

BIRDS OF THE ARCHIPELAGO OF MADEIRA AND THE SELVAGENS

NEW RECORDS AND CHECKLIST

By F. ZINO¹, M. J. BISCOITO² & P. A. ZINO³

With 3 plates and 3 tables

ABSTRACT. The ornithological literature and checklists of the Archipelago of Madeira are reviewed, with special emphasis on the major works published over the years. A total of 295 species or subspecies are listed, of which 22 are recorded for the first time. Comments are made on extinct species and dubious records. A checklist indicates the presence of a specimen in the collection of the Museu Municipal do Funchal (Natural History), breeding status, original reference, and an index of abundance and/or frequency.

RESUMO. No presente trabalho é revista a bibliografia ornitológica do Arquipélago da Madeira, em especial os principais trabalhos publicados ao longo dos anos. Um total de 295 espécies ou subespécies é referenciado, das quais 22 são dadas como novas para o Arquipélago. São feitas considerações acerca das espécies extintas e dos registos considerados duvidosos. É apresentada uma lista de todas as espécies assinaladas para o Arquipélago, com indicação da existência ou não de espécime na coleção do Museu Municipal do Funchal (História Natural), situação de nidificação, referência original e abundância e/ou frequência.

INTRODUCTION

The first reference lists of the avifauna of Madeira were made by CA' DA MOSTO (1455-6), FRUCTUOSO (1590), and by SLOANE (1707). These lists are incomplete and each one mentions only those species which the author considered of interest. With the expansion of interest in Natural History during the XIX century, Madeira attracted the attention of several distinguished naturalists, amongst whom HARCOURT (1851), who was the first to produce a checklist of the avifauna of Madeira. This important work serves as the first point of reference for this paper. Another major step forward for the avifauna were the books of BANNERMAN & BANNERMAN (1923, 1965). These are without

¹ Rua do Dr. Pita, 7 - 9000 FUNCHAL, MADEIRA, PORTUGAL

² Museu Municipal do Funchal (História Natural), Rua da Mouraria, 31, 9000 FUNCHAL

³ Rua do Dr. Pita, 5 - 9000 FUNCHAL

doubt the best reference works on birds of the Archipelago of Madeira, containing much detail and excellent references. These books have been used extensively in preparing this account and contain the most recent lists of the bird species found in the Archipelago of Madeira.

Between HARCOURT'S and BANNERMAN'S notable works a series of checklists were published providing details of an ever increasing number of breeding and vagrant species. (HARTWIG, 1891; SCHMITZ, 1899, 1908; SARMENTO, 1936; MAUL, 1948; BERNSTRÖM, 1951) (Tab. I). The island's first resident ornithologist was Father Ernesto SCHMITZ who came to Madeira as chaplain to the Princess Maria Amélia Hospice in 1877 and later became rector of the Funchal Seminary. He was encouraged by W. HARTWIG to take a special interest in ornithology, and over the succeeding years produced a continuous update on the birds of Madeira, giving not only lists of species observed, but also important ecological information on the breeding species.

TABLE 1 - Increase in ornithological knowledge since 1851

Author	Year	Breeding species	Vagrants	Total
Harcourt, E.	1851	30	65	95
Hartwig, W.	1891	31	85	116
Schmitz, E.	1899	38	116	154
Schmitz, E.	1908	39	165	204
Sarmento, A.	1936	29	178	207
Maul, G. E.	1948	39	172	211
Bernström, J.	1951	44	-	-
Bannerman, D. & Bannerman, M.	1965	43	190	233
This paper	1995	42	253 *	295

(* includes 10 dubious records)

METHODS

In order to obtain the information given in the present paper, a careful search was made through the available bibliography. An added advantage was that one of the authors (P.A.Z.) speaks German and has thus been able to go through all SCHMITZ'S papers. This procedure made it possible to correct some inaccurate references in the literature. The interpretation of other authors' works has not always been easy especially when references were contradictory.

In the present paper, the birds listed have been divided into breeders, possible breeders, vagrants and extinct species.

Breeding birds are those for which there is clear *in situ* evidence of breeding.

The only true migratory birds occurring in Madeira, are sea birds, most of which breed in the archipelago and are therefore listed as breeding species. Since the archipelago is not on a true land bird migratory route, all other observations are considered as vagrants.

Some vagrants are seen on a yearly basis and one of these, the Lesser Blackback Gull, *Larus fuscus*, may actually be a true migrant. Others, such as Turnstones, *Arenaria interpres*, Grey Herons, *Ardea cinerea*, and Short-eared Owls, *Asio flammeus*, are not only seen regularly, but may spend long spells on the islands. In midwinter Teal, *Anas crecca*, and Snipe *Gallinago* spp. and *Lymnocyptes minimus*, are regular visitors.

The variety and numbers of vagrants seen is to some extent dependent on weather. A strong east wind during the Spring or Autumn migratory periods will probably produce large numbers of passerines. CÂMARA & TEIXEIRA (1980) were very lucky to have been on Selvagem Grande in October during a period of strong East winds, when they were able to record several new species for the islands. Similarly, vagrants from America tend to be seen after long periods of north-west or south-west wind. These freak weather conditions should be borne in mind when attempting to observe rare vagrants on the islands.

Possible breeders - are those species referred to as breeders by some authors and not accepted as such by others.

Extinct - birds that have been recorded as breeders, but now no longer breed in the wild were considered either globally or locally extinct.

For the purposes of this paper, records have been divided into two categories:

Good records - those for which a museum specimen exists, or there is enough evidence from an experienced observer, either descriptive or photographic.

Dubious records - those for which the above conditions are not fulfilled. Included also in this category are those species which although having been accurately recorded, natural occurrence in the wild is considered so unlikely that these may be regarded as escaped cage birds.

No regular and consistent bird observations have been made in the archipelago, except in specific areas, such as the Selvagens and to some extent the Desertas. An indication of frequency for the vagrants and abundance for the majority of breeders (true migrants included), is difficult to provide. For the purpose of this paper, regardless of the effort put into observation, which may have a marked influence in the number of records, we have used the following classification:

Breeding species:

- Very common - Species with very large populations and/or widespread throughout the islands of the archipelago.

- Common - Species with large populations and/or occurring in most parts of the islands of the archipelago.
- Rare - Species with small populations and/or occurring in specific parts of the archipelago.
- Very rare - Species with very small populations and/or restricted to small areas.

Vagrants:

- Frequent - Species occurring throughout the year and/or staying for long periods in the archipelago;
- Seasonal - Species occurring seasonally and in general for short periods;
- Occasional - Species occurring seasonally, but only during unusual weather conditions;
- Exceptional - Species recorded less than 5 times in the last 50 years;
- Only one record - Species which have been recorded only once.

The nomenclature used in this paper for non-extinct species, is that followed by CRAMP (1977 - 1994), with the exceptions of the Freiras, *Pterodroma spp.*, the Madeiran Quail, *Coturnix coturnix confisa*, and the Yellow-legged Gull *Larus cachinnans*.

The original reference (Table 3) refers to the bibliographic reference of the first record from the Archipelago.

LIST OF THE BIRDS OF MADEIRA

Species that have become globally or locally extinct.

There are 5 such species in this category, of which 4 were introduced into the wild and bred, but are now extinct. Thus, in historical times, the only truly extinct species is the Madeiran Woodpigeon, *Columba palumbus maderensis* TSCHUSI, 1904. Vagrant Woodpigeons are certainly seen on Madeira, sometimes in large numbers and they have also even been observed on the Selvagens. Although there would appear to be ample food to maintain them *in situ* in Madeira, they seldom stay for long.

The four introduced species are all game birds, Pheasant, *Phasianus colchicus* Peacock, *Pavo cristatus* and Guinea-fowl, *Numida meleagris*. All were introduced centuries ago when Madeira was one of the hunting reserves of the King of Portugal, and if we are to rely on reports written in the 18th century (SLOANE, 1707), they appear to have done very well in the wild. According to SARMENTO (1936) the Barbary Partridge, *Alectoris*

barbara, was introduced to Porto Santo in 1900. Why it died out there and not in the Canaries, where it still breeds in similar terrain (BANNERMAN, 1963), is not entirely clear.

Fossil specimens belonging to at least 8 globally extinct species, have been found in the Archipelago (PIEPER *in litt.*) and are currently under study by this author who will publish an account on this subject in a separate paper.

Dubious records

There are 10 species listed under this category. They have certainly been reported and while not accepting the observations as clearcut it is felt they should be borne in mind.

Black-throated Diver, *Gavia arctica* (LINNAEUS, 1758)

The authors agree with the comments made by BANNERMAN & BANNERMAN (1965:173) regarding SARMENTO (1936) who gives this bird in his check-list and is inclined to make statements without references. It is felt that this bird should remain as dubious.

Soft-plumaged Petrel, *Pterodroma mollis* (GOULD, 1844)

This record is based on an observation of 2 birds with a complete breast band, observed in flight (JEPSON & ZONFRILLO, 1988). The authors of this paper have only handled skins of *Pterodroma mollis*, but have handled over 400 *Pterodroma feae* in the field and inspected the breast band on each and every one. There is very considerable variation in the band, but a complete band has never been observed. The smallest gap observed is about 1cm. It is possible that a fast-moving bird, observed from a moving boat, may appear to possess a complete band. An unambiguous photographic record or a specimen in hand is required before this record can be accepted.

Red-footed Falcon, *Falco vespertinus* LINNAEUS, 1766

SARMENTO (1936) includes this bird in his check-list, but, as was his custom, did not go into further detail. BANNERMAN & BANNERMAN (1965) mentions a doubtful more recent record by a "not very experienced ornithologist". There is a further observation made in 1993, again by an inexperienced ornithologist. As always in such cases it would be good to have either a clear photograph, or a bird in hand.

Long-eared Owl, *Asio otus* (LINNAEUS, 1758)

This bird is a resident of the Canaries and the Azores (BANNERMAN, 1963, BANNERMAN & BANNERMAN, 1966), but it's inclusion in this list is based on one stuffed specimen seen in Madeira by GODMAN (1872). Schmitz never recorded one and whilst listed by SARMENTO (1936) and MAUL (1948), neither gives a reference.

Blue Rock Thrush, *Monticola solitarius* (LINNAEUS, 1758)

TITIAN RAMSAY PEALE (POESCH, 1961) lists this as a bird observed in Madeira on the 18th September 1838, whilst taking part in the Wilkes Expedition of that year (PEALE's diaries of 1838 were only published in the United States in 1961 (POESCH, 1961)). While BANNERMAN & BANNERMAN (1965) considers it a possible vagrant because it is migratory on the whole Mediterranean front, there have been no records since that date.

Fan-tailed Warbler, *Cisticola juncidis* (RAFINESQUE, 1810)

SCHMITZ (1909) lists the Fan-tailed Warbler, *Cisticola juncidis*, as a breeding species on rather dubious grounds and it also appears in BERNSTRÖM (1951). BANNERMAN & BANNERMAN (1965) do not accept this record and do not even accept the bird as a vagrant, as the evidence is all based on identification of a clutch of eggs. It was decided to accept it as a "dubious record".

Carrion Crow, *Corvus corone* LINNAEUS, 1758

Though listed in various check-lists, all records revert back to the observations of FORSTER (1777) who was with Capt. Cook when he called in at Madeira in 1772. According to BANNERMAN & BANNERMAN (1965) this bird, together with several other unlikely birds observed, were all in a cage owned by an Englishman.

Brown-necked Raven, *Corvus ruficollis* LESSON, 1831

BANNERMAN & BANNERMAN (1965), gives full details of this species. He dedicates no less than three pages to this one dubious record and concludes that it should be deleted from the list of Madeiran birds. Considering the existence of a specimen (Type specimen of *Corvus leptonyx* PEALE, 1838 (= *C. ruficollis*)) in the collections of the Smithsonian Institution, Washington, collected by PEALE in 1838 "within a short distance of Funchal" (BANNERMAN & BANNERMAN, 1965), and a description of another observation given by SCHMITZ (1899), it was decided to maintain this species as a dubious record.

Black-winged Bishop, *Euplectes hordeaceus* (LINNAEUS, 1758)

This species was recorded by SCHMITZ (1900) who saw a bird which had been captured in São Gonçalo, Madeira. According to BANNERMAN (1953) this tropical African species ranges from Senegal and Gambia to the White Nile. Most certainly this was an escaped cage bird. Its occurrence as vagrant in Madeira can be ruled out entirely.

Purple Glossy Starling, *Lamprotornis cf. purpureus* (MÜLLER)

A specimen belonging to this genus was seen and photographed by MANUELA ARANHA, at Penha de França, Funchal, on 15.12.1994. The comments made for the above mentioned species also apply to this one.

Species recorded here for the first time from the Archipelago of Madeira, including the Selvagens

Shag, *Phalacrocorax aristotelis* (LINNAEUS, 1761)

A single bird was observed (FZ & TED GERRARD) in Porto Santo on 16.04.1994. It was sitting on some rocks off the beach just outside the harbour and had apparently been there for some days. Other observations have been made of birds in flight and at sea, but one cannot be absolutely sure that in those cases they were not Cormorants.

Ring-necked Duck, *Aythya collaris* (DONOVAN, 1809)

There is a specimen in the Museu Municipal do Funchal (MMF 22266). It was collected on 17.10.1967 by ARSÉNIO DE GOUVEIA at the mouth of Ribeira da Janela, Madeira. Identification was confirmed by ANDY SWASH.

This is a rare vagrant from North America, and there are records from the Azores and various European countries (CRAMP, 1977). This is one of those cases in which, no firm identification has been made and without a specimen it would have been impossible to reach a conclusion.

Scaup, *Aythya marila* (LINNAEUS, 1761)

This duck winters much further North (CRAMP, 1977). There is one record of a single bird seen over a period of several days in late November, 1985, in the river bed at São Lázaro (Funchal Harbour). It was photographed by one of the authors (MJB) on 28.11.1985 and the identification confirmed from the photograph.

Surf Scoter, *Melanitta perspicillata* (LINNAEUS, 1758)

This is another North American vagrant. The specimen in the Museu Municipal do Funchal (MMF 24298) was taken alive on 4.11.1988 by JOÃO NÓBREGA inside the Funchal marina. Taking into account the distribution given by CRAMP (1977), this would appear to be the most southern record of this species in the Western Palearctic.

Peregrine Falcon, *Falco peregrinus* TUNSTALL, 1771

A bird was observed on Selvagem Grande on 19.2.1990 (FZ & TED GERRARD). Soon after a single bird was observed in the garden of Quinta da Vista Alegre, Funchal, Madeira (FZ).

American Purple Gallinule, *Porphyryla martinica* (LINNAEUS, 1766)

A specimen of this rare American vagrant in the Museu Municipal do Funchal (MMF22913) was found on 8.11.1969 in Funchal harbour. A second specimen was caught alive in Parque de Santa Catarina, Funchal, on 2.1.1976.

Crane, *Grus grus* (LINNAEUS, 1758)

A single record of this bird was made on 15.12.1987 by ADAM BLANDY at Quinta do Palheiro Ferreiro, Funchal. On 17.12.1987 it was observed by two of the authors (PAZ & MJB) and photographed. The bird remained in the area for ten days before moving off.

Semipalmated Sandpiper, *Calidris pusilla* (LINNAEUS, 1766)

HARALD PIEPER (pers. comm.) reported seeing two of these rare American vagrants on 09.09.1988 at São Lázaro, Funchal. At the end of the same month ANDY SWASH (pers. comm.) reported a single bird on 30.09.1988.

White-rumped Sandpiper, *Calidris fuscicollis* (VIEILLOT, 1819)

The record is based on a male specimen (MMF23320) in the Museu Municipal do Funchal collection. This American vagrant was taken on the river bed at São Lázaro, Funchal at the same time as another rare North American vagrant, a Western Sandpiper, on 1.11.1979, by one of the authors (PAZ).

Western Sandpiper, *Calidris mauri* CABANIS, 1856

This species was recorded from Madeira at the same time and locality as for the White-rumped Sandpiper. A female specimen (MMF23321) is in the collection of the Museu Municipal do Funchal. Both this and the above mentioned specimen were identified by J. R. MATHER in 1979 and reconfirmed by A. JENSEN in 1981.

Upland Sandpiper, *Bartramia longicauda* (BECHSTEIN, 1812)

Yet another American vagrant, represented in the Museu Municipal do Funchal by two specimens (MMF23018 & MMF23019A) shot by ENG. PEDRO PIRES at Caniço de Baixo on 15.10.1973 and 12.11.1973.

Lesser Yellowlegs, *Tringa flavipes* (GMELIN, 1789)

We owe this record of another American vagrant to HARALD PIEPER who photographed one at the pool at Lugar de Baixo on 11.09.1985.

Long-tailed Skua, *Stercorarius longicaudus* VIEILLOT, 1819

One specimen was observed near Baixa de Nordeste, Porto Santo, in May, 1990 by RODDY HAYS. This record does not come as a surprise as there are more records in neighbouring waters (BOURNE, *in litt.*).

Little Gull, *Larus minutus* PALLAS, 1776

This gull stayed around the Funchal waterfront for several days. It was first spotted by ARNE JENSEN on 13.1.1981. He drew it to the attention of one of the authors (PAZ) who was able to observe it on various occasions.

Sabine's Gull, *Larus sabini* SABINE, 1819 (= *Xema sabini*)

One immature bird of this species has been reported from Funchal Harbour on 9.01.94 by JOHN BURTON. This northern breeding species migrates transequatorially, and has been observed as far west as the Azores (CRAMP, 1983).

Caspian Tern, *Sterna caspia* PALLAS, 1770

One specimen was observed and photographed on the 30.7.1987, at Porto Santo by GRAHAM ROWE who was undertaking a seabird study there at the time.

Short-toed Lark, *Calandrella brachydactyla* (LEISLER, 1814)

This record is based on a photograph of two birds at Caniçal taken by one of the authors (FZ) on 08.03.1987 and identified from the photograph by CHRISTIAN JOUANIN.

Red-throated Pipit, *Anthus cervinus* (PALLAS, 1811)

This is based on one observation by RAFAEL WINKLER, Curator of Birds at the Natural History Museum of Basel. He reported seeing this bird at Ponta de São Lourenço to G. E. MAUL, then Curator of the Museu Municipal do Funchal. The observation was made on the 2.1.1984.

Wood Thrush, *Hylocichla mustelina* (GMELIN, 1789)

This North American vagrant was reported from Porto Santo by JILL and SIMON WARWICK on 18.01.1986. Unfortunately they did not take photographs, but they are both experienced observers and have submitted a full description.

Ring Ouzel, *Turdus torquatus* LINNAEUS, 1758

This record is based on a specimen in the Museu Municipal do Funchal (MMF 25585). It was shot on Paúl da Serra by JOÃO JOSÉ S. S. FERNANDES in October, 1993.

American Redstart, *Setophaga ruticilla* (LINNAEUS, 1758)

This is included on the basis of one observation on Selvagem Grande. On 2.10.1981, one of the authors (PAZ) was on Selvagem Grande with R. MORGAN, an experienced American ornithologist. They observed this unusual bird which was identified by the latter.

Red-breasted Flycatcher, *Ficedula parva* (BECHSTEIN, 1794)

This is based on one observation by MAJOR PICKERING at his home Casa Velha, at Caminho Velho da Ajuda, in Funchal on 24.4.1974. He was a good observer and the record has been accepted. On 19.10.1973 MIKE HARRIS observed a bird of this species at sea, 10 miles north of Madeira.

Breeding species

Forty two breeding species or subspecies are accepted (Table 2).

Possible breeding species

Storm Petrel, *Hydrobates pelagicus* (LINNAEUS, 1758)

BANNERMAN & BANNERMAN (1965) give the Storm Petrel, *Hydrobates pelagicus*, as a breeder and the only evidence they have is from eggs now at the British Museum and collected by ROBERT FRERE, with no other data! Now that there is evidence of this bird from Selvagem Grande (JENSEN, 1981) and since it is known to nest in the Canaries, well south of Madeira (BANNERMAN, 1963) bearing in mind that its main breeding grounds are north of Madeira (CRAMP, 1977) it is fair to list it not only as a vagrant, but also as a possible breeder.

Swinhoe's Storm-petrel, *Oceanodroma monorhis* (SWINHOE, 1867)

There have been various records of this species from Selvagem Grande (JAMES & ROBERTSON, 1985; BRETAGNOLLE *et al.*, 1991; CUBITT *et al.*, 1992). Some of the birds were taken from inside stone walls, the typical nesting ground of *Oceanodroma castro*. Two birds have been handled by one of us (FZ). One of these was caught in front of a collapsed wall on three occasions, 1993, 1994, 1995. On each occasion it had a vascular broodpatch and we feel that there is a high probability of it breeding in this wall.

Quail, *Coturnix coturnix coturnix* (LINNAEUS, 1758)

Little is known about the Quail population except that in recent years it has diminished considerably. We follow BANNERMAN & BANNERMAN (1965) and consider the Madeiran Quail, *C. c. confisa* HARTERT, 1917 as the breeding subspecies. Whilst good conditions exist for breeding of the nominate subspecies this remains to be proved.

Sandwich Tern, *Sterna sandvicensis* LATHAM, 1787

This is yet another "breeder" which caused disagreement between SCHMITZ and BANNERMAN. SCHMITZ (1897) gives the Sandwich Tern, *Sterna sandvicensis*, as a breeder on the grounds of two separate observations. Whilst BERNSTRÖM (1951) accepts this, BANNERMAN & BANNERMAN (1965) do not. Since there is no recent evidence of breeding, it was decided to consider this species only as a vagrant and possible breeder.

Mistle Thrush, *Turdus viscivorus* LINNAEUS, 1758

This species is observed regularly within the Ecological Park of Funchal (Montado do Barreiro, above Funchal). Adults carrying food have been observed as have young birds. Since no nest has been found, it has not been established as a breeding species.

Fan-tailed Warbler, *Cisticola juncidis* (RAFINESQUE, 1810)

This species is listed as a dubious record. Since a clutch of eggs from Porto Santo is the origin of this record (SCHMITZ, 1909), its inclusion in this category is justified.

TABLE 2

List of the breeding birds of the Archipelago of Madeira, including the Selvagens.

<i>Pterodroma madeira</i> MATHEWS, 1934 *	Zino's Petrel <i>Freira da Madeira</i>
<i>Pterodroma fave</i> (SALVADORI, 1899)	Fa's Petrel <i>Freira do Bugio</i>
<i>Bulweria bulweri</i> (JARDINE & SELBY, 1828)	Bulwer's Petrel <i>Alma-negra</i>
<i>Calonectris diomedea borealis</i> (CORY, 1881)	Cory's Shearwater <i>Cagarra</i>
<i>Puffinus puffinus puffinus</i> (BRÜNNICH, 1764)	Manx Shearwater <i>Patagarro</i>
<i>Puffinus assimilis baroli</i> (BONAPARTE, 1857)	Little (Madeiran) Shearwater <i>Pintalinho</i>
<i>Pelagodroma marina hypoleuca</i> (WEBB, BERTH. & MOUQ. TANDON, 1841)	White-faced Storm-petrel <i>Calcanhar</i>
<i>Oceanodroma castro</i> (HARCOURT, 1851)	Madeiran Storm-petrel <i>Rogue-de-Castro</i>
<i>Accipiter nisus</i> (LINNAEUS, 1758)	Sparrowhawk <i>Fura-bardos</i>
<i>Buteo buteo buteo</i> (LINNAEUS, 1758)	Madeiran Buzzard <i>Manta</i>
<i>Falco tinnunculus canariensis</i> (KOENIG, 1890)	Canarian Kestrel <i>Francelho</i>
<i>Alectoris rufa</i> (LINNAEUS, 1758)	Reg-legged Partridge <i>Perdiz</i>
<i>Coturnix coturnix confisa</i> HARTERT, 1917 **	Madeiran Quail <i>Codorniz</i>
<i>Charadrius dubius cuniculus</i> GMELIN, 1789	Little Ringed Plover <i>Borrelho</i>
<i>Charadrius alexandrinus</i> LINNAEUS, 1758	Kentish Plover <i>Rolinha da Praia</i>
<i>Scolopax rusticola</i> LINNAEUS, 1758	Woodcock <i>Galinholo</i>
<i>Larus cachinnans</i> PALLAS, 1826	Yellow-legged Gull <i>Gaivota</i>
<i>Sterna dougallii</i> MONTAGU, 1813	Roseate Tern <i>Garajau rosado</i>
<i>Sterna hirundo</i> LINNAEUS, 1758	Common Tern <i>Garajau</i>
<i>Sterna fuscata</i> LINNAEUS, 1766	Sooty Tern <i>No Portuguese common name</i>
<i>Columba livia</i> GMELIN, 1789	Rock Dove <i>Pombo da rocha</i>

<i>Columba trocaz</i> HEINEKEN, 1829 *	Long-toed Pigeon <i>Pombo trocaz</i>
<i>Streptopelia turtur</i> LINNAEUS, 1758	Turtle Dove <i>Rola</i>
<i>Tyto alba schmitzi</i> HARTERT, 1900 **	Barn Owl <i>Coruja</i>
<i>Apus unicolor</i> JARDINE, 1830	Plain Swift <i>Andorinha</i>
<i>Apus pallidus brehmorum</i> HARTERT, 1901	Pallid Swift <i>Andorinha</i>
<i>Upupa epops</i> LINNAEUS, 1758	Hoopoe <i>Poupa</i>
<i>Anthus berthelotii berthelotii</i> BOLLE, 1862	Berthelot's Pipit <i>Corre-caminhos</i>
<i>Anthus berthelotii madeirensis</i> HARTERT, 1905 **	Madeiran Berthelot's Pipit <i>Corre-caminhos da Madeira</i>
<i>Motacilla cinerea schmitzi</i> TSCHUSI, 1900 **	Grey Wagtail <i>Lavandeira</i>
<i>Eriothacus rubecula rubecula</i> (LINNAEUS, 1758)	Robin <i>Papinho</i>
<i>Turdus merula cabreriae</i> HARTERT, 1901	Blackbird <i>Melro preto</i>
<i>Sylvia conspicillata orbitalis</i> (WAHLBERG, 1854)	Spectacled Warbler <i>Cigarrinho</i>
<i>Sylvia atricapilla heinekeni</i> (JARDINE, 1830)	Blackcap <i>Toutinegra</i>
<i>Regulus ignicapillus madeirensis</i> HARCOURT, 1851	Firecrest <i>Bis-bis</i>
<i>Passer hispaniolensis</i> TEMMINCK, 1820	Spanish Sparrow <i>Pardal espanhol</i>
<i>Petronia petronia</i> (LINNAEUS, 1766)	Rock Sparrow <i>Pardal da terra</i>
<i>Fringilla coelebs maderensis</i> SHARPE, 1888 **	Madeiran Chaffinch <i>Tentilhão</i>
<i>Serinus canaria</i> (LINNAEUS, 1758)	Canary <i>Canário da terra</i>
<i>Carduelis chloris</i> (LINNAEUS, 1758)	Greenfinch <i>Verdilhão</i>
<i>Carduelis carduelis parva</i> TSCHUSI, 1901	Goldfinch <i>Pintassilgo</i>
<i>Carduelis cannabina guentheri</i> WOLTERS, 1953	Linnet <i>Pintaroxo</i>

(*endemic species; ** endemic subspecies).

TABLE 3
Checklist of the birds of the Archipelago of Madeira, including the Selvagens.

Scientific name	English name	Specimen in MMF	Breeder	Original reference	Frequency or abundance
Non-Passerines					
GAVIIDAE					
<i>Gavia arctica</i>	Black-throated Diver	N	N	SARMENTO, 1936	Dubious record
<i>Gavia immer</i>	Great Northern Diver	Y	N	HARCOURT, 1851	Exceptional
PODICIPEDIDAE					
<i>Tachybaptus ruficollis</i>	Little Grebe	Y	N	MAUL, 1948	Exceptional
<i>Podiceps auritus</i>	Slavonian Grebe	Y	N	SCHMITZ, 1899	Exceptional
<i>Podiceps nigricollis</i>	Black-necked Grebe	N	N	SCHMITZ, 1908	Exceptional
PROCELLARIIDAE					
<i>Pterodroma feae</i>	Fea's Petrel	Y	Y	DALGLEISH, 1891	Very Rare
<i>Pterodroma madeira</i>	Zino's Petrel - Freira	Y	Y	SCHMITZ, 1905	Very rare
<i>Pterodroma mollis</i>	Soft-plumaged Petrel	N	N	JEPSON & ZONFRILLO, 1988	Dubious record
<i>Bulweria bulwerii</i>	Bulwer's Petrel	Y	Y	JARDINE & SELBY, 1828	Very common
<i>Calonectris diomedea borealis</i>	Cory's Shearwater	Y	Y	HARCOURT, 1851	Very common
<i>Puffinus gravis</i>	Great Shearwater	N	N	SARMENTO, 1936	Occasional
<i>Puffinus puffinus puffinus</i>	Manx Shearwater	Y	Y	HARCOURT, 1851	Very common
<i>Puffinus puffinus mauretanicus</i>	Balearic Shearwater	N	N	JEPSON & ZONFRILLO, 1988	Only 1 record
<i>Puffinus assimilis baroli</i>	Little (Madeiran) Shearwater	Y	Y	HARCOURT, 1851	Rare
HYDROBATIDAE					
<i>Oceanites oceanicus</i>	Wilson's Storm-petrel	N	N	DALGLEISH, 1890	Exceptional
<i>Pelagodroma marina hypoleuca</i>	White-faced Storm-petrel	Y	Y	OGILVIE-GRANT, 1896	Very common**
<i>Hydrobates pelagicus</i>	Storm Petrel	Y	?	BANNERMAN, 1914	Exceptional
<i>Oceanodroma leucorhoa</i>	Leach's Storm-petrel	N	N	HARCOURT, 1851	Exceptional
<i>Oceanodroma monorhis</i>	Swinhoe's Storm-petrel	N	?	JAMES & ROBERTSON, 1985	Exceptional

Scientific name	English name	Specimen in MMF	Breeder	Original reference	Frequency or abundance
<i>Oceanodroma castro</i>	Madeiran Storm-petrel	Y	Y	HARCOURT, 1851	Very common
PHAETHONTIDAE					
<i>Phaethon aethereus</i>	Red-billed Tropicbird	Y	N	SCHMITZ, 1894	Exceptional
SULIDAE					
<i>Morus bassanus</i>	Gannet	Y	N	SCHMITZ, 1899	Occasional
PHALACROCORACIDAE					
<i>Phalacrocorax carbo</i>	Cormorant	Y	N	SCHMITZ, 1897	Occasional
<i>Phalacrocorax aristotelis</i>	Shag	N	N	New record	Occasional
ARDEIDAE					
<i>Botaurus stellaris</i>	Bittern	Y	N	HARCOURT, 1851	Occasional
<i>Ixobrychus minutus</i>	Little Bittern	Y	N	HARCOURT, 1851	Occasional
<i>Nycticorax nycticorax</i>	Night Heron	Y	N	HARCOURT, 1851	Occasional
<i>Ardeola ralloides</i>	Squacco Heron	Y	N	SCHMITZ, 1899	Exceptional
<i>Bubulcus ibis</i>	Cattle Egret	Y	N	SCHMITZ, 1899	Occasional
<i>Egretta gularis</i>	Western Reef Heron	N	N	SCHMITZ, 1903	Only 1 record
<i>Egretta garzetta</i>	Little Egret	Y	N	SCHMITZ, 1899	Frequent
<i>Ardea cinerea</i>	Grey Heron	Y	N	HARCOURT, 1851	Frequent
<i>Ardea purpurea</i>	Purple Heron	Y	N	HARCOURT, 1851	Occasional
CICONIIDAE					
<i>Ciconia nigra</i>	Black Stork	N	N	HARCOURT, 1851	Only 1 record
<i>Ciconia ciconia</i>	White Stork	Y	N	SCHMITZ, 1899	Exceptional
THRESKIORNITHIDAE					
<i>Plegadis falcinellus</i>	Glossy Ibis	Y	N	SCHMITZ, 1899	Exceptional
<i>Platalea leucorodia</i>	Spoonbill	Y	N	SCHMITZ, 1896	Exceptional

(* Recorded only from the Selvagens; ** Breeds only in the Selvagens. Breeding species in bold; N= No; Y= Yes)

TABLE 3 - (Cont.)

Scientific name	English name	Specimen in MMF	Breeder	Original reference	Frequency or abundance
ANATIDAE					
<i>Anser fabalis</i>	Bean Goose	N	N	HARCOURT, 1851	Exceptional
<i>Anser brachyrhynchus</i>	Pink-footed Goose	Y	N	BANNERMAN & BANNERMAN, 1965	Exceptional
<i>Anser albifrons</i>	White-fronted Goose	Y	N	SCHMITZ, 1908	Exceptional
<i>Anser anser</i>	Grey-lag Goose	Y	N	SCHMITZ, 1896A	Exceptional
<i>Tadorna ferruginea</i>	Ruddy Shelduck	Y	N	MAUL, 1948	Exceptional
<i>Tadorna tadorna</i>	Shelduck	Y	N	MAUL, 1948	Only 1 record
<i>Anas penelope</i>	Wigeon	N	N	HARCOURT, 1851	Exceptional
<i>Anas crecca</i>	Teal	Y	N	HARCOURT, 1851	Seasonal
<i>Anas platyrhynchos</i>	Mallard	Y	N	HARCOURT, 1851	Occasional
<i>Anas acuta</i>	Pintail	Y	N	SCHMITZ, 1896	Exceptional
<i>Anas clypeata</i>	Shoveler	N	N	SCHMITZ, 1905	Only 1 record
<i>Marmaronetta angustirostris</i>	Marbled Teal	N	N	SCHMITZ, 1899	Only 1 record
<i>Aythya ferina</i>	Pochard	N	N	SCHMITZ, 1905	Exceptional
<i>Aythya collaris</i>	Ring-necked Duck	Y	N	New record	Only 1 record
<i>Aythya fuligula</i>	Tufted Duck	N	N	SCHMITZ, 1908	Only 1 record
<i>Aythya marila</i>	Scaup	N	N	New record	Only 1 record
<i>Clangula hyemalis</i>	Long-tailed Duck	N	N	SCHMITZ, 1909	Only 1 record
<i>Melanitta nigra</i>	Common Scoter	Y	N	SCHMITZ, 1899	Exceptional
<i>Melanitta perspicillata</i>	Surf Scoter	Y	N	New record	Only 1 record
<i>Bucephala clangula</i>	Goldeneye	?	N	SARMENTO, 1936	Exceptional
<i>Mergus serrator</i>	Red-breasted Merganser	N	N	SCHMITZ, 1908A	Only 1 record
ACCIPITRIDAE					
<i>Pernis apivorus</i>	Honey Buzzard	N	N	SWASH, 1986	Only 1 record

Scientific name	English name	Specimen in MMF	Breeder	Original reference	Frequency or abundance
<i>Milvus migrans</i>	Black Kite	N	N	FOLMAR & ORTVAD, 1992	Only 1 record
<i>Milvus milvus</i>	Red Kite	N	N	SARMENTO, 1936	Exceptional
<i>Neophron percnopterus</i>	Egyptian Vulture	N	N	HARCOURT, 1851	Exceptional
<i>Circus aeruginosus</i>	Marsh Harrier	N	N	SILVEIRA & SCHMITZ, 1910	Exceptional
<i>Circus pygargus</i>	Montagu's Harrier	Y	N	MAUL, 1948	Exceptional
<i>Accipiter nisus</i>	Sparrowhawk	Y	Y	FORSTER, 1777	Rare
<i>Buteo buteo buteo</i>	Madeiran Buzzard	Y	Y	HARCOURT, 1851	Very common
<i>Buteo rufinus</i>	Long-legged Buzzard	N	N	MOUGIN <i>et al.</i> , 1987	Only 1 record
PANDIONIDAE					
<i>Pandion haliaetus</i>	Osprey	N	N	SCHMITZ, 1903	Exceptional
FALCONIDAE					
<i>Falco naumanni</i>	Lesser Kestrel	N	N	SWASH, 1986	Exceptional
<i>Falco tinnunculus canariensis</i>	Canarian Kestrel	Y	Y	HARCOURT, 1851	Very common
<i>Falco tinnunculus tinnunculus</i>	European Kestrel	Y	N	BANNERMAN & BANNERMAN, 1965	Exceptional
<i>Falco vespertinus</i>	Red-footed Falcon	N	N	SARMENTO, 1936	Dubious record
<i>Falco columbarius</i>	Merlin	N	N	SARMENTO, 1906	Only 1 record
<i>Falco subbuteo</i>	Hobby	Y	N	GODMAN, 1872	Exceptional
<i>Falco eleonorae</i>	Eleonora's Falcon	N	N	MOUGIN <i>et al.</i> , 1987	Exceptional
<i>Falco peregrinus</i>	Peregrine Falcon	N	N	New record	Exceptional
<i>Falco pelegrinoides</i>	Barbary Falcon	N	N	MOUGIN <i>et al.</i> , 1987	Exceptional
PHASIANIDAE					
<i>Alectoris rufa</i>	Reg-legged Partridge	Y	Y	SLOANE, 1707	Common
<i>Alectoris barbara</i>	Barbary Partridge	N	N	SARMENTO, 1936	Extinct
<i>Coturnix coturnix confisa</i>	Madeiran Quail	Y	Y	HARCOURT, 1851	Rare

(* Recorded only from the Selvagens; ** Breeds only in the Selvagens. Breeding species in bold; N= No; Y= Yes)

TABLE 3 - (Cont.)

Scientific name	English name	Specimen in MMF	Breeder	Original reference	Frequency or abundance
<i>Coturnix coturnix coturnix</i>	Quail	Y	?	BANNERMAN & BANNERMAN, 1965	Occasional
<i>Phasianus colchicus</i>	Pheasant	N	N	SLOANE, 1707	Extinct
<i>Pavo cristatus</i>	Peacock	N	N	SLOANE, 1707	Extinct
NUMIDIDAE					
<i>Numida meleagris</i>	Helmeted Guineafowl	N	N	SARMENTO, 1936	Extinct
RALLIDAE					
<i>Rallus aquaticus</i>	Water Rail	N	N	NORONHA & SCHMITZ, 1904	Only 1 record
<i>Porzana porzana</i>	Spotted Crane	Y	N	SCHMITZ, 1899	Exceptional
<i>Porzana parva</i>	Little Crane	N	N	SARMENTO, 1936	Only 1 record
<i>Porzana pusilla</i>	Baillon's Crane	N	N	HARCOURT, 1851	Exceptional
<i>Limnecorax flavirostris</i>	Black Crane	N	N	SCHMITZ, 1896A	Only 1 record
<i>Crex crex</i>	Corn Crane	Y	N	HARCOURT, 1851	Exceptional
<i>Gallinula chloropus</i>	Moorhen	Y	N	HARCOURT, 1851	Occasional
<i>Porphyryla alleni</i>	Allen's Gallinule	Y	N	SCHMITZ, 1908	Exceptional
<i>Porphyryla martinica</i>	American Purple Gallinule	Y	N	New record	Exceptional
<i>Porphyrio porphyrio</i>	Purple Gallinule	N	N	SARMENTO, 1936	Occasional
<i>Fulica atra</i>	Coot	Y	N	HARCOURT, 1851	Seasonal
GRUIDAE					
<i>Grus grus</i>	Crane	N	N	New record	Only 1 record
OTIDIDAE					
<i>Tetrax tetrax</i>	Little Bustard	N	N	SCHMITZ, 1899	Exceptional
HAEMATOPODIDAE					
<i>Haematopus ostralegus</i>	Oystercatcher	Y	N	NORONHA & SCHMITZ, 1902	Exceptional
<i>Haematopus moquini</i>	African Black Oystercatcher	N	N	SARMENTO, 1936	Only 1 record

Scientific name	English name	Specimen in MMF	Breeder	Original reference	Frequency or abundance
RECURVIROSTRIDAE					
<i>Himantopus himantopus</i>	Black-winged Stilt	Y	N	SCHMITZ, 1899	Exceptional
<i>Recurvirostra avosetta</i>	Avocet	Y	N	BANNERMAN & BANNERMAN, 1965	Exceptional
BURHINIDAE					
<i>Burhinus oedinenus</i>	Stone-curlew	Y	N	HARCOURT, 1851	Exceptional
GLAREOLIDAE					
<i>Cursorius cursor</i>	Cream-coloured Courser	N	N	SCHMITZ, 1903	Only 1 record
<i>Glareola pratincola</i>	Collared Pratincole	Y	N	SARMENTO, 1936	Exceptional
CHARADRIIDAE					
<i>Charadrius dubius curonicus</i>	Little Ringed Plover	N	Y	OGILVIE-GRANT, 1896	Very Rare
<i>Charadrius hiaticula</i>	Ringed Plover	Y	N	HARCOURT, 1851	Occasional
<i>Charadrius vociferus</i>	Killdeer	N	N	JOHNSON, 1885	Only 1 record
<i>Charadrius alexandrinus</i>	Kentish Plover	Y	Y	SCHMITZ, 1894	Rare
<i>Charadrius morinellus</i>	Dotterel	Y	N	MAUL, 1948	Exceptional
<i>Pluvialis apricaria</i>	Golden Plover	Y	N	HARCOURT, 1851	Exceptional
<i>Pluvialis squatarola</i>	Grey Plover	Y	N	SCHMITZ, 1899	Exceptional
<i>Vanellus vanellus</i>	Lapwing	Y	N	HARCOURT, 1851	Seasonal
SCOLOPACIDAE					
<i>Calidris canutus</i>	Knot	Y	N	HARCOURT, 1851	Seasonal
<i>Calidris alba</i>	Sanderling	Y	N	HARCOURT, 1851	Seasonal
<i>Calidris pusilla</i>	Semipalmated Sandpiper	N	N	New record	Exceptional
<i>Calidris mauri</i>	Western Sandpiper	Y	N	New record	Exceptional
<i>Calidris minuta</i>	Little Stint	N	N	BANNERMAN & BANNERMAN, 1965	Exceptional
<i>Calidris fuscicollis</i>	White-rumped Sandpiper	Y	N	New record	Only 1 record

(* Recorded only from the Selvagens; ** Breeds only in the Selvagens. Breeding species in bold; N= No; Y= Yes)

TABLE 3 - (Cont.)

Scientific name	English name	Specimen in MMF	Breeder	Original reference	Frequency or abundance
<i>Calidris melanotos</i>	Pectoral Sandpiper	N	N	BANNERMAN & BANNERMAN, 1965	Only 1 record
<i>Calidris ferruginea</i>	Curlew Sandpiper	Y	N	BANNERMAN & BANNERMAN, 1965	Occasional
<i>Calidris maritima</i>	Purple Sandpiper	N	N	SILVEIRA & SCHMITZ, 1910	Exceptional
<i>Calidris alpina</i>	Dunlin	Y	N	HARCOURT, 1851	Seasonal
<i>Philomachus pugnax</i>	Ruff	Y	N	HARCOURT, 1851	Occasional
<i>Lymnocyrtus minimus</i>	Jack Snipe	Y	N	SCHMITZ, 1899	Occasional
<i>Gallinago gallinago</i>	Snipe	Y	N	HARCOURT, 1851	Seasonal
<i>Gallinago media</i>	Great Snipe	N	N	HARCOURT, 1851	Occasional
<i>Limnodromus sp.</i>	Dowitcher	N	N	JENSEN, 1981	Only 1 record*
<i>Scolopax rusticola</i>	Woodcock	Y	Y	HEINEKEN, 1832	Common
<i>Limosa limosa</i>	Black-tailed Godwit	Y	N	HARCOURT, 1851	Occasional
<i>Limosa lapponica</i>	Bar-tailed Godwit	Y	N	SCHMITZ, 1897A	Occasional
<i>Numenius phaeopus</i>	Whimbrel	Y	N	HARCOURT, 1851	Seasonal
<i>Numenius arquatus</i>	Curlew	Y	N	HARCOURT, 1851	Occasional
<i>Bartramia longicauda</i>	Upland Sandpiper	Y	N	New record	Exceptional
<i>Tringa erythropus</i>	Spotted Redshank	Y	N	MEINERTZHAGEN, 1925	Exceptional
<i>Tringa totanus</i>	Redshank	Y	N	SCHMITZ, 1899	Occasional
<i>Tringa nebularia</i>	Greenshank	N	N	HARCOURT, 1851	Exceptional
<i>Tringa flavipes</i>	Lesser Yellowlegs	N	N	New record	Only 1 record
<i>Tringa ochropus</i>	Green Sandpiper	Y	N	SARMENTO, 1936	Exceptional
<i>Tringa glareola</i>	Wood Sandpiper	N	N	SCHMITZ, 1900	Exceptional
<i>Actitis hypoleucos</i>	Common Sandpiper	Y	N	HARCOURT, 1851	Seasonal
<i>Actitis macularia</i>	Spotted Sandpiper	N	N	BANNERMAN & BANNERMAN, 1965	Only 1 record
<i>Arenaria interpres</i>	Turnstone	Y	N	HARCOURT, 1851	Frequent

Scientific name	English name	Specimen in MMF	Breeder	Original reference	Frequency or abundance
<i>Phalaropus tricolor</i>	Wilson's Phalarope	N	N	SILVEIRA & SCHMITZ, 1910	Only 1 record
<i>Phalaropus lobatus</i>	Red-necked Phalarope	N	N	HOLMES, 1939	Only 1 record
<i>Phalaropus fulicarius</i>	Grey Phalarope	N	N	SCHMITZ, 1899	Only 1 record
STERCORARIIDAE					
<i>Stercorarius pomarinus</i>	Pomarine Skua	N	N	SCHMITZ, 1899	Exceptional
<i>Stercorarius parasiticus</i>	Arctic Skua	N	N	SCHMITZ, 1899	Exceptional
<i>Stercorarius longicaudus</i>	Long-tailed Skua	N	N	New record	Only 1 record
<i>Stercorarius skua</i>	Great Skua	Y	N	HARCOURT, 1851	Occasional
LARIDAE					
<i>Larus ichthyaetus</i>	Great Black-headed Gull	N	N	LOWE, 1934	Only 1 record
<i>Larus melanocephalus</i>	Mediterranean Gull	N	N	BANNERMAN & BANNERMAN, 1965	Occasional
<i>Larus pipixcan</i>	Franklin's Gull	N	N	HOOGENDOORN & STEINHAUS, 199	Exceptional
<i>Larus minutus</i>	Little Gull	N	N	New record	Exceptional
<i>Larus sabini</i>	Sabine's Gull	N	N	New record	Only 1 record
<i>Larus ridibundus</i>	Black-headed Gull	Y	N	SARMENTO, 1936	Seasonal
<i>Larus delawarensis</i>	Ring-billed Gull	N	N	BOURNE, 1984	Occasional
<i>Larus canus</i>	Common Gull	N	N	SILVEIRA & SCHMITZ, 1910	Exceptional
<i>Larus fuscus</i>	Lesser Black-backed Gull	N	N	SCHMITZ, 1899	Frequent
<i>Larus argentatus</i>	Herring Gull	N	N	SWASH, 1986	Exceptional
<i>Larus cachinnans</i>	Yellow-legged Gull	Y	Y	HARCOURT, 1851	Very common
<i>Larus glaucoideus</i>	Iceland Gull	Y	N	SCHMITZ, 1908	Exceptional
<i>Larus hyperboreus</i>	Glaucous Gull	Y	N	SCHMITZ, 1905	Exceptional
<i>Larus marinus</i>	Great Black-backed Gull	Y	N	SCHMITZ, 1899	Exceptional
<i>Rissa tridactyla</i>	Kittiwake	Y	N	HARCOURT, 1851	Seasonal

(* Recorded only from the Selvagens; ** Breeds only in the Selvagens. Breeding species in bold; N= No; Y= Yes)

TABLE 3 - (Cont.)

Scientific name	English name	Specimen in MMF	Breeder	Original reference	Frequency or abundance
STERNIDAE					
<i>Gelochelidon nilotica</i>	Gull-billed Tern	N	N	SCHMITZ, 1900	Only 1 record
<i>Sterna caspia</i>	Caspian Tern	N	N	New record	Only 1 record
<i>Sterna sandvicensis</i>	Sandwich Tern	N	?	SCHMITZ, 1897	Exceptional
<i>Sterna dougallii</i>	Roseate Tern	Y	Y	OGILVIE-GRANT, 1890	Rare
<i>Sterna hirundo</i>	Common Tern	Y	Y	HARCOURT, 1851	Very common
<i>Sterna paradisaea</i>	Arctic Tern	N	N	SWASII, 1986	Exceptional
<i>Sterna fuscata</i>	Sooty Tern	N	Y	ROUX, 1983	Rare
<i>Sterna albifrons</i>	Little Tern	N	N	GODMAN, 1872	Exceptional
<i>Chlidonias hybridus</i>	Whiskered Tern	Y	N	BANNERMAN & BANNERMAN, 1965	Exceptional
<i>Chlidonias niger</i>	Black Tern	Y	N	HARCOURT, 1851	Exceptional
<i>Chlidonias leucopterus</i>	White-winged Black Tern	N	N	BANNERMAN & BANNERMAN, 1965	Only 1 record
ALCIDAE					
<i>Alle alle</i>	Little Auk	Y	N	MAUL, 1948	Exceptional
<i>Fratercula arctica</i>	Puffin	Y	N	SCHMITZ, 1899	Exceptional
COLUMBIDAE					
<i>Columba livia</i>	Rock Dove	Y	Y	HARCOURT, 1851	Very common
<i>Columba palumbus palumbus</i>	Woodpigeon	N	N	MOUGIN <i>et al.</i> , 1987	Exceptional
<i>Columba palumbus maderensis</i>	Madeiran Woodpigeon	Y	N	HARCOURT, 1851	Extinct
<i>Columba trocaz</i>	Long-toed Pigeon	Y	Y	CA' DA MOSTO, 1455	Common
<i>Streptopelia decaocto</i>	Collared Dove	N	N	FOLMAR & ORTVAD, 1992	Only 1 record*
<i>Streptopelia turtur</i>	Turtle Dove	Y	Y	ZINO, 1991	Common
CUCULIDAE					
<i>Clamator glandarius</i>	Great Spotted Cuckoo	Y	N	BANNERMAN & BANNERMAN, 1965	Exceptional

Scientific name	English name	Specimen in MMF	Breeder	Original reference	Frequency or abundance
<i>Cuculus canorus</i>	Cuckoo	Y	N	HARCOURT, 1851	Exceptional
TYTONIDAE					
<i>Tyto alba schmitzi</i>	Barn Owl	Y	Y	HARCOURT, 1851	Common
STRIGIDAE					
<i>Otus scops</i>	Scops Owl	Y	N	SCHMITZ, 1899	Occasional
<i>Asio otus</i>	Long-eared Owl	N	N	GODMAN, 1872	Dubious record
<i>Asio flammeus</i>	Short-eared Owl	N	N	OGILVIE-GRANT, 1896	Frequent
CAPRIMULGIDAE					
<i>Caprimulgus europaeus</i>	Nightjar	N	N	HARCOURT, 1851	Exceptional
<i>Caprimulgus ruficollis</i>	Red-necked Nightjar	N	N	NORONHA & SCHMITZ, 1902	Only 1 record
APODIDAE					
<i>Apus unicolor</i>	Plain Swift	Y	Y	JARDINE, 1830	Common
<i>Apus apus</i>	Swift	N	N	SCHINDLER, 1960	Occasional
<i>Apus pallidus brehmorum</i>	Pallid Swift	Y	Y	HARCOURT, 1851	Common
<i>Apus melba</i>	Alpine Swift	Y	N	NORONHA & SCHMITZ, 1902	Occasional
<i>Apus affinis</i>	Little Swift	N	N	MOUGIN <i>et al.</i> , 1987	Only 1 record
ALCEDINIDAE					
<i>Alcedo atthis</i>	Kingfisher	Y	N	HARCOURT, 1851	Exceptional
MEROPIDAE					
<i>Merops apiaster</i>	Bee-eater	Y	N	HARCOURT, 1851	Occasional
CORACIIDAE					
<i>Coracias garrulus</i>	Roller	Y	N	SARMENTO, 1936	Occasional
UPUPIDAE					
<i>Upupa epops</i>	Hoopoe	Y	Y	BANNERMAN & BANNERMAN, 196	Common

(* Recorded only from the Selvagens; ** Breeds only in the Selvagens. Breeding species in bold; N= No; Y= Yes)

TABLE 3 - (Cont.)

Scientific name	English name	Specimen in MMF	Breeder	Original reference	Frequency or abundance
PICIDAE					
<i>Jynx torquilla</i>	Wryneck	Y	N	SCHMITZ, 1897	Exceptional
Passerines					
ALAUDIDAE					
<i>Melanocorypha calandra</i>	Calandra Lark	Y	N	BANNERMAN & BANNERMAN, 1965	Occasional
<i>Calandrella brachydactyla</i>	Short-toed Lark	N	N	New record	Only 1 record
<i>Alauda arvensis</i>	Sky Lark	Y	N	FORSTER, 1777	Occasional
HIRUNDINIDAE					
<i>Riparia riparia</i>	Sand Martin	N	N	OGILVIE-GRANT, 1896	Exceptional
<i>Riparia rupestris</i>	Crag Martin	N	N	MOUGIN <i>et al.</i> , 1987	Only 1 record*
<i>Hirundo rustica</i>	Swallow	Y	N	GODMAN, 1872	Occasional
<i>Hirundo daurica</i>	Red-rumped Swallow	N	N	BACALLADO & OROMI, 1978	Exceptional*
<i>Delichon urbica</i>	House Martin	Y	N	HARCOURT, 1851	Occasional
MOTACILLIDAE					
<i>Anthus campestris</i>	Tawny Pipit	N	N	SWASH, 1986	Only 1 record
<i>Anthus berthelotii berthelotii</i>	Berthelot's Pipit	Y	Y	OGILVIE-GRANT, 1896	Common*
<i>Anthus berthelotii madeirensis</i>	Madeiran Berthelot's Pipit	Y	Y	HARCOURT, 1851	Very common
<i>Anthus trivialis</i>	Tree Pipit	N	N	SCHMITZ, 1905	Exceptional
<i>Anthus pratensis</i>	Meadow Pipit	N	N	SCHMITZ, 1897	Exceptional
<i>Anthus cervinus</i>	Red-throated Pipit	N	N	New record	Only 1 record
<i>Motacilla flava</i>	Yellow Wagtail	N	N	NORONHA & SCHMITZ, 1902	Exceptional
<i>Motacilla cinerea schmitzi</i>	Grey Wagtail	Y	Y	HARCOURT, 1851	Common
<i>Motacilla alba</i>	Pied Wagtail	Y	N	HARCOURT, 1851	Occasional

Scientific name	English name	Specimen in MMF	Breeder	Original reference	Frequency or abundance
TROGLODYTIDAE					
<i>Troglodytes troglodytes</i>	Wren	N	N	HARCOURT, 1851	Exceptional
TURDIDAE					
<i>Cercotrichas galactotes</i>	Rufous Bush Robin	Y	N	BANNERMAN & BANNERMAN, 1965	Exceptional
<i>Erithacus rubecula rubecula</i>	Robin	Y	Y	HARCOURT, 1851	Common
<i>Luscinia megarhynchos</i>	Nightingale	N	N	SCHMITZ, 1899	Exceptional
<i>Phoenicurus ochruros</i>	Black Redstart	N	N	SCHMITZ, 1903	Exceptional
<i>Phoenicurus phoenicurus</i>	Redstart	Y	N	OGILVIE-GRANT, 1890	Occasional
<i>Saxicola rubetra</i>	Whinchat	N	N	SCHMITZ, 1909	Exceptional*
<i>Saxicola torquata</i>	Stonechat	Y	N	SARMENTO, 1936	Exceptional
<i>Oenanthe isabellina</i>	Isabelline Wheatear	N	N	BOURNE, 1984	Only 1 record
<i>Oenanthe oenanthe</i>	Wheatear	Y	N	SCHMITZ, 1899	Occasional
<i>Oenanthe deserti</i>	Desert Wheatear	Y	N	TSCHUSI, 1901	Exceptional
<i>Monticola saxatilis</i>	Rock Thrush	N	N	MOUGIN <i>et al.</i> , 1987	Only 1 record
<i>Monticola solitarius</i>	Blue Rock Thrush	N	N	POESCH, 1961	Dubious record
<i>Hylocichla mustelina</i>	Wood Thrush	N	N	New record	Only 1 record
<i>Turdus torquatus</i>	Ring Ouzel	Y	N	New record	Only 1 record
<i>Turdus merula cabreræ</i>	Blackbird	Y	Y	SLOANE, 1707	Very common
<i>Turdus ruficollis</i>	Black-throated Thrush	N	N	SCHMITZ, 1903	Only 1 record
<i>Turdus pilaris</i>	Fieldfare	Y	N	SCHMITZ, 1896	Occasional
<i>Turdus philomelos</i>	Song Thrush	N	N	HARCOURT, 1851	Exceptional
<i>Turdus iliacus</i>	Redwing	Y	N	HARCOURT, 1851	Occasional
<i>Turdus viscivorus</i>	Mistle Thrush	N	?	BOURNE, 1984	Occasional

(* Recorded only from the Selvagens; ** Breeds only in the Selvagens. Breeding species in bold; N= No; Y= Yes)

TABLE 3 - (Cont.)

Scientific name	English name	Specimen in MMF	Breeder	Original reference	Frequency or abundance
SYLVIIDAE					
<i>Cisticola juncidis</i>	Fan-tailed Warbler	N	?	SWASH, 1986	Dubious record
<i>Locustella naevia</i>	Grasshopper Warbler	N	N	CÂMARA & TEIXEIRA, 1980	Only 1 record*
<i>Acrocephalus schoenobaenus</i>	Sedge Warbler	N	N	SCHMITZ, 1905	Exceptional
<i>Acrocephalus palustris</i>	Marsh Warbler	N	N	SCHMITZ, 1908	Exceptional
<i>Acrocephalus scirpaceus</i>	Reed Warbler	N	N	SCHMITZ, 1905	Exceptional
<i>Acrocephalus arundinaceus</i>	Great Reed Warbler	Y	N	SARMENTO, 1936	Exceptional
<i>Hippolais pallida</i>	Olivaceous Warbler	N	N	MOUGIN <i>et al.</i> , 1987	Exceptional*
<i>Hippolais icterina</i>	Icterine Warbler	N	N	FOLMAR & ORTVAD, 1992	Only 1 record*
<i>Hippolais polyglotta</i>	Melodious Warbler	N	N	SCHMITZ, 1905	Exceptional
<i>Sylvia conspicillata orbitalis</i>	Spectacled Warbler	Y	Y	HARCOURT, 1851	Rare
<i>Sylvia cantillans</i>	Sub-alpine Warbler	N	N	HUNTER <i>et al.</i> , 1986	Exceptional
<i>Sylvia melanocephala</i>	Sardinian Warbler	N	N	OGILVIE-GRANT, 1890	Only 1 record
<i>Sylvia hortensis</i>	Orphean Warbler	N	N	SCHMITZ, 1897	Exceptional
<i>Sylvia curruca</i>	Lesser Whitethroat	N	N	SCHMITZ, 1908A	Exceptional
<i>Sylvia communis</i>	Whitethroat	N	N	SCHMITZ, 1897	Exceptional
<i>Sylvia borin</i>	Garden Warbler	N	N	SCHMITZ, 1897	Exceptional
<i>Sylvia atricapilla heineken</i>	Blackcap	Y	Y	HARCOURT, 1851	Very common
<i>Phylloscopus inornatus</i>	Yellow-browed Warbler	N	N	SCHMITZ, 1900	Exceptional
<i>Phylloscopus bonelli</i>	Bonelli's Warbler	N	N	SCHMITZ, 1909	Exceptional
<i>Phylloscopus sibilatrix</i>	Wood warbler	Y	N	OGILVIE-GRANT, 1890	Exceptional
<i>Phylloscopus collybita</i>	Chiffchaff	N	N	SCHMITZ, 1897	Occasional
<i>Phylloscopus trochilus</i>	Willow Warbler	N	N	SCHMITZ, 1897	Occasional
<i>Regulus ignicapillus madeirensis</i>	Firecrest	Y	Y	HARCOURT, 1851	Very common

Scientific name	English name	Specimen in MMF	Breeder	Original reference	Frequency or abundance
MUSCICAPIDAE					
<i>Muscicapa striata</i>	Spotted Flycatcher	N	N	SCHMITZ, 1897	Exceptional
<i>Ficedula parva</i>	Red-breasted Flycatcher	N	N	New record	Only 1 record
<i>Ficedula hypoleuca</i>	Pied Flycatcher	Y	N	SARMENTO, 1936	Exceptional
ORIOLIDAE					
<i>Oriolus oriolus</i>	Golden Oriole	Y	N	HARCOURT, 1851	Exceptional
LANIIDAE					
<i>Lanius collurio</i>	Red-backed Shrike	N	N	CÂMARA & TEIXEIRA, 1980	Only 1 record*
<i>Lanius senator</i>	Woodchat Shrike	N	N	SCHMITZ, 1899	Exceptional
CORVIDAE					
<i>Corvus monedula</i>	Jackdaw	Y	N	SARMENTO, 1936	Only 1 record
<i>Corvus frugilegus</i>	Rook	N	N	SCHMITZ, 1903	Only 1 record
<i>Corvus corone</i>	Carion Crow	N	N	FORSTER, 1777	Dubious record
<i>Corvus ruficollis</i>	Brown-necked Raven	N	N	SCHMITZ, 1899	Dubious record
<i>Corvus corax</i>	Raven	N	N	HARCOURT, 1851	Exceptional
STURNIDAE					
<i>Sturnus vulgaris</i>	Starling	Y	N	HARCOURT, 1851	Occasional
<i>Sturnus unicolor</i>	Spotless Starling	N	N	JENSEN, 1981	Only 1 record
<i>Sturnus roseus</i>	Rose-coloured Starling	N	N	SCHMITZ, 1908A	Exceptional
<i>Lamprolornis cf. purpureus</i>	Purple Glossy Starling	N	N	This paper	Dubious record
PASSERIDAE					
<i>Passer domesticus</i>	House Sparrow	Y	N	HARCOURT, 1851	Exceptional
<i>Passer hispaniolensis</i>	Spanish Sparrow	Y	Y	OGILVIE-GRANT, 1890	Rare
<i>Petronia petronia</i>	Rock Sparrow	Y	Y	HARCOURT, 1851	Common

(* Recorded only from the Selvagens; ** Breeds only in the Selvagens. Breeding species in bold; N= No; Y= Yes)

TABLE 3 - (Cont.)

Scientific name	English name	Specimen in MMF	Breeder	Original reference	Frequency or abundance
PLOCEIDAE					
<i>Euplectes hordeaceus</i>	Black-winged Bishop	N	N	SCHMITZ, 1900	Dubious record
FRINGILLIDAE					
<i>Fringilla coelebs maderensis</i>	Madeiran Chaffinch	Y	Y	HARCOURT, 1851	Very common
<i>Fringilla montifringilla</i>	Brambling	N	N	SCHMITZ, 1897	Exceptional
<i>Serinus serinus</i>	Serín	N	N	JENSEN, 1981	Only 1 record
<i>Serinus canaria</i>	Canary	Y	Y	SLOANE, 1707	Very common
<i>Carduelis chloris</i>	Greenfinch	Y	Y	ZINO, 1969	Very rare
<i>Carduelis carduelis parva</i>	Goldfinch	Y	Y	HARCOURT, 1851	Very common
<i>Carduelis spinus</i>	Siskin	N	N	JENSEN, 1981	Only 1 record*
<i>Carduelis cannabina guentheri</i>	Linnet	Y	Y	HARCOURT, 1851	Rare
<i>Loxia curvirostra</i>	Crossbill	Y	N	BANNERMAN & BANNERMAN, 1965	Exceptional
<i>Loxia pytyopsittacus</i>	Parrot Crossbill	N	N	SILVEIRA & SCHMITZ, 1910	Only 1 record
<i>Coccothraustes coccothraustes</i>	Hawfinch	N	N	SCHMITZ, 1908	Exceptional
PARULIDAE					
<i>Dendroica petechia</i>	Yellow Warbler	N	N	DU RAU <i>et al.</i> , 1994	Only 1 record*
<i>Setophaga ruticilla</i>	American Redstart	N	N	New record	Only 1 record*
EMBERIZIDAE					
<i>Plectrophenax nivalis</i>	Snow Bunting	Y	N	SCHMITZ, 1907	Exceptional

(* Recorded only from the Selvagens; ** Breeds only in the Selvagens. Breeding species in bold; N= No; Y= Yes)

ACKNOWLEDGEMENTS

The authors would like to offer they grateful thanks to BILL BOURNE, CHRISTIAN JOUANIN, TED GERRARD and ANTÓNIO ABREU for having read the manuscript and for all the corrections and useful suggestions made, to HARALD PIEPER for his information on the fossil bird fauna of Madeira, and DR. RAYMOND LÉVEQUE of the Station Ornithologique Suisse for providing copies of important old references.

To our respective wives a special word of thanks for all their support.

REFERENCES

BACALLADO, J. J. & P. OROMI:

1978. Breve nota Ornitológica y Herpetológica sobre las Islas Salvajes. *Contribucion al Estudio de la Historia Natural de las Islas Salvajes. Resultados de la expedicion cientifica "Agamenon 76"*:199-209.

BANNERMAN, D. A.:

1914. Distribution and nidification of the Tubinares in the North Atlantic Islands. *Ibis* (10) 2:438-494.
1953. The Birds of West and Equatorial Africa. Oliver & Boyd. Edinburgh & London. 2 vols, I-xiii + 1526 pp.
1963. Birds of the Atlantic Islands. A history of the birds of the Canary Islands and of the Salvages. Oliver & Boyd. Edinburgh & London. i-xxxi+358 pp.

BANNERMAN, D. A. & W. M. BANNERMAN:

1965. Birds of the Atlantic Islands. A history of the birds of Madeira, the Desertas, and the Porto Santo Islands. Oliver & Boyd. Edinburgh & London. i-xlvii+207 pp.
1966. A history of the birds of the Azores. Oliver & Boyd. Edinburgh & London. i- xix+262pp.pp.

BERNSTRÖM, J.:

1951. Check-List of the breeding birds of the Archipelago of Madeira. *Bol. Mus. Mun. Funchal*, 5(14): 64-82.

BOURNE, W. R. P.:

1984. The Birds of Madeira in the Winter. *Bocagiana*, 76: 1-6.

BRETAGNOLLE, V., M. CURRUTHERS, M. CUBITT & J.-P. CUILANDRE:

1991. Six captures of a dark-rumped, fork-tailed Storm Petrel in the northeast Atlantic. *Ibis*, **133**(4): 351-356.

CA' DA MOSTO, A.:

- 1455-6. Manuscript translated into French by Verrier, F., 1994 - *Voyages en Afrique Noire d'Alvise Ca' da Mosto (1455 & 1456)*. Ed. Chandeigne / Unesco, Paris. 222pp.

CÂMARA, D. B. & A. M. TEIXEIRA:

1980. Autumn occurrence of Palearctic migrants on Selvagem Grande Island (Madeira). *Bocagiana*, **50**: 1-3.

CRAMP S. (CHIEF ED.):

1977. Handbook of the Birds of Europe, the Middle-East and North Africa. The Birds of the Western Palearctic., 1 - Ostrich to Ducks: 722 pp, 108 Pls.. Oxford University Press. Oxford, London, New York.
1980. Handbook of the Birds of Europe, the Middle-East and North Africa. The Birds of the Western Palearctic., 2 - Hawks to Bustards: 695pp, 96 Pls.. Oxford University Press. Oxford, London, New York.
1983. Handbook of the Birds of Europe, the Middle-East and North Africa. The Birds of the Western Palearctic., 3 - Waders to Gulls: 913pp, 105 Pls.. Oxford University Press. Oxford, London, New York.
1985. Handbook of the Birds of Europe, the Middle-East and North Africa. The Birds of the Western Palearctic., 4 - Terns to Woodpeckers: 960 pp, 98 Pls.. Oxford University Press. Oxford, London, New York.
1988. Handbook of the Birds of Europe, the Middle-East and North Africa. The Birds of the Western Palearctic., 5 - Tyrant Flycatchers to Thrushes: 1063 pp., 84 Pls.. Oxford University Press. Oxford, London, New York.
1992. Handbook of the Birds of Europe, the Middle-East and North Africa. The Birds of the Western Palearctic., 6 - Warblers: 728 pp., 31 Pls.. Oxford University Press. Oxford, London, New York.
1993. Handbook of the Birds of Europe, the Middle-East and North Africa. The Birds of the Western Palearctic., 7 - Flycatchers to Shrikes: 577 pp., 29 Pls.. Oxford University Press. Oxford, London, New York.
1994. Handbook of the Birds of Europe, the Middle-East and North Africa. The Birds of the Western Palearctic., 8 - Crows to Finches: 899 pp., 61 Pls.. Oxford University Press. Oxford, London, New York.

1994. Handbook of the Birds of Europe, the Middle-East and North Africa. The Birds of the Western Palearctic., 9 - Buntings and New World Warblers: 488pp., 34Pls. Oxford University Press. Oxford, London, New York.

CUBITT, M., M. CURRUTHERS & F. ZINO:

1992. Unravelling the mystery of Tyne Petrels. *Birding World*, **5**: 438-442.

DALGLEISH, J. J.:

1890. Notes on the Petrels of Madeira and the adjoining seas. *Proc. Roy. Physical Soc. Edinburgh* (11): 27-30.
1891. Letter on *Oestrelata mollis*. *Ibis*, (6) 2: 386.

DEFOS DU RAU, P., F. ROUX & C. JOUANIN:

1994. Observation de *Dendroica petechia* (Aves, Parulidae) à Selvagem Grande (30° 09' N, 15° 52' W). *Bocagiana*, **174**: 1-4.

FOLMAR, O. & T. ORTVAD:

1992. Observations of terrestrial birds on Selvagem Grande, in September 1990. *Bocagiana*, **160**: 1-6.

FORSTER J. G. A.:

1777. A voyage round the World in His Britannic Majesty's Sloop "Resolution", commanded by Captain James Cook, during the years 1772, 3, 4 and 5.:25-26 (Madeira birds). London.

FRUCTUOSO G.:

1590. As Saudades da Terra. 2nd vol. Historia das ilhas do Porto-Sancto, Madeira, Desertas e Salvagens; Unpublished manuscript. Annotated by Azevedo, A. R., 1873. Funchal.

GODMAN, F. DU CANE:

1872. Notes on resident and migratory Birds of Madeira and Canaries. *Ibis* (3)2: 158-177; 209-224.

HARCOURT, E. V.:

1851. A Sketch of Madeira. John Murray. London. 176 pp.

HARTWIG, W.:

1891. Die Voegel der Madeira Inselgruppe. *Ornis*, **7**: 151-188.

HEINEKEN, C.:

1832. Observations on the *Fringilla canaria*, *Sylvia atricapilla*, and other Birds of Madeira. *Zool. Journ.*, V: 70-79.

HOLMES, P. F.:

1939. Some oceanic records and notes on the winter distribution of the Phalaropes. *Ibis* (14) 3: 329-342.

HOOGENDOORN, W. & G. H. STEINHAUS:

1990. Nearctic gulls in the Western Palearctic. *Dutch Birding*, 12(3): 109-164.

HUNTER, S., M. J. JONES, L. A. LACE & V. J. GALLOWAY:

1986. Notes on birds observed on Madeira and Deserta Grande, Spring 1983. *Bocagiana*, 92: 1-4.

JAMES, P. C. & H. A. ROBERTSON:

1985. First Atlantic record of Swinhoe's Storm Petrel *Oceanodroma monorhis*. *Ardea*, 73: 105-106.

JARDINE, W.:

1830. Observations on a collection of birds lately received from Madeira, with the description of some new species from that island.. *Edinb. Journal Nat. & Geogr. Science*, I: 241-245.

JARDINE, W., P. J. SELBY:

1828. Illustrations of Ornithology. 1. ser., II. Edinburgh.

JENSEN, A.:

1981. Ornithological Winter observations on Selvagem Grande. *Bocagiana*, 62: 1-7.

JEPSON, P. R. & B. ZONFRILLO:

1988. Bird notes from Madeira, Summer 1986. *Bocagiana*, 117: 1- 10.

JOHNSON, J. Y.:

1885. Handbook for Madeira. London. *Birds*, pp. 192-198.

LOWE, W. P.:

1934. A Great Black-headed Gull at Madeira. *Ibis* (13) 4: 396.

MAUL G. E.:

1948. Lista sistemática dos mamíferos, aves, répteis e batráquios assinalados no Arquipélago da Madeira. in Sarmento, A. A., Vertebrados da Madeira, I. Junta Geral do Distrito Autónomo do Funchal. Funchal. 2ª ed.. 317 pp.

MEINERTZHAGEN, R.:

1925. May in Madeira. *Ibis* (12) 1: 600-621.

MOUGIN, J.-L., F. ROUX, P. A. ZINO, C. JOUANIN, J.-C. STAHL & B. DESPIN:

1987. Les Oiseaux visiteurs des Iles Selvagens. *Bol Mus. Mun. Funchal*, 39(183): 5-24.

NORONHA, A. C. & E. SCHMITZ:

1902. Aus dem Vogelleben der Insel Porto Santo (Madeira). *Ornithol. Jahrb.*, XIII: 130-135.
1904. Aus dem Vogelleben der Insel Porto Santo (Madeira). *Ornithol. Jahrb.*, XV: 124-145.

OGILVIE-GRANT, W. R.:

1890. Notes on some birds obtained at Madeira, Deserta Grande and Porto Santo. *Ibis* (6) 2: 438-445.
1896. On the Birds observed at the Salvage Islands, near Madeira. *Ibis*, (7) 2: 41-55.

POESCH, J. J. (ED.):

1961. Titian Ramsay Peale (1779-1885) and his journals of the Wilkes Expedition, 1838. *Mem. Amer. Phil. Soc.*, 52, 214 pp.

ROUX, F.:

1983. Présence et reproduction de Laridés nouveaux aux iles Salvages. *L'Oiseau et R. F. O.*, 53: 291-292.

SARMENTO, A. A.:

1906. As Selvagens. Edição do Autor. Funchal. 40 pp.
1936. As Aves do Arquipélago da Madeira. Ed. autor, Funchal. I-XXIV+142pp.

SCHINDLER, E.:

1960. Beobachtungen an Zugvögeln auf Madeira im Frühjahr 1960. *Bocagiana*, 5: 1-6.

SCHMITZ, E.:

1894. Tagebuch-Notizen aus Madeira. *Ornithol. Monatsber.*, **II**: 35-39.
1896. Tagebuch-Notizen aus Madeira (1895). *Ornithol. Jahrb.*, **VII**: 197-201.
1896a. Die Vögel Madeiras. *Ornithol. Monatsber.*, **IV**: 137-139.
1897. Tagebuch-Notizen aus Madeira (1895). *Ornithol. Jahrb.*, **VIII**: 244-248.
1897a. Die Vögel Madeiras. Nachtrag. *Ornithol. Monatsber.*, **V**(8): 121-122.
1899. Die Vögel Madeiras. *Ornithol. Jahrb.*, **X**(1,2): 1-34, 41-66.
1900. Zur Ornithologie der Insel Madeira. *Ornithol. Jahrb.*, **XI**: 218-221.
1903. Tagebuch-Notizen aus Madeira. *Ornithol. Jahrb.*, **XIV**: 206-211.
1905. Tagebuch-Notizen aus Madeira. *Ornithol. Jahrb.*, **XVI**(5, 6): 219-226.
1907. On the birds of Madeira. *Proc. Fourth Internat. Ornith. Congress*: 449-453.
1908. Die Vögel der Madeira-Inselgruppe. *Ornithol. Monatsber.*, **XVI**(1): 1-4.
1908a. Tagebuch-Notizen aus Madeira. *Ornithol. Jahrb.*, **XIX**: 36-48.
1909. Letzte Tagebuch-Notizen aus Madeira. *Ornithol. Jahrb.*: 58-63.

SILVEIRA, P. M. & E. SCHMITZ:

1910. Tagebuchnotizen aus Madeira. *Ornithol. Jahrb.*, **XXI**: 104-107.

SLOANE, H.:

1707. A Voyage to the Islands of Madeira, Barbados, Nieves, St. Christophers and Jamaica, etc., I: p.14. London

SWASH, A.:

1986. Observations of birds in the Madeiran Archipelago, Summer 1981. *Bocagiana*, **94**: 1-13.

TSCHUSI ZU SCHMIDTHOFFEN, V. R. VON:

1901. Neue Formen von Madeira. *Ornith. Monatsber.*, **9**: 129-131.

ZINO, P. A.:

1969. Observations on the breeding of the Greenfinch and the Hoopoe in the Archipelago of Madeira. *Bocagiana*, **21**: 1-5.
1991. Breeding of the Turtle Dove, *Streptopelia turtur*, in Madeira. *Bocagiana*, **146**: 1-4.



Plate 1 - Adult of Fea's Petrel, *Pterodroma feae*, Bugio Island, Desertas (top).
Adult of Zino's Petrel, *Pterodroma madeira*, Madeira (bottom).



Plate 2 - Fea's Petrel, *Pterodroma feae*. Adults, ventral and dorsal views. Bugio Island, Desertas.



Plate 3 - Zino's Petrel, *Pterodroma madeira*. Adults.

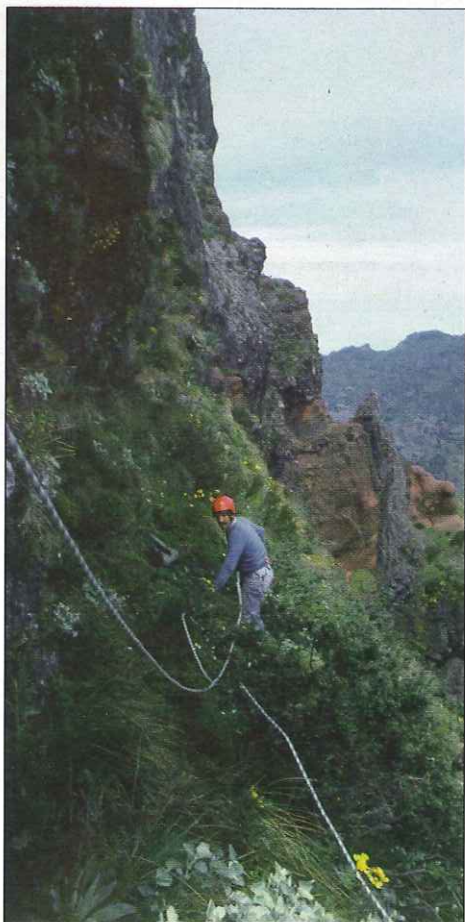


Plate 4 - Zino's Petrel, *Pterodroma madeira*. Adult and breeding habitat, Madeira.



Plate 5 - Long-toed Pigeon, *Columba trocaz*. 1 - juvenile on nest, 2 - juvenile.



Plate 6 - Long-toed Pigeon, *Columba trocaz*. 1 - juvenile, 2 - adult.