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OF THE  
SEVENTH SYMPOSIUM  
ON THE  
NATURAL HISTORY OF THE BAHAMAS**

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## KEYNOTE ADDRESS

### THE ANIMALS COLUMBUS SAW: The Controversial First Zoology of the Bahama Islands

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#### ABSTRACT

Columbus kept a journal of his voyage to the Bahamas, providing a glimpse of the islands during the time of the Lucayans. The journal was a chronicle of marvels, recording the European discovery of corn and manioc, crops that would change the eating habits of humanity, and of tobacco, that would be its curse. His was the first European record of a West Indian coral reef and the Bahama parrot. He was probably also the first to describe rock iguanas and the white-crowned pigeon, although his journal is ambiguous and we can't tell for certain. Alas, the original journal has been lost; today historians must guess as to its precise contents. Only a handwritten transcription has survived: Bartolomé de las Casas's (circa 1590) abstract entitled The Diario of Christopher Columbus's First Voyage to America, 1492 - 1493. Although the Diario bears the first descriptions of the plants and animals of the Western subtropical Atlantic and the Bahamas, readers often have never quite been certain as to which species the great explorer was describing, resulting in a rather testy inter-generational debate among some of the most esteemed historians and biologists of the past two centuries, including Samuel Eliot Morison and Georges Cuvier. Neither of these scholars had an accurate firsthand version of the Diario. Things changed in

1962, when las Casa's Diario was printed as a photographic facsimile by Carlos Sanz, and in 1989, when a typeset transcription of the Diario was published by Dunn & Kelley, making it easily available to scholars. This paper interprets the descriptions of animals - aquatic and terrestrial - contained in Columbus's Diario in the light of these new resources and of our contemporary knowledge of biology, taxonomy and pre-Columbian history. It discusses fish, whales, seabirds, coral reefs, parrots, white-crowned pigeons, lizards, crocodiles, snakes, iguanas, and dogs. It also speculates as to why two quintessentially Bahamian species, the monk seal and the hutia, were not mentioned in the Diario.

#### INTRODUCTION

History regards Christopher Columbus variously as a heroic discoverer, a genocidal scoundrel, and everything between. However, I am not here to judge him. I recognize that the exigencies of the Fifteenth Century determined a world which was alien to me and to my moral perspective five hundred years later. Columbus was a man of his times, no more, no less.

I am here instead to learn from Columbus. He and his crew were the first Europeans since Leif Erickson to observe and record details of New World natural history, and the first to observe its subtropics. Columbus's journal is a marvel of

firsts: the first European record of tobacco, corn and manioc, the first description of a New World coral reef, the first record of the Bahamas parrot, the first mention of Bahamian snakes and (probably) rock iguanas, the observation of flocks of birds so abundant that they darkened sky, and much more.

As the author of the most recent natural history of the Bahamas (Campbell, 1978), I feel a sure affinity with Columbus, who was author of the first. Columbus observed wonders that I can only dream about. And yet I would be the last to claim that he saw a pristine Bahamas, a baseline against which to compare the archipelago today. These scraggly islands, species-poor but rich in endemics (Correll & Correll, 1982), had been inhabited for hundreds of years before the European arrival, must have had showed the pervasive mark of humans and had been diminished of their full bouquet.

### THE DIARIO

Several of Columbus's contemporaries reported that he kept a detailed journal of his first voyage, as a matter of record of his discoveries for the Spanish monarchs, Ferdinand and Isabella. Columbus's son, Fernando (1488 - 1539), used the text as a resource for his Historie della Vita e dei Fatti di Cristoforo Colombo, a biography of his father, published posthumously in Venice in 1571 (Caddeo, 1958). Friar Bartolomé de las Casas (1474 -1566) also consulted Columbus's Diario for his monumental Historia de las Indias, which did not appear in print until 1875. However, for nearly 300 years, these were the last scholars to have access to primary, or even secondary, material. The original Diario, as well as any copies that may have been made of it, had been lost.

This situation persisted until 1790, when Martín Fernández de Navarrete (1765-1844), a retired Spanish naval officer, discovered El Libro de la Primera Navegación, an abstract of Columbus's Diario in Las Casas's distinctive handwriting, in the personal library of El Duque del Infantado in Madrid (Dunn & Kelley, 1989). The abstract consisted of 76 double-sided large paper folios. Folios 1 - 67 described Columbus's first voyage; the rest were of his third voyage. The Libro had only one figure, entitled "Hallan ya tierra", illustrating the first sighting of San Salvador by Rodrigo de Triana<sup>1</sup>.

Historians, of course, prefer to have original materials, but Las Casas was not so fortunate. Instead, he seems to have relied on the somewhat botched copy of a holograph, and although he was a careful scholar, his raw material was flawed. These imperfect materials, certainly, have been the source of much of the controversy surrounding Columbus's adventures, particularly the details of his navigation and his route through the Bahamas (Table 1). Worse, Las Casa's Libro is written without polish or style, burdening the reader with pedestrian and often redundant stretches. Las Casas himself noted that Castilian "was not the mother tongue of the Admiral".<sup>2</sup> Some scholars, in particular the Nineteenth Century French historian Henry Vignaud, have argued that las Casas's Libro had a political spin, that it was a deliberate distortion of history - full of "*fraudes, supercheria*" and "*fantasia*"<sup>3</sup>, that las Casas, in cahoots with Ferdinand Isabella, altered Columbus's Diario to bury the truth that the explorer was not, in fact, seeking Cipangu, but was actively searching for unknown lands, and that he was

<sup>1</sup>According to Morison (1963; 64) the sailor's correct name was Juan Rodriguez Bermejo.

<sup>2</sup>Quoted and translated by Morison, 1963.

<sup>3</sup>Ibid.

therefore a more visionary and capable navigator than history remembers. However, Samuel Eliot Morison (1963) cogently disputed Vignaud, pointing out that the abstract of Las Casas (who, certainly, was no fan of Columbus) abundantly presented the explorer as fallible and given to errors of judgement. Concluded Morison: "I am satisfied that the Abstract is exactly what it purports to be, an honest précis in the third person, with long quotations in the first person, from a copy of the original Journal, and that nothing except some details on navigation have been left out."

The first publication of the Libro was by Navarrete himself (1825), entitled the Colección de los Viages y Descubrimientos que Hicieron los Españoles por Mar desde Fines del Siglo VX. Navarrete also proposed the first of many possible routes for Columbus's journey through the Lucayan Islands, declaring that Grand Turk Island was *San Salvador*, the first landfall (Table 1). His work was eventually translated into Italian as the Raccolta di Documenti e Studi (1892-94; edited by

Cesare de Lollis), followed by translations into other languages. A French translation of Navarrete (de Verneuil, 1928) has proved especially valuable to biologists, because it contains footnoted commentary by the great French naturalist Baron Georges Cuvier (1769 - 1932), interpretations which I quote extensively in this paper by virtue both of their biological and historical value.

The first English translation of the Diario was Samuel Kettell's Personal Narration of the First Voyage of Columbus (Boston, 1827). "This very bad translation," wrote Morison (1963) "held the field until 1893, when the Hakluyt Society brought out an even worse one, by Sir Clements Markham." Cecil Jane's (1930) The Voyages of Christopher Columbus improved a bit on these, but, in Morison's words (1963) was "defective in many points, and careless on navigational matters, even omitting certain phrases." A revised version by Cecil Jane, adopting some, but not all, of Morison's corrections, appeared in 1939.

Morison (1887 - 1976) was probably the greatest Columbian scholar of all time, at

Table 1  
Reconstructions of Columbus's First Voyage

Columbus's Name	Morison (1941)	Judge (1986) Fox (1882)	Navarrete (1825)	Link (1958)	Varnhagen (1864)
<i>San Salvador</i> October 11 - 14	San Salvador I. (Watlings I.)	Samana Cay	Grand Turk I.	E. Caicos I.	Mayaguana I.
<i>Santa María de la Concepción</i> October 15	Rum Cay	N. Acklins I./ Crooked I.	Caicos Is.	Mayaguana I.	Acklins I/ Crooked I.
<i>Ferdnandina</i> October 16 - 19	Long I.	Long I.	L. Inagua I.	Samana Cay	Long I.
<i>Isabella</i> October 19 - 24	Crooked I./ Fortune I.	Fortune I.	Inagua I.	Long I.	Crooked I.
<i>Islas Arenas</i> October 25 - 27	Ragged Is.	Ragged Is.	—	W. Crooked I.	Ragged Is.

Based on Judge (1986).

least in English. His interpretations, often acerbic, of the Columbian voyages demonstrated rigor, discipline and precision; his travels were first-hand recreations of Columbus's routes; his translations of natural history were based on the advice of experts such as the ornithologist Ludlow Griscom. This paper is an homage to Morison; much of its inspiration derives from Morison's breathtaking presentation of history. Regardless, I often reinterpret - and at times outrightly disagree - with him.

Because of his distrust of the English translations, Morison used de Lollis's Raccolta for the preparation of his definitive studies of the Diario (Morison, 1939 and 1963). His source, therefore, was already mangled by its passage through an intermediary language. Regardless, Morison revered the Diario, remarking that Columbus "has the feelings and instincts of a poet, but he was no poet; simply a great sailor to whom the Spirit had spoken." In another passage, Morison wrote of "Columbus's very simplicity and over-enthusiasm, reminding one of a boy whose language trips over itself when trying to express an urgent want..."

A photographic facsimile of Las Casas's Libro was published in 1962 by Carlos Sanz Ltd. (Madrid), enabling scholars for the first time to work with the primary material. In 1989, Oliver Dunn and James E. Kelley, Jr. produced a rigorous English translation using the Sanz facsimile, entitled the Diario of Christopher Columbus's First Voyage to America 1492-1493 (from now on referred to as "the Diario"). More importantly, Dunn and Kelley converted Las Casas's "small, cursive hand, forty to fifty lines per page" to a standardized, easily legible typeset, which for the first time allowed Spanish-literate scholars draw their own conclusions as to the contents of the Diario. It is the Dunn and Kelley typeset version that I used as raw material for this

paper. I gratefully acknowledge these two scholars for opening a portal into a world and time I thought I'd never see. However, lacking the full armamentarium of symbols, fonts, superscripts and subscripts devised by Dunn and Kelley, my quotes are weak facsimiles of their brilliant work. Furthermore, to conserve space, I have not conformed to the lines and stanza breaks of either the Las Casas or Dunn & Kelley versions. Although the transcriptions below are sufficient for the purposes of this paper, I recommend that the scholar interested in interpreting the Diario verbatim consult Dunn and Kelley directly.

## THE NATURAL HISTORY

Was Columbus a good observer? Was he objective? Have his observations been faithfully recorded so that we, a half millennium later, can envision what he encountered? Just as importantly, have the interpreters of his journal, and particularly the natural history it contains, been accurate and fair? This paper will attempt to answer those questions as they pertain to zoology; the botanical aspects of the Diario have been competently discussed elsewhere (I particularly recommend Kingsbury, 1991). In this paper I comment on most (but not all) of the passages from the Diario that relate to zoology of the tropical Atlantic and the Bahamas, as well as provide a partial chronicle of the opinions - often contradictory, sometimes wrong and at times testy - of previous scholars, most especially Cuvier and Morison.

## THE OUTWARD VOYAGE

### Tuna

Columbus's natural history begins in the tropical Atlantic with routine records of

fish, whales and birds - plus a little speculation now and then. And yet there is nothing routine about the interpretations of his records by scholars over the centuries. Consider, for example:

The Diario, Folio 4r, 41-42; at sea, September 17: *viero muchas toninas y los dila niña mataro vna / dize.*

Dunn & Kelley: "They saw many dolphins and the men of the Niña killed one."

For their translation of *tonina*, Dunn and Kelly rely on Morison, who they claim translated the word as "dolphin" (implying the fish (*Coryphaena* sp., not a marine mammal). They are wrong: in fact, Morison (1963; 54) translates *tonina* as "tuna." Morison, I believe, got it right, an interpretation substantiated by the fact that later in the Diario (Folio 6r, 25-26; at sea, September 27) he translates *dorado* to mean *Coryphaena*.

Admittedly, whether Columbus saw tuna or dolphin is largely irrelevant; both, certainly, are abundant in the mid-Atlantic. However, for a chronicle of such historical importance, it's prudent to set the record straight.

### A Whale

The Diario, Folio 5r, 20 - 22; at sea, September 21: *viero vna vallena qs señal q estaban cerca de trra porq siemp' ----[?] anda cerca/.*

Dunn & Kelley: "They saw a whale, which is a sign that they were near land, because they always go close."

This observation would have gone unnoticed by historians, except for Columbus's comments on whale behavior.

Morison (1963; 56), pointing out that whales are common denizens of the open sea, sardonically concluded that "the Admiral had much to learn about the habits of whales." Maybe so, but he certainly knew a lot about the habits of humans, and I'm sure that his restive crew found his interpretation to be reassuring.

But, even from the vantage point of natural history, I would treat Columbus more generously. In fact, one would expect to find few large whales in the sterile surface waters of the open tropical sea. The only baleen whale common in the tropical mid-Atlantic is the Bryde's whale, although large toothed whales, such as the sperm whale (which can dive deeply to catch meals of squid and are not therefore directly dependent on zooplankton) are sometimes encountered there.

Cuvier (Tome 2; 76) recognized this and was therefore much more considered in his comments:

"Ainsi, par le nom *baleine*...Colomb peut très bien avoir voulu désigner un chachalot ou quelque autre grand cétacé. Lorsqu'il dit que les baleines sont ordinairement près des côtes, il n'a probablement entendu cela que des baleines et des autres cétacés que venaient encore assez communément, à l'époque où il écrivait, dans le golfe de Biscaye."

### Flying Fish

The Diario, Folio 6v, 26 - 29; at sea, October 5: *el ayre my dulce y teprado yerva ninguna aves pardelas muchas peces golodrinis volaro en la nao muchos /.*

Dunn & Kelly: "The breeze [was] very sweet and temperate. No weed. Many petrels. Many flying fish flew into the ship."

Flying fish (family Exocoetidae) are ubiquitous denizens of the open tropical sea, and it would therefore seem straight forward and obvious to translate *peces golodrinós* as "flying fish."

Yet Morison (1963), an experienced sailor, didn't get it right, accepting instead the arcane interpretation that "These were the flying gurnard, or flying fish, *Cephalacanthus*<sup>1</sup> *volians*)." Clearly they are not flying gurnards, which are slow-moving benthic fish of the shallow inshore.

Morison may have simply perpetuated an error of Cuvier, (Tome Second; 33-34): "Ce sont très probablement des *trigles volans* ou *dactyoptères*. On les appelle quelquefois *arondes* ou *hirondelles de mer* sur la Méditerranée..." Cuvier wisely concluded, however, "mais il est bon d'éviter ces termes équivoques."

#### A Harbinger of the New World; Avian Spin?

The *Diario*, Folio 3v, 30-31; at sea, September 14: *...aquí dixero los dla caravela niña q avian visto vn garxao y vn rabo de junco [/?]*

Dunn & Kelley: "...here the men of the caravel *Niña* said that they had seen a tern and a tropic bird"

The record of the "*rabo de junco*" (literally "reed tail") may mark a milestone in the history of zoology: the first documented European sighting of an unequivocally New World species. The tropic bird (as correctly pointed out by Morison, 1963, who called it a "boatswain-bird") could have been either an Old World red-billed tropic bird (*Phaethon aethereus*), the closest breeding colony for which is in the Cape Verde Islands, or a white-tailed tropic bird (*P.*

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<sup>1</sup>Now *Dactylopterus*.

*lepturus*), which ranges throughout the New World tropics and Bermuda. We will never know, but if it was the latter, then this animal was the first harbinger of the New World.

Did Columbus really see a tern? Perhaps, but unlikely. Morison (1963; 52) spelled the word *Garajao*, "meaning any large Tern with a bright red bill." He then commented that "the occurrence of one 600 miles west of the Canaries in the Sargasso Sea is incredible," concluding that Columbus probably saw either a migrating Arctic tern or a juvenile red-billed tropic bird. His interpretation, I believe, is as credible as any. However, I suspect that once again Columbus may have been putting a spin on things, intentionally misidentifying the bird as a tern to reassure his crew.

#### Yet More Spin or Wishful Thinking?

Now Columbus puts a further reassuring spin on his commentary on tropic birds and putative terns:

The *Diario*, Folio 3v, 31-33; at sea, September 14...*y estas aves nuca se aparta de trra quado mas .xxv. leguas!*

Dunn & Kelley: "these birds never depart from land more than 25 leagues"

The comment is patently wrong. However, I doubt that Columbus was so flawed a sailor and natural historian as to not know vital information on the behavior and ranges of seabirds. Regardless, others have taken Columbus at his word. Ludlow Griscom (Morison's consultant on ornithology) caustically commented (in Morison, 1963; 53),

"Columbus's idea that these birds did not occur more than 25 leagues from land is wrong....I consequently assume that these



birds were in fact pelagic species, normally occurring at those latitudes in that season. Any other approach leads to the absurd assumption that the open Atlantic was covered with lost waifs to a degree unheard of in the next four and one-half centuries."

Morison (1963; 53) raised another intriguing hypothesis, which invoked the expectancy of crossing unknown seas and which may explain the Admiral's comments. Columbus, he argued, may have thought that he was close to St. Brendan's, a mythical island which in the Fifteenth Century was widely believed to be hidden in the central Atlantic. A reassuring thought, for sure, and one that would give the explorer and his ancients the courage to continue.

#### Migrating Birds or Storm Petrels?

The Diario, Folio 4r, 11-14; at sea, September 18: *Este dia martin alonso co la pinta q eraq avia visto gra valera no esp[er]o porq dixo al almi. dsds su caravela que avia visto gra multitud de aves. yr hazia el ponie...*

Dunn & Kelley: "This day Martin Alonso, with the *Pinta*, which was a great sailor, did not wait, because he said to the Admiral from his caravel that he had seen a great multitude of birds going toward the west..."

The implication is that Captain Alonso thought he was seeing migrating land birds. The brave Captain should have known better. They were probably storm petrels. The dyspeptic Griscom (in Morison 1963; 55) agreed, pointing out that they were: "Most likely small Petrels or *Phalaropea*. They were not in the path of migratory birds."

#### Boobies

The Diario, Folio 4v, 21-23; September 19: *Esta dia a las diez oras vino a la nao vn alcatraz y la tarde viero otro q no suelen apartarse .xx. leguas de trra.*

Dunn & Kelley: "On this day at the tenth hour a booby came to the ship and in the afternoon they saw another; they do not usually depart more than 20 leagues from land."

Any modern-day speaker of Spanish would argue that *alcatraz* means "pelican," not "booby." However, the meaning of the word has evolved during the 500 years since Columbus wrote his journal. Morison (1963; 55) was the first English-speaking scholar to bring this ontogeny to light, writing "Although most Spanish dictionaries give the meaning as 'pelican,' this was then the Portuguese and Spanish term for boobies and gannets."

Cuvier, too, understood the classical meaning of *alcatraz*. He observed: (Tome Second; 21): "*L'alcatraz* est le genre d'oiseau que les Français nomment *fous* et les Anglais *boobies*, se sont mes sula."

Dunn and Kelly, therefore, relied on Morison's definition of *alcatraz* as either a booby or gannet. Morison (1963; 55) points out that Columbus very likely was already familiar with the European gannet (*Sula bassana*), however notes that it would be a vagrant in the tropical western Atlantic, and suggests instead that Columbus saw one or more of the three tropical boobies commonly found in the mid-Atlantic: the brown booby (*S. leucogaster*), the blue-faced booby (*S. dactylatra*) or the red-footed booby (*S. piscator*).

*Alactrazes* (sometimes spelled *alcatraces*) were seen again on September 20, September 23, September 24, September 29.

### Frigate Birds

The Diario, Folio 6r, 36-38; at sea, September 29: *viero vn ave se llama rabiforçado<sup>1</sup> q haze gomitar a los alcatraçes lo q comen por [?] p[ar]a comerlo ella y no se matiene de otra cosa/.*

Dunn & Kelley: "They saw a bird that is called a frigate bird, which makes the boobies throw up what they eat in order to eat it herself, and she does not sustain herself on anything else."

This, unequivocally, is frigate bird behavior and there is no controversy as to the interpretation. In an unusual fit of praise for Columbus as natural historian, Morison (1963; 58) noted: "Columbus's descriptions of its [the frigate bird's] habits at the expense of the boobies is correct, and much to his credit; since naturalists for long after his day (and common seamen to this day) have declared that the frigate-birds are eating the booby's excrement." Morison continued: "Columbus's observation must have been made on his Guinea voyages, as this bird cannot rise from the water, and has never been observed more than 200 miles from land."

Cuvier (Tome Second; 30) also knew about frigate bird's kleptoparasitism: "La frégate, *pelecanus fregate*, a en effet l'instinct de poursuivre les fous et de des contraindre à abandonner le poisson qu'ils ont déjà saisi, et de s'n emparer."

The frigate birds could well have been Bahamian, or at least Antillean. Certainly there were vast breeding colonies of frigates then. Over three hundred years later, Henry Bryant (1858) wrote this astonishing description of frigate birds on one of the Ragged Islands:

"I have visited the breeding-places of many sea birds before, and some well worth the trouble, but none so interesting as this. It was a most singular spectacle: thousands and thousands of these great and ordinarily wild birds covered the whole surface of the prickly pears as they sat on their nests, or darkened the air as they hovered over them, so tame as they would hardly move on being touched...when I penetrated as far among them as possible, I fired my gun; the whole colony rose at once, and the noise made by their long and powerful wings striking against each other was almost deafening."<sup>2</sup>

Three *Forçados* are noted again on September 30.

### Petrels

The Diario, Folio 7r, at sea, October 4: *viniero al navio mas de quareta pardales junto y dos alcatraçes a al vno dio vna pedrada vn moço dla cara vela/. vino a la nao vn rabiforçado y vna blanca como gaviota/.*

Dunn & Kelley: "There came to the vessel more than 40 petrels together, and two boobies, and a ship's boy of the caravel hit one with a stone. A frigate bird came to the ship, and a white bird like a gull."

I want to know where the boy got a stone in the middle of the Atlantic. Was it part of the ballast?

Morison also translated *pardales* as "petrels." Griscom, quoted in Morison (1963; 60) noted: "At least two species of small petrels would be possible: Wilson's (*Oceanites oceanites*) or Leache's (*Oceanodroma leucorhoa*)."

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<sup>1</sup>*rabi* was added as an insert, perhaps by las Casas.

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<sup>2</sup>Bryant (1959).

In modern Spanish "*gaviota*" is unequivocally a sea gull, although it's unlikely that Columbus saw one so far from land; gulls are coastal birds. I hypothesize that he may have seen an Audubon's shearwater (*Puffinus herminieri*), which are common sea birds throughout the Lucayan Archipelago and the open sea to the east. Unlike gulls, shearwaters are at home on the open sea.

### Trusting Bird Brains

On October 7 Columbus encountered what he believed to be flocks of migrating birds, harbingers of the New World, and altered his course accordingly to follow them, trusting the instincts of seabirds as much as his own. Who says this man wasn't a great naturalist?

The Diario, Folio 7v, 17-24; at sea, October 7: *y porq passava gra multitude de aves dla p[ar]te del norte al sudueste por lo qual era de creer q se yva a dormir a trra/o huyan quiça dl invierno q en las trras de donde venian devia de querer venir/. + por esto el almi<sup>e</sup>. acordo dexar el camino del gue este : y pone la proa hazia guesueste con determinacion de andar dos dias por aqlla*

Dunn & Kelley: "...and because great multitudes of birds were passing from north to southwest, which made it likely that they were flying off to sleep on land, or perhaps were fleeing from the winter, which, in the land from which they were coming, must be about to arrive; and [also] because the Admiral knew that most of the islands that the Portuguese hold they discovered through birds, the Admiral agreed to leave the route west and head west-south-east [sic] with the intent to go two days on that course."

### Avian Oddballs

Things got inexplicably interesting on October 8.

The Diario, Folio 7v, 39-41; at sea, October 8: *...muchos paxaritos de campo y tomara vno q yva huyedo al sudueste grajaos y anades /y un alcatraz /.*

Dunn & Kelley: "[There were] many small land birds, and they caught one. Crows and ducks were flying off to the southwest, and one booby."

Ducks? Possibly, but unlikely. Regardless, the translation is unequivocal; we can only guess what Columbus observed.

Crows? Impossible, but there is an easy explanation. Morison (1963; 62), correctly I believe, postulated that the transcriber confused the word for crow (*grajao*) with the word for tern (*garajao* or *garxao*).

### Night Birds

Now, a mysterious and lovely observation, full of expectation that land was near:

The Diario, Folio 8r, 3; at sea, October 9: *toda la noche oyeroy passar paxaros/.*

Dunn & Kelley: "All night they heard birds pass."

### Sighs of Relief

The Diario, Folio 8r, 20-28; at sea, October 11: *los dla Carave la niña tabien viero otras señales de trra y vn palillo cargado descaramojos : coestas señales respiraro y alegrarose todos/.*

Dunn & Kelley: "The men of the caravel *Niña* also saw other signs of land and a small stick loaded with barnacles. With these signs everyone breathed more easily and cheered up."

I believe that Dunn & Kelley were correct in translating *descaramojos* as "barnacles," which is the most simple - and therefore the most likely - explanation of what Columbus's crew observed. In doing so, they corrected an egregious error by Morison, a blunder that has crept into every recent popular account of Columbus's voyage. Mixing his kingdoms, Morison (1963) translated *vn palillo cargado descaramojos* as "a little branch full of dog-roses," which he interprets as being similar to *Rosa canina*, the European wild rose. Having accepted that the *descaramojos* are botanical, he dug the hole even deeper, concluding that (63): "...what the *Niña* picked up must have been a Bahamian flower."

#### THE DAY OF DISCOVERY: SAN SALVADOR

##### The New World

The following are, perhaps, the most important words of discovery ever recorded. The Earth shall never recover from the events that ensued with:

The *Diario*, Folio 8r: 38-43; at sea, October 11: *esta trra vido primero vn marinero q se dezia Rodrigo de triana: puesto q el almi<sup>e</sup>. a las diez dla noche Estando enl castillo de popa vido lubre avnq fue cosa tan çerrada q no quiso afirmar q fuese trra/.*

Dunn & Kelley: "A sailor named Rodrigo de Triana saw this land first, and although the Admiral, at the tenth hour of the night, while he was on the sterncastle, saw a light,

although it was something so faint that he did not wish to affirm that it was land."

And the landfall, followed by the first observations of New World botanical diversity:

The *Diario*, Folio 8v, 36-38; San Salvador, October 12: *puestos en trra verion arboles my verdes : y aguas muchas y frutas de diversas maras/.*

Dunn & Kelley: "Thus put ashore they saw very green trees and many ponds and fruits of various kinds."

The following day, more general descriptions of San Salvador:

The *Diario*, Folio 10r, 21-25; San Salvador, October 13: *Esta isla es bien grade y my llana y de arboles my verdes y muchas aguas y vna laguna en medio muy grade sin ninhuna montaña y toda ella verde qs plazer de mirarla/.*

Dunn & Kelley: "This island is quite big and very flat and with very green trees and much water and a very large lake in the middle and without any mountains; and all of it so green that it is a pleasure to look at it."

##### A Coral Reef

On October 14, while taking a longboat along the western and northern fringes of San Salvador, Columbus was beckoned by the Lucayans to come ashore. He refused, noting:

The *Diario*, Folio 10v, 27-34: San Salvador, October 14: *mas yo temia de ver vna grade restinga de piedras q çerca [?] toda aqla Isla al redor/. y entremedias queda hondo y puerto p[ar]a quatas naos ay en toda la xpiandad y la entrada dello muy angosta/.*

Dunn & Kelley: "But I was afraid, seeing a big stone reef that encircled that island all around. And in between the reef and shore there was depth and harbor for as many ships as there are in the whole of Christendom, and the entrance to it is very narrow.

This is the first European description of a West Indian coral reef, its enclosed lagoon, and its soon-to-be-infamous dangers.

However, I would translate *restinga de piedras* more explicitly, as "ridge of stones" rather than "stone reef." Having sailed in the tropical eastern Atlantic, where coral reefs are not as exuberant as in the Caribbean, Columbus was probably unfamiliar with them. Hence his rather clunky construction to describe the reef at San Salvador.

#### Bahamas: A Name is Coined

The Diario, Folio 10v, 27-34: San Salvador, October 14: *Es verdad q dentro desta çintha ay algunas baxas mas la mar no se mueve mas que detro en vn pozo/.*

Dunn & Kelley: It is true that inside of this belt [of stone] there are some shallows, but the sea is no more disturbed than inside a well.

*Baxas...mar.* Here, for the first time we observe the near juxtaposition of the two Spanish words that were to become the future name of the Lucayan Islands: Bahamas.

#### Parrots

The Diario, Folio 8v, 17-22: San Salvador, October 12: *los quales despues venian a las barcas dlos navios abonde nos estavamos notado : y nos trayan papa gayos y hylo de*

*algodon en ovillos y azagayas y otras cosas muchas...*

Dunn & Kelley: "Later they came swimming to the ships' launches where we were and brought us parrots and cotton thread in balls and javelins and many other things..."

Columbus and his crew, having traveled to tropical Africa, probably recognized parrots. These were undoubtedly *Amazona leucocephala bahamensis*, the Bahamian subspecies of the Cuban parrot. Although today relegated only to Abaco and Inagua, the Bahamas parrot was once widespread throughout the Lucayan Islands, and it is therefore not surprising that Columbus observed it on San Salvador, where if it weren't native, it could have been introduced as a pet by the Lucayan Indians. Columbus noted that the Indians carried the parrots about, implying that they were tame; it is well known that Bahamian parrots, when captured as fledglings, become affectionate easily.

#### Stingray Spines

The Diario, Folio 9v, 2-4; San Salvador, October 12: *sus azagayas son vnas varas sin fierro y algunas dellas tienen al cabovn diente de peçe y otras de otras cosas/.*

Dunn & Kelley: "Their javelins are shafts without iron and some of them have at the end a fish tooth and others of other things."

I submit that Columbus may have observed spears armed not with a fish teeth, but with a stingray spines, a respected weapon of the people of Central America, and one would presume, of the West Indies.

## FERNANDINA ISLAND

### All the Pretty Fish

The Diario, Folio 13v: 7-13: Fernandina, October 16: *aqui son los peçes tan disformes de los nros q̄s maravilla/. ay algunos hechos como gallos dlas mas finas colores del mudo/azules amarillos Colorados y de todas colores y ortos pintados de mill maras/. y las colores son tan finas q̄ no ay hobre q̄ no se maraville y no tome gra descanso a verlos/.*

Dunn & Kelley: "Here the fish are so different from ours that it is a marvel. There are some shaped like dories, of the finest colors in the world: blues, yellows, reds, and of all colors; and others colored in a thousand ways. And the colors are so fine that there is so man who would not marvel and take great delight in seeing them."

Who could not have been smitten by these clear waters, bannered with colorful reef fish?

### Whales, Parrots, Lizards and Snakes

The Diario, Folio 13v, 13-16; Fernandina, October 16: *tambien ay vallas bestias en trra no vide ningua de nunguna mara / Saluo papagayos y lagartos vn moço me dixo q̄ vido vna grade Culebra :*

Dunn & Kelley: "There are also whales. On land I saw no animals of any kind except parrots and lizards. A boy told me that he saw a large snake."

One wonders what kinds of whales Columbus would have seen in October; perhaps the first humpbacks migrating from Greenland to the Silver, Mouchoir and Navidad Banks.

These descriptions are straightforward. However, I want to point out that

in this passage Columbus is clearly differentiating between lizards (*lagartos*) and a snake (*Culebra*). (This will become important later, when I discuss the *sierpes* of Isabella.) The only "large snake" in the Bahamas is the ground boa (*Epicrates* spp.); if so, then this is the first record of ground boas.

*Lagartos*, if interpreted to mean "lizards," could have been any species in the families Iguanidae, Teiidae and/or Gekkonidae. We may never know which Columbus was describing, however the reference to "green lizards" in Fernando's Historie suggests that the explorer may have observed a diminutive anole.

Yet there is another interpretation of *lagartos*. In modern Latin American Spanish and Portuguese *lagarto* is also frequently used to designate a crocodilian. Although today crocodilians are not found in the Bahamas, both the American Crocodile (*Crocodylus acutus*) and the Cuban crocodile (*C. rhombifer*) are found on nearby islands. Further, the 2,800 year-old fossil skeleton of a Cuban crocodile has been recovered on Abaco (Franz et al. 1995). It is therefore quite possible that Columbus encountered one of these animals, most probably *C. acutus*, a marine animal capable of swimming hundreds of miles over the open ocean, and conspicuously hauling out on beaches.

Is this interpretation another romantic, but unlikely, fancy? Perhaps. But history unequivocally records the presence of crocodilians in the Bahamas. For example, Catesby (1725) wrote on the crocodiles of Andros:

"In shallow salt water, these impenetrable woods of mangroves are frequented by great numbers of alligators [crocodiles]. These watery woods [mangroves] are also plentifully stored with ravenous fish, turtles, and other animals, which continually prey one upon the other, and the alligator on them

all; so that in no place have I ever seen such remarkable scenes of devastation as amongst these mangroves in Andros, one of the Bahama Islands, where fragments of half-devoured carcasses were usually floating on the water."<sup>1</sup>

And McKinnen (1804) described crocodilians on a visit to Acklins Island:

"Alligators [crocodiles] were sometimes brought in for the table; but it required considerable address and some courage to destroy them. The flesh of an alligator which I tasted was hard, white, and very much resembled the sturgeon's."<sup>2</sup>

## ISABELLA ISLAND

### Flocks of Birds that Obscured the Sun

The *Diario*, Folio 16r: 6-11; Isabella, October 20: *y el Cantar dlos paxaritos q parçe ql hobre nuca se querria partir de aqui/. y las manadas dlos papagayos q ascureçen el sol : y aves y paxaritos de tantas maras y tan diursas dlas nras :*

Dunn & Kelley: "And the singing of the small birds [is so marvelous] that it seems that a man would never want to leave this place. And [there are] flocks of parrots that obscure the sun; and birds of so many kinds and sizes, and so different from ours, that it is a marvel."

Although Morison, Dunn & Kelley, as well as most other English translators have defined *paxaritos* as "parrots," I emphatically disagree. Besides the obvious misinterpretation of the misspelled Spanish word *pajaritos* ("little birds"), it is clear that this passage does not describe the behavior

of Bahamas parrots, which (although gregarious) do not form huge flocks.

Having made this statement, I find it reassuring to note that Ferdnando's *Historie* (Caddeo 1958) simply reports "*squadre di uccelli*" ("flocks of birds") on Isabella.

I submit instead that Columbus saw flocks of white-crowned pigeons (*Columba leucocephala*) which characteristically make daily migrations from their small breeding cays to the larger islands on which they feed. But could white-crowned pigeons have obscured the sun? Certainly. Although decimated by hunting, white-crowned pigeons may be observed today in huge congregations after their summer breeding season. I have watched thousands per hour flying in the early morning between Big Green Cay and South Andros, perhaps the last place where they occur in anything like their former numbers. October would be the very end of the breeding season, when the populations of adults and fledglings would be highest.

### Iguanas or Serpents?

The *Diario*, Folio 16r:17-24; Isabella, October 21: *andado asi en çerco de vna destas lagunas : vide vna sierpe : la qual matamos y traygo el cuero a vras altezas/. Ella como nos vido se echo en la laguna y nos le seguimos dentro ; porq no era my fonda fasta q con lanças la matamos/. es de siete palmos<sup>3</sup> en largo/. creo q destas semejantes ay aqui en estas lagunas / muchas/.*

Dunn & Kelley: "Thus walking around one of these lakes, I saw a serpent, which we killed; and I am bringing the skin to Your

<sup>3</sup>According to Dunn & Kelley, a *palm* is "one-eighths of the common commercial *cana* (or cloth measure) of southern Eurpoe and is about 24.75 centimeters long." This animal was therefore 5.7 feet long.

<sup>1</sup>cited in Campbell. 1978. page 26.

<sup>2</sup>ibid.

Highness. When it saw us it threw itself into the lake and we followed it in, because it was not very deep, until with lances we killed it. It is seven palmos in length. I believe that there are many similar ones in these lakes.”

The next day, another *sierpe* was killed:

The Diario, Folio 16v: 43-45; Isabella October 22: *a dha laguna martin alose pinçon capitan dla pinta mato otra sierpe tal como la otra de ayer de siete palmos...*

Dunn & Kelley: “And in the said lake Martín Alonso Pinzón, captain of the Pinta, killed another serpent just like yesterday’s, seven palmos long...”

The obvious translation of *sierpe* is “serpent.” But I urge caution here. Las Casas’s, in his monumental Historia de las Indias (Carlo, 1986; Vol. II, page 217) described *sierpe* as:

*Esta sierpe...causi es de manera de crocodilo o como un lagarto, salvo que tiene hacia la boca y natrices más ahusada que lagarto.*

“This *sierpe*...almost has the manner of a crocodile or of a lizard, except that toward the mouth and nose it is narrower than a lizard.” [translation mine.]

Clearly the *sierpe* was not a snake, but probably a rock iguana (*Cyclura* sp.), a view supported by Fernando Columbus (Caddeo 1958), who also defined *sierpe* to mean “iguana”, and who pointed (as did Las Casas) out that it was one of the Lucayan’s favorite foods. Although Las Casas’s interpretation was duly noted by Morison (1963; 78), he copped out of the dilemma by translating *sierpe* as “reptile.”

This view is bolstered by the fact that in other passages (see above), Columbus used the word *culebra* explicitly for “snake,” implying that *sierpe* was something quite different. Certainly the diving behavior of this *sierpe* is consistent with that of an iguana, and very unlike the behavior of the only Bahamian snake that could grow to a length of 5.7 feet, the ground boa. Further, if we accept Morison’s itinerary, we can be fairly certain that Columbus was describing the Bight of Acklins, which even today is well known to have many iguanas.

### Which Route?

Here, iguana (or for that matter, ground boa) biogeography provides us with a possible clue as to which islands Columbus visited on his voyage through the Bahamas (see Table 1). As pointed out above, it should come as no surprise to find *Cyclura* on Fortune/Crooked Island (alias *Isabella* of the Morison, Judge, Fox and Varnhagen hypotheses). On the other hand, *Cyclura* has never been recorded from Inagua (the *Isabella* of the Navarrete hypothesis), or on Long Island (the *Isabella* of the Link hypothesis), at least in modern times. Assuming that rock iguanas occurred on Inagua or Long Island during Columbus’s time, they would be expected to be distinctly, and recognizably, different from those of Fortune/Crooked Islands, which are on a different bank, isolated from the others even during the Pleistocene. If one could recover the *sierpe* skin that Columbus prepared for his queen (could it be extant in a museum, a library or the royal archives?), then perhaps the issue of his first landfall could at last be partially resolved.

### WHAT COLUMBUS DIDN'T SEE

Columbus’s Diario is a marvel of natural history. However, what is absent



from the document may be just as interesting as what was present. In particular, I wish to discuss two conspicuous species of animals that were not mentioned in Columbus's account of his voyage through the Bahamas: hutias and monk seals. And (at the risk of adding my name to the intergenerational list of squabbling scholars), I wish to present two (admittedly untestable, and therefore immortal) hypotheses.

### Hutias

There is no mention of hutias in the Bahamian passages of the Diario, although soon after departing the archipelago, Columbus explicitly described them in Cuba:

The Diario, Folio 25r, 39-40; Cuba, November 17: *ratones grades dlos de yndia tabien /*

Dunn & Kelley: "...big rats, also of the Indian kind."

Columbus, I expect, would have reported hutias had he seen them in the Bahamas. Fossil hutias are ubiquitous in Pleistocene and post-Pleistocene sites throughout the archipelago. Moreover, *Geocapromys ingrahami*, the extant Bahamian hutia, occurs in astonishing densities in East Plana Cay. Anybody landing there notices them (in fact *smells* them) immediately.

So why didn't Columbus report them in the Bahamas? I suspect it's because, as today, they weren't on the islands he visited. I submit that the Lucayans found the hutias to be an irresistible source of food. And one that was easy to catch: I have run them down and caught them with my bare hands on the beaches of East Plana Cay.

This alone, may account for their absence in the Diario. More germane,

however, is that Columbus reported that the Lucayans kept dogs:

The Diario, Folio 14r: 31-31; Fernandina, October 17: *y ay avia perros mastines y branchetes :*

Dunn & Kelley: "And there were dogs, mastiffs and terriers."

And where there are dogs, it is unlikely there will be hutias - at least for long. Although canids have never been native to the Bahamas, man's best friend must have arrived concomitant with the first human migration and commerce from South and Central America. It is well documented, for example, that the Aztecs domesticated (and ate) several breeds of dogs (including the hairless *Xquintli*), all descended from wolves.

I therefore hypothesize that hutias were already largely extinct in 1492, at least on the islands that Columbus visited. The pattern of their extirpation would have been all-or-nothing: where there had been dogs, there could not have been hutias. That they have persisted as a relictual population on East Plana Cay tells me that there have been neither Lucayans nor dogs there.

### Monk Seals

Also conspicuously absent from the Bahamian chronicles in the Diario is any mention of West Indian monk seals (*Monachus tropicalis*). For sure, Columbus described monk seals, which he called *lobos del mar* ("wolves of the sea") on his subsequent travels in other parts of the West Indies (indeed, he already may have been familiar with the Mediterranean monk seal), and we know of published accounts of abundant monk seals in the Bahamas during the Eighteenth and Nineteenth centuries. Consider, for example, the description of H. Sloane (1707):

"The Bahama Islands are filled with seals. Sometimes fishers will catch a hundred in a night."<sup>1</sup>

The Proceedings of the Government and Council of the Bahamas (1721-1722), which states that:

"...yearly about Winter the Seals come upon the Shores of these Islands to breed, and are caught. Each of which affords about 20 Gallons of oyl which is exported to Jamaica and other Plantations for the use of their Mills."<sup>2</sup>

Over a century later seals were still abundant in the Bahamas. In 1836, C. R. Nesbitt, in an article on Bahamian fisheries, wrote:

"At the seal banks, they are to be seen, as far as the eye can discern, upward of 500 in number. They are excellent swimmers and ready divers, and are very bold when in the sea; but they pass much of their time in basking in the sun on the dry banks, and in taking their repose..."<sup>3</sup>

Why, then, are there no descriptions of monk seals in the Diario? I propose another hypothesis: that monk seals were rare in the Bahamas in 1492. Like hutias, they would have been easy prey for Lucayan hunters. The Eighteenth and Nineteenth Century Bahamian sealers verified the seals' vulnerability, reporting that they could club to death sleeping seals with almost so stealth or effort (Campbell 1978). Further, I submit that the European arrival, in a terrible way, may have provided a brief reprieve for the monk seal in the

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<sup>1</sup>Quoted in Campbell, 1978, page 28

<sup>2</sup>Ibid. page 29.

<sup>3</sup>Ibid. page 28.

Bahamas. Within decades of Columbus's landfall, the Islands were totally depopulated, the Lucayans shipped off to mines in Hispaniola or struck down by Eurasian diseases. The Bahamas remained uninhabited for over two hundred years - enough time, I submit, for the monk seal to re-establish itself, and to account for the numbers reported in the 1700's. It was the second wave of Europeans that finally drove the species to extinction in the Bahamas.

## CONCLUSIONS

Five hundred years after it was written, Columbus's Diario remains a font of information and insight as to the natural history of the Bahamas before the European arrival. It marks the beginning the greatest adventure of planetary exploration - and, some would argue, the start of humankind's greatest tragedy.

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