

## Book Review

# Atlas des oiseaux nicheurs de la Grande Comore, de Mohéli et d'Anjouan<sup>1</sup>

by Michel Louette, Hachime Abdérémane, Ibrahim Yahaya and Danny Meirte

2008, Africamuseum, Leuvensesteenweg 13, B-3080 Tervuren, Belgium  
240 pages, 60 distribution maps, language: French, softcover  
ISBN 978-9-0747-5237-4. Price €35

Including a CD:

## Guide sonore des oiseaux nicheurs des Comores<sup>2</sup>

by Marc Herremans

2001, Africamuseum, Leuvensesteenweg 13, B-3080, Tervuren, Belgium  
One audio CD, 8 pages, 82 tracks, language: French, total running time: 68 minutes

This new publication by Dr Michel Louette and his collaborators is in the form of an atlas that covers the distribution of the bird species nesting on Grande Comore, Mohéli and Anjouan, three islands of the Comoros Archipelago. Although most people have heard of the Comoros Islands, few actually know where to place them or know their history. Before proceeding, we should perhaps insert a short, but useful digression.

The Comoros are in the Indian Ocean and are composed of four major islands. These are situated at the northern entrance of the Mozambique Channel, a stretch of water separating Madagascar from Africa. The Comoros form a surface area of 2 235 km<sup>2</sup> of emerged islands (comprising islets) spread over 250 km and their two outmost shores are situated at a distance of 300 km from both Africa and Madagascar. The Comoros were under French rule for part of the nineteenth and most of the twentieth century. Grande Comore, Mohéli and Anjouan became independent in 1975, constituting the Union des Comores (UC), a federal republic of islands. Mayotte, the fourth island, chose to stay under French administration. The population of the entire archipelago totals approximately 800 000 inhabitants.

The Comoros belong to a part of the world classified as a hotspot for biodiversity (Myers et al. 2000), which includes Madagascar, an emblematic region for endemism. Less well-known members of the hotspot are the small oceanic islands of the Western Indian Ocean: the Seychelles, Mascarenes, Iles Éparses and Comoros. Although biodiversity (measured as species richness) is relatively low in the hotspot, endemism is considerable. The proportion of native species that are found in no other part of the world

is impressive considering the surface area of most of the islands: vascular plants (89%), birds (58%), mammals (93%), reptiles (96%), freshwater fish (59%) and amphibians (~100%) (Mittermeier et al. 2008). The Comoros are volcanic islands that surfaced above the ocean less than 10 million years ago. They were quickly colonised by plants mainly of Malagasy origin, but also from Africa (Pascal et al. 2001). At the same time, animals, such as birds, colonised the Comoros from several origins, mainly Africa and Madagascar, but also Asia (Louette 1992). Through various evolutionary processes, the bird species adapted to unique insular conditions favouring endemism.

The atlas represents an unprecedented achievement, being the first atlas of species distribution for any animal group at the scale of the Comoros Archipelago. For historical reasons, the atlas does not include Mayotte. However, there is a separate bird atlas project, which has been under way since 2003, for this island (contact: Dr Michel Louette). Partly funded by the Agence Belge de Coopération au Développement, the atlas is the result of a cooperative project between the Musée Royal de l'Afrique Centrale of Tervuren, Belgium, and several collaborating partners, notably the Convention on Biological Diversity – Comoros and the Centre National de Documentation et de la Recherche Scientifique of Moroni, UC. To summarise, the goal of the atlas is to describe the main geographical zones that are important for the conservation of birds in the Comoros. However, it is much more than only that.

The atlas is the result of the observations of breeding birds from the three islands of the UC between 1981 and 2006. This represents a total of more than 20 000 observations,

<sup>1</sup> Atlas of breeding birds of Grande Comore, Mohéli and Anjouan

<sup>2</sup> Sound guide to the breeding birds of the Comoros

combining observations collected through standardised counting procedures and opportunistic records. It constitutes a data source that has no equivalent for any other oceanic island. After providing a list of all the bird species nesting in the UC (with their status and the island where they occur) and the methods used for mapping using a geographical information system, the book presents the distribution maps of the birds. It not only shows the horizontal distribution of birds for every species on every island, but also the altitudinal frequency of occurrence. Grid maps are accompanied by a photograph or a drawing of the bird and text explaining notably the taxonomy (also with English name), world distribution, distribution in the UC, ecology, nesting behaviour and conservation status of the species. Because features of special interest, such as forest coverage, altitude, rainfall, rivers, lakes, villages and roads, were encoded during the mapping process, each map also presents an 'ecological envelope', i.e. the full potential range of distribution of the species in the UC, based on the sum of the observations made on all three islands.

With these maps, we discover the ecology of the avifauna of the UC. Amongst the 60 nesting species present, 15 are strictly endemic to the UC (two other endemic species are restricted to Mayotte and are therefore not treated in the atlas: the Mayotte Sunbird and the Mayotte Drongo). Some species, like the Anjouan Scops-owl or the Humblot's Flycatcher (*Humblotia* is a genus endemic to the UC), are endemic to one island. Others, such as the Comoro Bulbul or Humblot's Sunbird, are endemic to two islands. Species such as the Comoro Thrush are endemic to all three islands. There are species that are endemic to the UC and to Mayotte, such as the Comoro Pigeon, or to the UC and Mayotte, and also to Aldabra, such as the Comoro Blue-pigeon. The Forest Fody is endemic to the UC and Mayotte, and also to Madagascar, while the Lesser Vasa Parrot is endemic to only two islands of the UC, but is at the same time endemic to the Seychelles and Madagascar. Finally, there are species that have a much wider distribution, like the Masked Booby. It is not possible to list here all the possible situations that are found in the atlas, but these are diverse. This remarkable diversity is furthermore illustrated by the presence of species that are also found outside the archipelago, but for which a subspecies can be identified as endemic to the UC, such as Frances' Sparrowhawk, or the Blue Vanga, for which there exists a different subspecies on every island.

The atlas comes with an audio guide to the breeding birds of the Comoros (UC and Mayotte) by Dr Marc Herremans. The guide can be purchased separately and has already been reviewed (Spottiswoode 2002). However, it is complementary to the atlas, highlighting the beauty and diversity of the Comorian avifauna. The CD contains the complete repertoire of the breeding birds of the archipelago, followed by the cries of the lemurs, bats, tenrec, frog and gecko that can be mistaken for a bird. It also gives examples of how the calls were edited to remove all background noises that often pollute recordings. A small booklet presents the taxonomy (also with English name) and date and place of recording. With regard to the breeding birds of the archipelago, the CD is more comprehensive than the work by Huguet and Chappuis (2003). A total of 52 species are found, although

actually 73 complete repertoires can be read, due to the fact that the author presents, whenever possible, the calls as they were recorded on the different islands for a same species. This is particularly interesting, as listening to the CD reveals that they may differ greatly. The study of interisland differences in calls is certainly of great scientific interest and might help support the idea of interisland subspeciation. The CD is an excellent tool for research, but also for the field, be it for science, natural history or education purposes.

The birds of the Comoros have benefited from three previous major works of synthesis (Benson 1960, Louette 1988, Louette et al. 2004). This fourth (and its complement: the sound guide) is not a field guide (for a guide, see Louette 1988 or Sinclair and Langrand 1998), but a powerful tool for researchers, teachers, naturalists and conservationists. It not only determines the areas of distribution of each species, but also proposes new areas where it is possible to find the species ('ecological envelope'). The major outcome is that, on all three islands, the residual endemic taxa inhabit mostly the remaining native zones of vegetation, i.e. the high-altitude forests (above 1 000 m). On Mohéli, the intermediate altitudes also contain much endemism. On Anjouan, which is the island where the natural vegetation is the most degraded, the endemic taxa inhabit the remaining patches of native forest and the agricultural plantations.

This atlas is most welcome for this ecoregion, which suffers from severe environmental deterioration, through increase of human pressure on natural resources in particular. It is estimated that the Comoros lost almost 60% of its remaining forest cover to logging, slash-and-burn cultivation and plantations between 1995 and 2005. On Anjouan, there are two forest patches representing a total surface area of approximately 10 km<sup>2</sup>, which provide the essential remaining habitat for the surviving population of the Anjouan Scops-owl and the famous endemic Livingstone's fruit bat. Inside the Madagascar and Indian Ocean Islands biodiversity hotspot, the Comoros are the ecoregion with the smallest proportion of protected area (and this includes Mayotte). There exists to date only one protected zone in the UC: the parc marin de Mohéli (Granek and Brown 2005). There are projects to create others, but these are still under debate. To speak candidly, the situation is critical. In the last part of the atlas, the authors consider the conservation aspects of the birds of the UC. As always with Dr Michel Louette, the approach is ecosystemic. There is an urgent need to save all native fauna and flora from extinction and this means protecting the remaining high-altitude forests. Each island should possess at least one terrestrial and one marine protected area. Vestigial indigenous forest areas should receive total protection and be surrounded by buffer zones, where resource exploitation is planned in a sustainable way. The authors give a certain number of recommendations for the conservation and management of natural resources taking into account historical, political, institutional and legal factors, but also economic and social aspects, such as traditional agricultural practices and questions of land ownership.

Today, the UC needs urgent help from international organisations to plan and organise their conservation policies. However, actual implementation of these policies is

in their hands. The UC has suffered from political instability, a situation that helps explain their delay in the area of conservation. The atlas is a gift from its authors to the Comorian people. The choice of writing it in French is a clear message that it is first aimed at the Comorian, for research and conservation purposes. A positive outcome of the atlas is the conclusion that there has been no extinction of a single endemic bird species between the first descriptions of the avifauna and today. However, the atlas also emphasises that amongst the 15 endemic species of the UC, two are now endangered and three critically endangered, i.e. under threat of immediate extinction. The history of the demise of most of the endemic biota of the sister Mascarenes Islands (Cheke and Hume 2008) should be a lesson to teach the Comorian people and their leaders. Using tools such as the atlas, the international community and the UC must act together and at once, so that the real riches of the Comoros are saved from irretrievable loss.

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