

## THE DISTRIBUTION AND ORIGINS OF WILDFOWL (ANATIDAE) OF WESTERN INDIAN OCEAN ISLANDS

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**ABSTRACT.-** The origins of the fifteen species of wildfowl (Anatidae) occurring naturally in the Western Indian Ocean Islands is detailed. Vagrants, one migrant and resident species are from the Palaearctic or the Tropics. The source of endemic species is different, two have an Australasian connection. Six extinct species and introductions are included.

**KEY WORDS.-** Western Indian Ocean islands, Wildfowl, Anatidae

**RESUME.-** L'origine des quinze espèces de canards sauvages (Anatidae) naturellement distribués dans les îles de l'Océan Indien occidental est discutée. Les espèces errantes, l'une migrante et les autres résidentes ont une origine paléarctique ou tropicale. L'origine des espèces endémiques est différente, deux d'entre elles présentant une connection australasienne. Six espèces sont éteintes et des espèces introduites sont également mentionnées.

**MOTS-CLES.-** Îles de l'océan indien occidental, Canards sauvages, Anatidae

### INTRODUCTION

Fifteen species of wildfowl Anatidae occur naturally in the islands of the Western Indian Ocean (Seychelles, Comores, Madagascar, Mascarenes, Amsterdam, Crozet and Kerguelen). Six species are known only from sub-fossil remains and among six species introduced, one from outside the region has been successful.

Those extant species occurring naturally include three vagrants and one migrant from the Palaearctic, seven residents (four Afro-tropical and three Pan-tropical) and four endemics.

### VAGRANT SPECIES

The species which have been recorded as vagrants to the region are quite predictable. The Ruddy Shelduck *Tadorna ferruginea*, Northern Shoveler *Anas clypeata* and Northern Pintail *A. acuta* (all recorded Seychelles (A. SKERRETT, *in litt*, 1994)) are migratory species and have been recorded widely in East Africa. *A. clypeata* and *A. acuta* have been observed in South Africa (MACLEAN, 1993) and the Maldive Islands, India (ASH & SHAFEEG, 1995).

Two Pan-tropical species, breeding in Madagascar, have been recorded as vagrants on other islands in the region. The White-faced Whistling Duck *Dendrocygna viduata* (Aldabra ; BENSON & PENNY, 1971; A. SKERRETT, *in litt*, 1994) and (Comores LOUETTE, 1988) and Comb Duck *Sarkidiornis melanotos* (Comores; LOUETTE, 1988).

#### MIGRANT SPECIES

One Palaearctic migrant, the wide-ranging Garganey *A. querquedula* has been recorded many times in the region. The species is annual in Seychelles (A. SKERRETT, *in litt*, 1994) and, while probably under recorded, has been found in Rodrigues (STAUB, 1976), Réunion (BARRE & BARAU, 1982) and Amsterdam (MARCHANT & HIGGINS, 1990). *A. querquedula* has also been recorded in South Africa (MACLEAN, 1993), Maldive Islands (ASH & SHAFEEG, 1995) and Christmas Island, Australia (STOKES, 1988).

#### RESIDENT SPECIES (NON-ENDEMIC)

Seven breeding species resident in Madagascar are found in Africa, and three are Pan-tropical. The Fulvous Whistling Duck *D. bicolor*, *D. viduata* and *S. melanotos* are found in wetlands on both sides of the Atlantic.

The Red-billed Pintail *A. erythrorhyncha*, Hottentot Teal *A. hottentota*, and African Pygmy Goose *Nettapus auritus* are widespread in Madagascar and in sub-Saharan Africa.

The White-backed Duck *Thalassornis leuconotus* is represented in Madagascar by the sub-species *T.l. insularis*. The nominate form is widespread in sub-Saharan Africa and has been recorded on Pemba and Zanzibar, Tanzania (PAKENHAM, 1979). This duck is apparently semi-nomadic within its range in Africa (BROWN *et al.*, 1982) and in Madagascar (O. LANGRAND, pers. comm.).

#### ENDEMIC SPECIES

Meller's Duck *A. melleri* is a member of the fourteen species mallard group within the genus *Anas*. At one time considered an island isolate of the migratory Northern Mallard *A. platyrhynchos* (WELLER, 1980) it is, however, apparent that this duck is a well differentiated species with behavioural and physiological traits consistent with Southern Hemisphere ducks (YOUNG, 1994). *A. melleri* is highly territorial and does not exhibit the « down-up » display widely used in other mallard species, characteristics similar only to one other mallard, the African Black Duck *A. sparsa*, a riverine specialist. These similarities probably result from convergence rather than a very close relationship (MCKINNEY, *in litt*, 1995; J. RHYMER, *in litt*, 1995).

The poorly studied *A. melleri* is probably most closely related to the African Yellow-billed Duck *A. undulata* (LIVEZEY, 1991).

Eaton's Pintail *A. eatoni* is restricted to Kerguelen and Crozet Islands and is an allo-species to the Holarctic, migratory Northern Pintail *A. acuta* (STAHL *et al.*, 1984; LIVEZEY, 1991). *A. eatoni* probably represents true island isolation of the common, migratory form.

The Madagascar, or Bernier's, Teal *A. bernieri* is the westernmost representative of the austral teal, eight species centred on Australasia (YOUNG *et al.*, 1993). No austral teal are known from Burma, India or from Africa.

The ancestral austral teal, possibly today represented by *A. gracilis* and *A. castanea* (Australia) may have been highly nomadic and dispersive as these two modern species are (see MARCHANT & HIGGINS, 1990). Localised endemic forms have evolved in Indonesia (*A. gibberifrons*), Madagascar (*A. bernieri*) Andaman Islands, India *A. albogularis*, New Zealand (*A. chlorotis*), Auckland Island, N.Z. (*A. aucklandica*) and Campbell Island, N.Z. (*A. nesiotis*) the last two taxa are flightless. A further taxa, *A. gracilis remissa* from Rennell Island, Australia is extinct.

All the austral teal are adaptable and can survive in a variety of habitats including saline waters and mangrove, making them suitable for colonisation of oceanic islands.

The Madagascar Pochard *Aythya innotata* has a very localised distribution in eastern Madagascar (WILME, 1994). One of four white-eyed pochards, the nearest related form is the Palaearctic Common White-eye *A. nyroca*, recorded in East Africa (BROWN *et al.*, 1982) and the Maldive Islands (ASH & SHAFEEG, 1995). Recent DNA investigations, however, suggest that *A. innotata* is most closely related to the Australian *A. australis* (M. SORENSON, *in litt.*, 1995).

The extinct *Anas theodori* of Mauritius and Réunion (COWLES, 1987) has been described as a « grey teal » (see CHEKE, 1987). The exact relationship between *A. theodori* and extant species is unclear, it may have been an austral teal, or possibly a mallard. A further sub-fossil *Anas* is known from Amsterdam Island (MARTINEZ, 1987), this undescribed duck has been considered an isolate of *A. querquedula* (BOURNE *et al.*, 1983), although this may prove erroneous.

There are four further sub-fossil Anatidae known from the region; *Centronnis majori* and *Alopochen sirabensis* from Madagascar, *A. mauritiana* from Mauritius and *Mascarenachen kervazoi* from Réunion. These taxa are all Sheldgeese, related, possibly to the African Egyptian Goose *A. aegyptiacus* (ANDREWS, 1897; COWLES, 1987, 1994; GOODMAN & RAKOTOZAFY, *in press.*). There are no recent records of any sheldgoose or shelduck species in the region away from Seychelles (see Vagrant species).

## INTRODUCED SPECIES

During recent centuries there have been attempts made to introduce wildfowl species to the region. *D. viduata*, *D. bicolor* and *A. aegyptiacus* were introduced unsuccessfully to Mauritius (CHEKE, 1987). *A. melleri* became established in Mauritius but may now be close to extinction (SAFFORD, 1995). *A. eatoni* was introduced to Amsterdam Island but failed to become established (ROUX & MARTINEZ, 1987)

The Northern Mallard has been released into Mauritius and, as in many parts of the world, is increasing.

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### REFERENCES

- ANDREWS, C.W., 1897. On some fossil remains of carinate birds from Central Madagascar. *Ibis*, 7(3): 343-359.
- ASH, J.S. & A. SHAFEEG, 1995. Birds of the Maldive Islands, Indian Ocean. *Forktail*, 10: 3-31.
- BARRE, N. & A. BARAU, 1982. Oiseaux de la Réunion. Imprimerie Arts Graphiques Modernes, St. Denis, 196p.
- BENSON, C.W. & M.J. PENNY, 1971. The Land birds of Aldabra. *Phil. Trans. Roy. Soc., Lond.*, 260 B: 417-527.
- BOURNE, W.R.P., A.C.F. DAVID & C. JOUANIN, 1983. Probable Garqaney on St Paul and Amsterdam Islands, Indian Ocean. *Wildfowl*, 34: 127-129.
- BROWN, L.H., E.K. URBAN & K. NEWMAN, 1982. The birds of Africa. Volume 1. Academic Press, London, 521p.
- CHEKE, A.S., 1987. An Ecological History of the Mascarene Islands, With Particular Reference to Extinctions and Introductions of Land Vertebrates. *In*: A.W. Diamond (ed), *Studies of Mascarene Island Birds*. pp. 5-89. Cambridge Univ. Press, Cambridge.
- COWLES, G.S., 1987. The Fossil Record. *In*: A.W. Diamond (ed), *Studies of Mascarene Island Birds*., pp. 90-100.
- COWLES, G.S., 1994. A new genus, three new species and two new records of extinct Holocene birds from Réunion Island, Indian Ocean. *Geobios*, 27(1): 87-93.
- GOODMAN, S.M. & L.M.A. RATOTOZAFY (In Press). Subfossil birds from coastal sites in western and southwestern Madagascar: A paleoenvironmental reconstruction.
- LIVEZEY, B.C., 1991. A phylogenetic analysis and classification of recent dabbling ducks (tribe Anatini) based on comparative morphology. *Auk*, 108: 471-507.
- LOUETTE, M., 1988. Les Oiseaux des Comores. Musée Royal de l'Afrique Centrale, Tervuren, 192p.
- MACLEAN, G.L., 1993. Roberts' Birds of Southern Africa (sixth edition). John Voelcker Bird Book Fund, Cape Town, 871p.
- MARCHANT, S. & P.J. HIGGINS, 1990. Handbook of Australian, New Zealand and Antarctic birds. Volume 1. Oxford University Press, Oxford, 1400p.
- MARTINEZ, J., 1987. Un nouveau cas probable d'endémisme insulaire : le canard de L'île Amsterdam. Table Ronde Internationale du CNRS sur l'Evolution des Oiseaux d'après le Témoignage des Fossiles, Lyon-Villeurbanne, 18-21 Septembre 1985: 211-218.
- PAKENHAM, R.H.W., 1979. The Birds of Zanzibar and Pemba : An Annotated Check-List. British Ornithologists' Union, 134p.

- ROUX, J.P., & J. MARTINEZ, 1987. Rare, vagrant and introduced birds on Amsterdam and St. Paul Islands, Southern Indian Ocean. *Cormorant*, 14: 3-19.
- SAFFORD, R., 1995. Meller's duck in Mauritius. *Threatened Waterfowl Research Group Newsl.*, 7: 17.
- STAHL, J.C., J.L. MOUGIN, P. JOUVENTIN & H. WEIMERSKIRCH, 1984. Le Canard d'Eaton *Anas eatoni dryqalskii*, des îles Crozet, Systématique, comportement alimentaire et biologie de la reproduction. *Gerfaut*, 74: 305-326.
- STAUB, F., 1976. Birds of the Mascarenes and Saint Brandon. Organisation Normale des Entreprises Ltée, Port Louis, 110p.
- STOKES, T., 1988. A review of the birds of Christmas Island, Indian Ocean. *Australian Nat. Parks and Wild. Service Occ. paper*: 16.
- WELLER, M.W., 1980. The Island Waterfowl. Iowa State Univ. press, Ames, 121p.
- WILME, L. 1994. Status, distribution and conservation of two Madagascar bird species endemic to Lake Alaotra : Delacours Grebe *Tachybaptus rufolavatus* and Madagascar pochard *Aythya innotata*. *Biol. Conserv.*, 69: 15-21.
- YOUNG, H.G., 1994. The Systematic Position of Meller's Duck *Anas melleri* : A Behavioural Approach. MSc Thesis, University of Kent.
- YOUNG, H.G., R. SAFFORD, A. GREEN. P. RAVONJIARISOA & R.G.M. RABARISOA, 1993. Survey and capture of the Madagascar teal *Anas bernieri* at Lac Bemamba Madagascar July-August 1992, July 1993. *Dodo, J. Wildl. Preserv. Trust*, 29 : 77-94.