An early note on the occurrence of the Magnificent Frigate Bird, *Fregata magnificens* Mathews, 1914, in the Cape Verde Islands: Columbus as an ornithologist *

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The importance of ornithological observations with respect to Columbus' discovery of America as recorded in the "Diario del descubrimiento" is recognized. The fact that his first and crucial crossing of the Atlantic coincided with the autumn migration may have contributed to its success. Columbus' log contains the first historical record of the [Magnificent] Frigate Bird, *Fregata magnificens* Mathews, 1914, in the Cape Verdes, with a surprisingly accurate description of its characteristic habits.

Introduction

In a previous paper (den Hartog, 1990: 182) with reference to the Cape Verde Islands, it was suggested that interesting historical details on the ornithology of that archipelago "might crop up from the ancient marine literature, unpublished ship journals etc.". The present note confirms this view and refers to no one less than Columbus, and may therefore be taken as a modest, somewhat retarded contribution in the framework of the past "Columbus Year". The idea to write this note took form in my mind when reading a popular Dutch translation (1991; unfortunately rather poor as regards the naming of birds) of an English edition of the "Diario del descubrimiento" by Fuson (1987). However, on behalf of writing it, I have based myself on the authorative annotated Spanish edition by Alvar (1976), and also consulted the concise edition of Morison's "Admiral of the Ocean Sea" (1942) and relevant sections from Kemp (1975) for nautical data, etc. As to Spanish and Portuguese names of birds, I have mainly relied upon Jørgensen (1958), Bannerman (1963), Bannerman & Bannerman (1968) and Moreno (1988).

Discussion of some data from the "Diario del descubrimiento"

In his famous "Diario del descubrimiento" (of which only the transscribed manuscript by his Spanish chronicler Bartholomé de las Casas is known) Columbus presents some interesting information on birds, obviously not because he had a special interest in them as such, but first of all because the presence of birds at sea was generally [and not entirely wrongly so] considered a sign of the near presence of land. In those times of illiteracy and superstition the average sailor certainly was not particularly eager to sail into the unknown, and as Columbus' voyage to discover a new,

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westerly route to Japan, China and India progressed without a landfall being made, fear and suspicion among his crew increased. Any possible sign of land therefore, must have been of no small importance to Columbus to keep controll by reassuring, convincing and motivating his apprehensive and mutinous crew. Such signs were of course irrelevant when the expedition was still in known territory and hence it is hardly surprising that the "Diario" does not mention a single observation of this kind during the first part of the expedition: from its departure on 3 August 1492 from Palos in southwestern Spain, until several days after they had left the Canary Islands on 9 September, sailing due west.

The first observation of a would-be sign of land was not entered in the "Diario" until 14 September, at ca 220 leagues (roughly 660 nautical miles) from the Canary Islands (at ca 28°N 30°W), when the crew of the Niña observed "un garxao y un rabo de junco" ["a tern and a tropic bird"; elsewhere in the "Diario" garxao is spelled grajao and garjao, and the last-named spelling is still used locally in the Canary Islands for the Common Tern, *Sterna hirundo* (Linnaeus, 1758); the current Portuguese name of members of the genus *Sterna* is similar, though spelled slightly different garajau or garajao; rabo de junco, from rabo = tail, and junco = rush or *Juncus*, is the Portuguese name for tropic bird; in Spanish the name was corrupted to rabijunco].

By then the expedition had sailed into the unknown, beyond the latitude of the Azores, and as Columbus had grossly underestimated the distance from the Canary Islands to Japan (Cipangu) at some 2400 instead of 10,600 nautical miles, he must have assumed to have already traversed more than a quarter of this distance. Be that as it may, from 14 September onwards the "Diario" almost daily mentions observations of drifting [sea]weed ("yerba"), birds (sea birds as well as land birds), dolphins, whales, etc., all regarded by Columbus as signs that land could not be far away. However, "yerba" undoubtedly refers to Gulfweed [*Sargassum natans* (Linnaeus, 1753) Børgesen, 1914], which forms a floating biotic community in the central part of the southern North Atlantic (Sargasso Sea). It is self-evident that Columbus could not have been aware of this, so that, on 17 September, he also misinterpreted the catch of a crab among "yerba". This was almost certainly *Planus minutus* (Linnaeus, 1758), the Gulfweed or Sargassum crab; another observation of crabs among "yerba" was made on 23 September. It may be noted in passing that the Dutch name for this crab actually commemorates Columbus, and reads "Columbuskrab" (Adema, 1991: 197).

Further to the west the expedition sighted more tropic birds, terns, boobies [alcatrazes, also spelled alcatraces; still the current Spanish and Portuguese name especially with regard to the Brown Booby, *Sula leucogaster* (Boddaert, 1783)], gull-like birds ["un ave blanca que parecía gaviota" and "una blanca como gaviota"; gaviota still is the current Spanish name for gull species, especially of the genus *Larus*], frigate birds [rabiforçado or simply forçado; a slightly different spelling from the current Spanish rabihorcado = forked tail], shearwaters [pardelas; still the current Spanish name], etc. But the expedition did not only spot seabirds, for Columbus explicitly recorded sightings of ducks [ánades; still the current Spanish name], of birds that in his view were "river birds" ["aves de rio"] and land birds ["aves de tierra; aves de campo"]. Some of these observations indeed must have been really suggestive of land being nearby, such as those made on 20 September, when the expedition was in the middle of nowhere, ca halfway the crossing at about 28°N 41°30'W. For this date the "Diario" reads: "...Vinieron a la nao dos alcatrazes y después otro, que fue señal de estar cerca de tierra; y vieron mucha yerba, aunque el día passado

no habían visto d'ella. Tomaron un páxaro con la mano, que era como garjao; era páxaro de rio y no de mar; los pies tenía como gaviota. Vinieron al navío, en amaneciendo, dos o tres paxaritos de tierra cantando, y, después, antes del sol salido, desparecieron. Después vino un alcatraz; venía de güesnorueste, iba al sueste, que era señal que dexaba la tierra al güesnorueste, porque estas aves duermen en tierra y por la mañana van a la mar a buscar sa vida, y no se alexan XX leguas..." ["...Two boobies came near the ship and later on another one, which is a sign of being close to land; they saw a lot of [sea]weed, though on the previous day they had not seen any of it. They took a tern-like bird by hand; it was a "river bird" and not a seabird; the feet were like [those] of a gull. At dawn, two or three small singing land birds came towards the ship, and, before the sun had risen, they disappeared. Then came a booby; [it] came from west-north-west, [and] went to the south-east, which was a sign that it left the land in the west-north-west, because these birds sleep on land and go to sea in the morning to search for food, and do not move away [from land] 20 leagues..."]. Similar observations that must have been most suggestive of nearby land were entered in the "Diario" for 8 October (ca 68°W 25°N), three days before they made their landfall in the Bahamas: "...Pareció la yerba muy fresca; muchos paxaritos (de campo, y tomaron uno) que iban hyendo al sudueste; grajaos y ánades y un alcatraz..." ["...The [sea]weed seems very fresh; many small birds (from land, and they took one) going to the southwest; terns and ducks and a booby..."].

In conclusion, it is obvious that bird sightings played a significant part in the success of Columbus' first and crucial crossing of the Atlantic. The fact that the crossing happened to coincide with the autumn bird migratory season, and that the expedition clearly got its share of stray migrants, consequently may have been a factor of more than marginal importance to Columbus' discovery of America. A detail to be mentioned in this connection is that the dates given in the "Diario" are according to the Julian calender and that these dates (as also used in the present note) need a correction of plus nine days to match our present Gregorian calender.

Although it would seem an interesting historical project to catalogue, deal with, and interpret all the bird observations mentioned by Columbus in his "Diario" and the logs of his subsequent voyages, such a project is beyond the scope of my present intentions. Here, I will restrict myself to one or two observations which are of some interest with regard to my previous work on birds of the Cape Verde Islands (den Hartog, 1990).

Firstly, the above-mentioned observation of a tropic bird on 14 September at ca 28°N 30°W seems noteworthy. Only one species, the Red-billed Tropic Bird, *Phaethon aethereus* Linnaeus, 1758, is known to occur in the eastern North Atlantic, breeding at present being restricted to the Cape Verde Islands [notably Raso with an estimated 80 birds (den Hartog, 1990: 165)] and to the Iles de la Madeleine situated within view of Dakar.

One other detail is of particular interest. It concerns the information entered in the "Diario" on 29 September at ca. 27°30'N 51'W, which reads: "...Vieron un ave que se llama rabiforçado, que haze gomitar a los alcatraces lo que comen para comerlo ella y no se mantiene de otra cosa. Es ave de la mar, pero no posa en la mar ni se aparta de tierra 20 leguas. Hay d'estas muchas en las islas de Cabo Verde..." ["...They saw a frigate bird, which causes the boobies to regurgitate what they have eaten, to eat it themselves and they eat nothing else. It is a seabird, but neither alights on the sea, nor moves away from the land [more than] 20 leagues..."].

In view of the fact that the Magnificent Frigate Bird is now all but extinct in the

Cape Verdes (den Hartog, 1990: 164-165; Hazevoet, in press) it is interesting to note that Columbus mentions there to be many. His short but surprisingly accurate description of the habits of frigate birds further suggests that he wrote from personal experience and not from hearsay and that he evidently had previously visited the Cape Verdes, but the possibility cannot be excluded that the information was actually communicated by one or more crew members who might have been there on a previous voyage. Apart from presumably representing the first mention of the Magnificent Fregate Bird in the Cape Verdes, this is also likely to be the first record of the characteristic piratical behaviour of frigate birds. The Cape Verdes together with Ascension and St. Helena are the only islands in the eastern and central Atlantic where frigate birds occur or are known to have occurred (St. Helena), but the two last-named islands were not discovered until 1501 and 1502, respectively. Information from the tropical western Atlantic only became available after Columbus' discovery of America, and information on the Indian Ocean could at the earliest have become available when the fleet of Vasco da Gama returned in 1499 from the first Portuguese voyage to India via the Cape of Good Hope.

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