence and the scholarly construction which he elaborated commands respect; the trouble lies in the foundations.

During the San Salvador conference, the geographer Gaetano Ferro demonstrated that it is not possible to consider as reliable data the numbers offered by the Genoese in his *Board Diary* during the thirty-three days of the crossing. They are, due to the instruments of the time, approximations, often off-the-cuff calculations. Columbus himself often uses the conditional tense when reporting them: "saremmo andati . . ." "avremmo percorso . . .". It is also certain that in some cases the numbers have been altered either by the Admiral or by the copyists of the court of Spain to deceive likely competitors, above all, the Portuguese. Hence, the impossibility of knowing with mathematical precision the route of the Atlantic crossing.

Morison never expected to indicate the route which Columbus certainly followed. As he repeatedly told his assistant Obregon, who so confirmed it in the San Salvador conference and to the author of this paper personally, he wanted to present a probable route hypothesis. Marden's hypothesis is not very different and many other similar ones could be formulated.

Marden also claims that the league of Columbus cannot correspond to the 3.18 nautical mile of today, because, were it to be so, the sum of the numbers indicated in the Board Diary would produce an itinerary ending "west of present-day Miami". This realization is not at all a novelty. Earlier,

Morison, Ferro and myself, and other Columbian scholars had pointed out that the sum of the leagues actually covered by Columbus is closer to the sum of the leagues falsely passed on to the crew than to the sum of the leagues reported as truthful in the diary. McElroy calculated the sum of the false numbers to be less than 9% of the sum of the leagues actually covered. Marden is of the opinion that the sum should be less than 10.5%, and to explain this discrepancy he holds the league of Christopher Columbus to have been of 2.82 modern-day nautical miles rather than 3.18 nautical miles. As a matter of fact, the 2.82 value corresponds to the 16th-century Spanish league, as evidenced by two English navigational manuals published in 1574 and 1594.

Columbus nonetheless was still a 15th century navigator. And the majority of the Columbus scholars agree with Morison, Gaetano Ferro and Charlier: Columbus took his measurements in Italian miles and figured out the league by multiplying the mile by 4. As I have shown elsewhere, this procedure is proven to be above debate, given the many examples of it in the *Board Diary*.

We are then faced with superfluous disquisitions, because — as we stated it repeatedly earlier — the data under discussion are in any case approximations and are derived independently from the adopted method.

Luis Marden wanted to take into account also the incidence of the wind and sea currents for the different points touched by the Atlantic route of Columbus. It is then possible to hold that, by rough calculation, the winds and currents have not substantially changed from 1492 to today. In the case of large approximations we are dealing with high numbers. However, when small numbers are involved, the exact incidence could have been altered from his time to today; in fact, it does change from season to season, day to day, and occasionally from hour to hour.

Pretending to define the arrival point of the Atlantic route of Columbus by means of computer-managed data as contained in the *Board Diary* and to define such landing point by taking into consideration with mathematical precision the winds and currents in the various points of high sea amounts to a welter of incredible ingenuousness.

The study by Luis Marden deserves respect for the diligence and extreme care with which it was conducted. As we already stated, the scientific conception is well thought out; however, its foundation is fragile — in fact it is built on quicksand and the hypotheses that condition it are equally fragile and exposed to the volatile nature of the situation.

No rigorous and precise conclusion can be ever arrived at on the question of the route: only possible and more or less probable hypotheses can be reached. Not even the main figure of the great discovery crossing could succeed in giving us the exact high sea route followed were he alive today.

The other essay by Judge deals with the characteristics surrounding the Landfall and of the interpretation of the *Board Diary* dates of October 11 and the days following.



In regard to the latter Judge repeats the arguments already presented by Fuson and others who have criticized the Watling-San Salvador hypothesis: the “many islands”, and the distance from Rum Cay and its dimensions. He adds a new argument of some importance concerning the amount of time needed to traverse the stretch of coastline between Long Bay and Graham’s Harbor by rowboat.

We have elsewhere answered this new argument as well as the older ones. We will thus limit our remarks to listing the reasons for which Samaná should be excluded from the possible candidates for the coveted Landfall title.

We have no reservation in recognizing that some of the characteristics of Samaná correspond to the *Board Diary* indications.

Samaná is “muy llana”. It is “sin ninguna montaña”. It has “mucha agua”; “muchas aguas”. It has “arboles muy verde”. There is also the “grande restinga de piedras, que cerca toda la isla abrededor”.

Samaná — today a deserted island — was then populated. It has always been known that the archipelago of the Bahamas in the 15th century had an ethnographic density four or five times the population of today. However that may be, recent archeological excavations by Dr. Charles Hoffman and by Judge himself leave no doubt about the presence of human settlements in Samaná.

On the other hand, other features remain that do not in any way fit Samaná. Having visited and revisited it we realize that:

(1) Samaná is a very small island of 14 kilometers<sup>2</sup>. Columbus could not have called it (as he did) “isla bien grande”.

(2) In the island of Samaná there is not “una laguna in medio muy grande”; there are only some very modest ponds.

(3) The harbor believed by Judge to be identifiable with a bay on the southern coast could contain one or two dozen XVth-century ships at the most — quite a divergence from the Admiral’s precise indication that “It can accommodate all the ships of Christendom”.

Besides these considerations, there are two arguments that exclude Samaná from the number of possible Landfall candidates: the early geographic maps of America and the very name of Samaná.

In the first known map of America, by Juan de la Cosa, dated 1500, “Guanahani” and “Samana”<sup>1</sup> appear as two quite distinct islands. The latter is south-east of the former just as we see San Salvador and Samaná today. (See Figure 1.)

In regard to the map of Juan de la Cosa, it must be specified that the year-long debate on whether there were one or two Juan de la Cosas has no bearing on the topic under our consideration. Even those who consider Juan de la Cosa, the author of the famous map, to be a different person from the Juan de la Cosa who took part in the first Columbus voyage, are of the opinion that he, too, had been in America during the successive discovery voyages and that thus he had direct knowledge of the Caribbean Sea.

In the map of the Portuguese Pedro Reinal (1519), preserved in Lisbon, "Guanaha" (sic) and "Amana" (sic) are depicted quite distinctly.

In the map of the Portuguese Diogo Ribeiro of 1529, "Guanahan" (sic) appears in the form of a swollen cross surrounded by cays. Samaná does not appear.

In the manuscript of the Catalan Alonso de Chaves, *Quatri Partitu en cosmografia practica, y por otro nombre espejo de navegantes* (1526), "Samana" and "Guanahani" are listed respectively under numbers 15 and 16 in Chapter VII, which deals with the Lucayan islands. The indications regarding the relationship and size of the two islands are extravagant: 25<sup>o</sup>; 8 leagues from northwest to southeast and 4 leagues from northeast to southwest for either one of them and thus "Guanahani se parece con Samana" making them one and the same. However, it is worth pointing out that the two islands are drawn as two distinct islands and that only of "Guanahani" (and not of "Samana") it is said: "Esta es la isla que primero fue hellanda cuando se descubrieron estas Indias".

In the map of Sebastian Cabot of 1544, the island "Samana" is reproduced as an island distinct from "Triangula": we know from Las Casas (*Apologética Historia*) that the name "Triangulo" was attributed by cartographers to Guanahaní.

In Pierre Desceliers' map (1546) the name "Samana" appears to the west of the name "Guanahani" and to the south east of an island surrounded by cays indicated as "Guanima".

In the map of Gillermo Le Testu of 1555 the island of "Samana" is clearly represented south-east of a larger island named "Guanima".

In the map of the Greek Georgio Sideri (known as Callapoda) (1563) appear the names "Guanaha" (sic) and "Amana" (sic). The latter is placed in a position such as to make it considered related to the gulf of Samaná on the island of Hispaniola.

Battista Agnese (of the 16th century) in his map puts the island "Guaanaani" (sic) on the 24° parallel with various islands southeast of it and "Maniga", "Cayas", and "Cuaba". Samaná is not represented.

In the Portuguese map of the Biblioteca Riccardiana of Florence (still of the 16th century) appears only "Ganahani" (sic).

Among the Lucayos islands represented in the map of Bartolomé Olives (1563) one finds the island "Guanahani", while any indication of Samaná is missing.

Finally, in the map of Antonio de Herrera, who wrote at the end of the 16th and the beginning of the 17th century on the basis of manuscripts and news of the time of the first discovery, "Guanihana" (sic) appears to be northwest of "Samana".

The testimony of the first map of Juan de la Cosa would certainly have been sufficient; however, we have preferred to furnish a list of many early maps in which Guanahaní and Samaná appear, together or alone, so that no doubt would remain in regard to this question.

Finally, a simpler argument but a most important one, which is in our view decisive.

The terms Guanahaní and Samaná are Taino names. They are not English names like Watling, Crooked Island, and Long Island. They are not Anglo-Spanish like Cat Island, formerly Isla del Gato. How could the island that was then called with a name given to it by the Taino population — and Samaná is certainly a Taino word — have two names and also be called Guanahaní? Samaná did indeed maintain its original Taino name throughout the XVIth-century maps. It did not change its name and the Taino term has come down to us today. On the other hand, Guanahaní was named time after time San Salvador, Trianglo, then again Guanahaní, and then later Watling.

Notwithstanding all these name changes, one sure thing remains about which no doubt could be nourished, and that is that Columbus' Landfall was on an island called by the Indians Guanahaní, and not on the one the Indians called Samaná.

#### NOTE

1. We have copied without accent the names as they appear in the old maps. We will use the accent when we are not directly citing names on the maps.

#### BIBLIOGRAPHY

- R. Almagiá. *Monumenta Cartographica Vaticana*, vol. I, Carte nautiche, planisferi e affini, Biblioteca Apostolica Vaticana, Città del Vaticano 1940, tav XLIII b.
- M. Cappon. "Ma dov'è l'America di Colombo? dove sbarcò il Genovese il 12 ottobre 1492: a San Salvador o a Samaná Cay?" *Epoca*, XXXVII, n. 1885 (Milano, 21 novembre 1986).
- G. Charlier. *Valeur du mille utilisé en mer par Cristóbal Colón durant son voyage*, 244. Liège: Boulevard d'Avroy, 1986.
- Alonso de Chaves. *Quatri partitu en cosmografía práctica, y por otro nombre espejo de navegantes*, manoscritto del 1526 edito e trascritto da P. Castañeda Delgado, M. Cuesta Domingo y P. Hernández Aparicio. Madrid: Instituto de Historia y Cultura Naval, 1983, pp. 316-318.
- S. Conti. "San Salvador rimane San Salvador, Demolita la sensazionale notizia del National Geographic." *Columbus* 92 (Genova, nov. 1986).
- G. Ferro. "Colombo e le sue navigazioni secondo il diario del primo viaggio. Osservazioni di un geografo." *Atti del Convegno in San Salvador 30 ott. — 2 nov. 1986*, in corso di stampa.

- J. Judge. "Where Columbus Found the New World." *National Geographic* (November, 1986), pp. 566-599.
- K. Kretschmer. *Die Entdeckung Amerika's in ihrer Bedeutung für die Geschichte des Weltbildes*. Berlin: W. H. Köhl, 1892, vol. II, Atlas, tavv.: VII, XV, XVI, XVII, XXII, XXXV.
- L. Marden. "The First Landfall of Columbus." *National Geographic* (November, 1986), pp. 572-577.
- R. Montojo. *Las primeras tierras descubiertas por Colón*, Madrid: Sucesores de Rivadeneira, 1892, lam. III.

