BUSTARDS

Living clues to Africa's past

CALLAN COHEN

The striking Southern Black Korhaan is endemic to the southern Cape.

Bustards have always attracted man's attention and their elegant appearance and captivating displays have long made them a favourite among birders. Yet despite all the ecological and conservation attention directed at this well-studied group, the species' relationships and taxonomy remain unclear. Because the bustards (including the korhaans) are a predominantly African group and their distribution mirrors that of open, mostly arid areas, they are ideal candidates for examining the arid zone biogeography of the continent. Fitztitute doctoral student Callan Cohen is examining how the relationships between the bustards provide clues to the history of Africa's arid lands.

The history of the African continent, and in particular its climate and vegetation changes, has been the subject of much interest. Climatic fluctuations in response to glaciation cycles, resulting in alternating periods of moist forests and dry deserts across the continent, are believed to have occurred over the aeons. Currently, Africa's south-west arid zone (South Africa, Namibia and Botswana) is separated from its north-east arid zone (Kenya, northern Tanzania, Ethiopia and Somalia) by an interleading band of moist woodland that open-country birds cannot inhabit.

It has been speculated that at some time during the Pleistocene the continent was drier than at present and that a corridor of arid vegetation linked these arid zones. This corridor would have allowed arid-adapted taxa to disperse across it, and is the most common explanation for the striking similarity (relatedness) of both animals (birds, mammals and amphibians) and plants between south-west and north-east Africa.

Because 23 of the world's 27 species of bustard occur largely in these separate African arid zones, they are ideal species for examining the history of the continent's deserts. To do this, an understanding of how they are related to one another is essential. However, both the species-level taxonomy and the deeper family relationships within the bustards are disputed, and no objective phylogeny (or 'family tree') exists for the group.

The basis of the current study will be to construct a phylogeny of the bustards. This will be done using genetic (both mitochondrial and nuclear), plumage, morphometric, vocal and behavioural characteristics. Molecular studies will be carried out both in South Africa and overseas, using cutting-edge techniques developed at the American Museum of Natural History in New York as part of a collaborative venture. Fresh samples have been obtained from as far away as Australia and Morocco, and a two-month field trip was undertaken in East Africa in collaboration with the National Museums of Kenya.

The conservation of bustards is currently the focus of much attention, and the examination of genetic differentiation among fragmented populations, including the resolution of species complexes, will provide insight into conservation priorities and management.

This research has been made possible by grants provided by the National Research Foundation and the University of Cape Town.

We would like to make an appeal for tissue for analysis from dead bustards. If you do find a fresh roadkill, freezing the bird until we can collect it will allow you to make a valuable contribution towards this project. Contact Callan Cohen at (021) 683 1898, or ccohen@botzoo.uct.ac.za □

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