

Bonn. zool. Beitr.	Bd. 42	H. 1	S. 27—34	Bonn, März 1991
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## **A preliminary census and notes on the distribution of the Barbary Falcon (*Falco pelegrinoides* Temminck, 1829) in the Canary Islands**

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**Abstract.** As a result of an initial census of the Barbary Falcon in the Canary Islands that was carried out between 1987 and 1988, a total of seven pairs have been detected on the islands of Lanzarote and Fuerteventura. On the other hand, the species can be considered to have become extinct on Tenerife and Gran Canaria. Finally some breeding data are presented and the most important threat factors are analyzed.

**Key words.** Aves, Falconidae, *Falco pelegrinoides*, census, Canary Islands.

### **Introduction**

The distribution range of the Barbary Falcon extends over subdesertic areas from the Canary Islands, the interior of Morocco, Tunisia, Algeria, Egypt and Israel to Afghanistan and the Gobi Desert in Asia.

For some authors the Barbary Falcon is simply a subspecies of the cosmopolitan Peregrine (Brosset 1986; Weick 1989) though in general, the majority assign it its own specific rank (Voous 1960; Vaurie 1965; Cramp & Simmons 1980; Cade 1982).

The criterion for segregation at the species level is based on the biometric and plumage differences together with the fact that the distribution area of both species overlaps in various localities with no hybrids having been detected. However, this argument cannot be regarded as being totally conclusive since a previously undescribed intermediate form, apparently restricted to the Atlantic coast of Morocco, has recently been detected (Brosset 1986).

Up to the present, the falcons inhabiting the Canary Islands have been treated as *Falco pelegrinoides*, a criterion which we share on the basis of our own observations, although it must be said that a detailed study is required to clarify correctly their taxonomic position.

### **Methods**

Initial data regarding the status and distribution of the Barbary Falcon was obtained in the two year period 1987—88 during the course of a wider study of the Birds of Prey of the Canary Archipelago. This information has been complemented with new observations carried out during the springs of 1989 and 1990.

A team of 9 ornithologists originally prospected the most suitable areas in each of the seven main islands and the principal islets. The census methods employed were in accord with conventional techniques, such as fixed observation points and transects on foot. Furthermore, sectors of inaccessible coastline were surveyed by boat.

## Results

### Tenerife:

The Barbary Falcon was not observed on this island although data exists to testify that it was formerly present at least until the beginning of this century.

The oldest reference about the presence of falcons on Tenerife dates back to the 17th century and is due to Edmund Scory (Purchas 1626). He stated that the falcons on Tenerife were the "strongest and the best of all due to being of a bigger kind than the Barbary falcons". He further relates the odyssey of a locally bred bird that was taken to Andalucia (South of Spain) and which returned by its own means to Tenerife, covering 250 leagues (more than 1,000 km) in only 16 hours.

Later Reid (1887) refers to the possible extinction of these falcons and Meade-Waldo (1893) concludes that they do not nest on Tenerife.

The data available concerning *Falco pelegrinoides* on Tenerife is due to the Austrian ornithologist Rudolf von Thanner who captured two females in the south of the island. One of them, an adult bird, was captured on 30 November 1908 at Guyero-Vilafior (probably Guayero) and the skin is now deposited in the Alexander Koenig Museum in Bonn (ZFMK A.11.15.f2.). In a paper published a year later, Thanner (1909) reports that this falcon was captured in a deep gorge (possibly Barranco del Rey or Barranco del Infierno in Adeje), where the local inhabitants stated that it nested.

The other specimen also comes from Vilafior, where it was taken on 28 November 1917 and is stored in the American Museum of Natural History (Catalogue No 537293).

These are the only Barbary Falcons to be correctly identified on Tenerife. The remaining observations cited in the bibliography are, in our opinion, dubious. However there are two mounted specimens (♂ and ♀) in the Godiño Brother's Collection at La Laguna which, despite lacking identification labels, could have been obtained in the island between the end of the last century and the beginning of the present.

Martín (1987) gives a list of recent observations of falcons though the majority have not been identified at the species level and probably all refer to *F. peregrinus*, which is not rare in winter.

### Gran Canaria:

Although some old references assumed that the Barbary Falcon nested on this island, conclusive proof is lacking and they should be treated cautiously. Bolle (1857) is the first author to comment on the falcons that bred in the epoch of Viera y Clavijo (a local naturalist and historian who lived between 1731 and 1813) on the cliff face of the Caldera de Bandama.

Several years later, Tristram (1889) observed a pair of falcons in the Barranco de la Virgen (Moya) during March 1888 with the following plumage characteristics: ". . . a much lighter russet than our ordinary Peregrine", and although he does not rule out the possibility that they were *Falco pelegrinoides*, neither does he confirm it. This same ornithologist caught a quick glimpse of another falcon between Agüimes and Tirajana.

On the other hand, Polatzek (1909) observed a bird in autumn that appeared to be a Barbary Falcon, and adds that this species could possibly nest on the cliffs

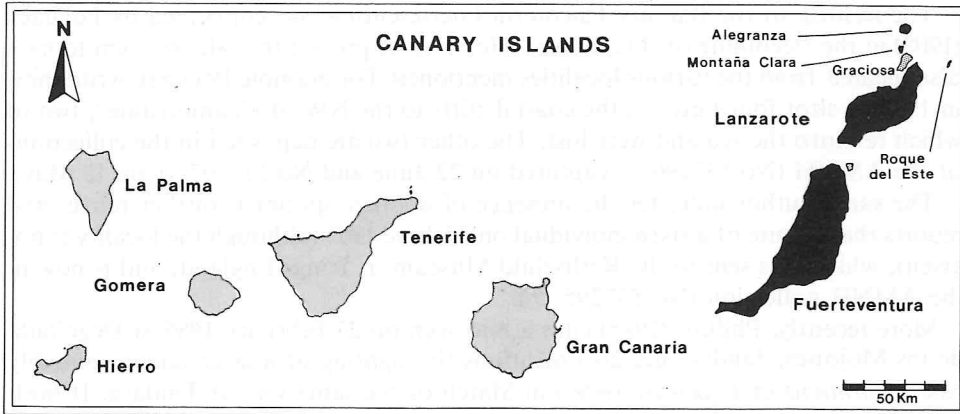


Fig. 1: Present distribution of Barbary Falcon in the Canary Islands shown in dark.

between San Nicolás and El Risco as well as at the Valle de Agaete and in the neighbourhood of Las Palmas, information which more than likely he obtained from the local inhabitants.

Thanner (1910) received only news from local people about a nest with chicks which he was unable to inspect.

Bannerman (1963) cites Barranco de Fataga and Barranco de La Aldea as nesting sites, though earlier (Bannerman 1922) he had not observed any birds on the island.

The most recent information is due to Pérez Chiscano (1969) who observed a pair of falcons at Tejeda which he supposes were *Falco pelegrinoides*.

As regards specimens present in collections, Cabrera (1893) mentions a Barbary Falcon in a museum at Las Palmas. However this could be an error, referring instead to one of the two birds seen in the same institution by Tristram (1889), who undoubtedly attributes them to *F. peregrinus* and furthermore states that they were obtained in the Barranco de La Virgen.

It is not known whether these specimens correspond to those mentioned by Thanner (1910) in the same collection, since he states that they were captured in the cathedral of Las Palmas and not in the Barranco de La Virgen. Moreover Thanner (1910) concludes that they could belong to a new species of falcon from Gran Canaria, however the skins have been lost.

Bearing in mind that Gran Canaria is an island relatively well-known ornithologically coupled with the fact that it has been highly degraded, it seems very unlikely that the Barbary Falcon still survives.

#### Fuerteventura:

The nesting of two pairs has been confirmed. One which is located on the Peninsula de Jandia, was observed on 8 May 1988 in company of two recently fledged young. The other pair which was found in the southeast of the island, was accompanied by at least one fledged chick on 13 May 1988.

The nesting of the Barbary Falcon on Fuerteventura was confirmed by Polatzek (1908) at the beginning of this century. However, at present the falcons seem to have disappeared from the various localities mentioned. For example Polatzek writes how in 1904 he shot four birds on the coastal cliffs to the NW of Chamotisfate<sup>1</sup>, two of which fell into the sea and were lost. The other two are deposited in the collections of the AMNH (No 537296 ♂ captured on 22 June and No 537297 ♀ on 13 May).

The same author indicates the presence of another specimen further north, and reports the capture of a sixth individual on 27 June 1902 (although the locality is not given), which was sent to the Rothschild Museum in Tring (England) and is now in the AMNH collection (No 537295 ♂).

More recently, Phillips (1985) cites a bird seen on 27 February 1985 at Degollada de los Mojones, Jandia, and also mentions the sighting of a large falcon (possibly *Falco biarmicus* or *F. peleginoides*) in March of the same year at Tindaya. If both observations refer to Barbary Falcons, they may either represent non-breeding birds, or may belong to breeding pairs not discovered hitherto. In this latter context it should be mentioned that suitable areas exist on the Peninsula de Jandia that still have not been prospected adequately as is the case of the small coastal cliffs of the NW coast.

#### Lanzarote:

Three pairs have been detected in the extreme NE of the island. Numerous observations of falcons have been made in this sector ever since a pair, possibly nesting, was discovered in April 1979 (Shirt 1983).

The area in question offers unbeatable conditions for the species, consisting of a mountain chain with vertical walls up to 600 m high, stretching for 14 km in the extreme north of the island.

Two of the pairs mentioned successfully reared young during the two years we prospected the area (1988–89). The first was observed together with a fully fledged chick on 13 May 1988 and with two on 15 May 1989, while the second located only 3 km away, was observed on both occasions in company of two young. In addition a nest and several resting sites were located, all containing abundant remains of *Columba livia*.

A third pair was observed during both visits though with no indication of nesting. However due to the difficulty of prospecting the area occupied, the presence of young could easily have been overlooked.

The breeding of falcons on Lanzarote was first mentioned by Polatzek (1908) with a nest on the Famara Cliffs and another on the coastal cliffs in the south. This latter reference most probably refers to the area of Los Ajaches, a site which offers the best conditions. However this locality has been highly degraded within the last few decades with a great deal of human disturbance.

As regards specimens collected on the island, Polatzek (1908) managed to capture a female on 12 June 1904 (now in the AMNH with catalogue No 537298), while Ban-

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<sup>1</sup> Chamotisfate, possibly a small hamlet inhabited up to the beginning of the century, does not figure on present day maps, although we have seen it marked on one from the nineteenth century, between Tindaya and Tefia (v. Coello 1849). The sector of coastline which Polatzek refers to is possibly the area between Esquinzo and Los Molinos.

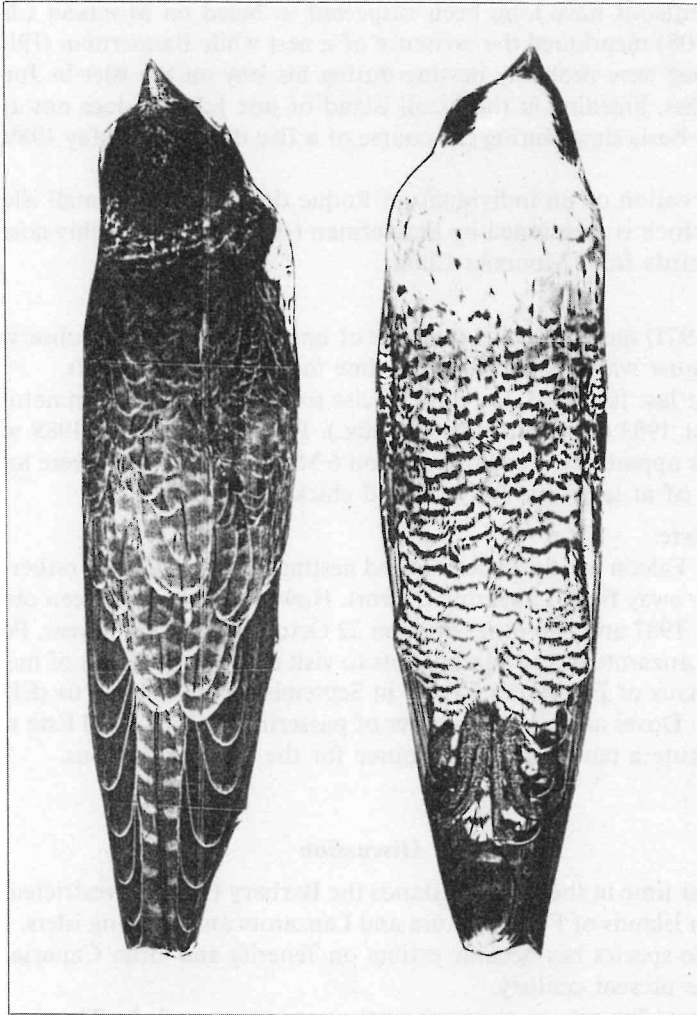


Fig. 2: Dorsal and ventral views of a Barbary Falcon female collected in Tenerife and deposited at the Museum Alexander Koenig in Bonn. (Photo courtesy Museum Koenig).

nerman (1914) mentioned that some individuals were present in a private collection at Arrecife. Moreover, this same author obtained a male that had been shot by a local ornithologist on 23 May 1913 at Teguisse while pursuing pigeons. This falcon is deposited in the ornithological section of the British Museum at Tring with the following identification: BM 1913.10.22.193.

#### Montaña Clara:

A pair was observed in March, May and October 1987, always around the steep cliffs of the NW where most probably they nest. In addition on 3 May 1990, two birds showing breeding behaviour were observed.

Barbary Falcons have long been suspected to breed on Montaña Clara. In fact Polatzek (1908) mentioned the existence of a nest while Bannerman (1914) observed two birds that were probably nesting during his stay on the islet in June 1913.

Nevertheless, breeding in this small island of just 1.3 km<sup>2</sup> does not appear to be on a regular basis since during the course of a five day visit in May 1989 no falcons were seen.

The observation of an individual on Roque del Infierno (a small islet 800 m to the north) which is mentioned by Bannerman (1914), most probably corresponds to one of the birds from Montaña Clara.

#### Alegranza:

Lovegrove (1971) mentioned the presence of one or two pairs. His observations were made in August which is not the best time to discover these birds.

Within the last few years, the only precise record is that of an immature observed on 27 August 1983 (A. Martín pers. comm.). However on 5 May 1989 we located a pair that was apparently breeding while on 6 May 1990, the birds were located again in company of at least one fully fledged chick.

#### Roque del Este:

The Barbary Falcon has never been found nesting on this islet; it is rather small (0.06 km<sup>2</sup>) and far away from Lanzarote (11 km). However, birds have been observed; one on 10 March 1987 and two other ones on 22 October of the same year. Possibly they came from Lanzarote or the nearby islets to visit the rock in search of migrant birds. During a census of Eleonora's Falcon in September 1982, one of us (EH) observed several Turtle Doves and a large number of passerines in Roque del Este which could easily constitute a temporary food source for the Barbary Falcons.

### Discussion

At the present time in the Canary Islands the Barbary Falcon is restricted exclusively to the eastern islands of Fuerteventura and Lanzarote and outlying islets. For reasons unknown, the species has become extinct on Tenerife and Gran Canaria during the course of the present century.

In the case of Tenerife on the basis of the comments made by Thanner (1910), the Barbary Falcon was limited to just a narrow sector of the south of the island that was dissected by very deep gorges (Vilaflor, Arico, Granadilla, San Miguel, Arona and Adeje). However, and in spite of the fact that this author lived in Vilaflor between 1902 and 1919, he was only able to capture two specimens.

On the other hand, it is surprising to find that none of the ornithologists who visited the island between the end of the last century and the beginning of the present observed the species. This would seem to suggest that the falcon was already very rare by this time as Bannerman (1963) points out.

The situation in Gran Canaria is equally enigmatic, since as with Tenerife, suitable habitat is present.

As regards La Gomera and El Hierro, no reliable data exist to verify its presence and although falcons have been occasionally observed, they have never been identified specifically.

While the Barbary Falcon has become extinct on Tenerife and highly probably so on Gran Canaria, it has suffered an important decline on Fuerteventura and Lanzarote, having disappeared from at least two localities since the turn of the century (Polatzek 1908). The abusive capture of specimens by the early collectors, (Polatzek alone took a total of 6 birds from both islands), must have had a negative impact on a population that presumably was not very numerous. However, the present day critical situation of this species could well be the result of the continuous impact of local hunters together with the human occupation of formerly inaccessible areas. The few remaining pairs are restricted to the most remote and steep localities of both islands where human interference is less than in any other area.

The reason why this raptor has disappeared from the central and not from the eastern islands is somewhat difficult to explain because apparently suitable habitat exists. A possible explanation could be the fact that Lanzarote and Fuerteventura are only 100 km from the African Continent, thereby receiving a more or less regular influx of individuals from Morocco. Furthermore another factor is that the eastern islands represent the most important area in the Archipelago for birds on migration, which constitute an additional food supply for the falcons and at the same time, allow the establishment of a relatively high population density. Such is the case of the northeast of Lanzarote and nearby islets complex which harbour five pairs. Three are currently located in a 14 km stretch of coastal cliffs, and possibly the population was even higher before large areas were degraded with the installation of "miradores" (panoramic view points) and other constructions.

In spite of the fact that all the pairs detected are within the boundaries of officially declared protected areas, no management programmes of any kind have been put into action. In fact the situation of the falcons in Lanzarote can be regarded as critical. The increasing uncontrolled access of four-wheel drive vehicles along the cliff top and the practise of sports such as hang gliding, are severely threatening the survival of this species.

#### Acknowledgements

We would like to express our most sincere gratitude to the "Dirección General del Medio Ambiente del Gobierno de Canarias" for totally financing this study; Dr Rainer Hutterer of the Alexander Koenig Museum in Bonn, Mr Richard Sloss of the American Museum of Natural History, New York, and Dr Peter Colston of the ornithological section, British Museum, Tring, for kindly providing information regarding the falcons in their respective collections originating from the Canary Islands; Mr Stephan Scholz for informing us of his observations of the Barbary Falcon of Fuerteventura; Dr Aurelio Martín, La Laguna University, for revising and critically commenting on the manuscript, and finally Mr Antonio Godiño, La Laguna, for allowing us to handle and photograph the birds in his private collection.

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