Valuable lessons stored in the genes

Some of the most exciting findings in ornithology today relate the biology of birds to the genetic diversity within and between bird populations. The study of bird genetics is reshaping the way we perceive and conserve birds. One slightly controversial aspect for bird-watchers is the way genetic studies are being used to support species 'splits' and 'lumps'; this topic needs to be de-mystified, but it is beyond the scope of this column to tackle. Here we merely describe some of the ways the Fitztitute is involved in the genetic 'revolution'.

One of the first Fitztitute genetic studies assessed the impact of hunting on Grey-wing Francolin *Francolinus africanus* populations. Comparing protein variants, we could show that Grey-wing Francolins exhibit a fair amount of genetic variation among individuals, but that this variation isn't restricted to different areas. This suggests that there is considerable movement of Greywing Francolins, which helps to offset localized hunting pressure. Furthermore, this movement prevents hunted populations from losing genetic diversity, which is essential to maintain healthy populations.

More recently, the technology to 'read' gene sequences directly has become readily available, and the Fitztitute has established the Conservation Genetics Laboratory to take advantage of this advance. We can now begin to disentangle whether morphological and behavioural variations within 'species' have a genetic basis. For example, we now know that the Black Korhaan *Eupodotis afra* comprises two distinct species, whereas the great geographic range in size among Yellowrumped Widows *Euplectes capensis* is merely a consequence of environmental differences.

NORTHERN BLACK KORHAAN PETER STEYN

GREYWING FRANCOLINS PETER STEYN

These studies have relevance beyond the ability to detect previously overlooked bird species. The discovery of a 'new' species, Barlow's Lark *Certhilauda barlowi*, restricted to the coastal plain between Port Nolloth and Lüderitz, has boosted calls for the formation of a national park in this biologically rich region. Similarly, recent findings comparing scraps of genetic material coaxed from feathers of museum specimens of Egyptian Vultures *Neophron percnopterus* show that birds from southern Africa are very distinct genetically from those from East Africa, Europe and Asia. This suggests that current plans to reintroduce Egyptian Vultures to South Africa using birds from Israel could cause serious problems for the few remaining southern African birds living in Namibia and Angola.

Although the Fitztitute is heavily involved in research, it also plays an important role in education – both within and beyond the university environment. Birding is a rapidly growing pastime worldwide, and the pleasure that can be derived through birding is enhanced by an understanding of bird behaviour and the important roles that birds play in different environments. Such knowledge can often be gained better in the field than a lecture theatre, and so later this year we shall be running a field course especially designed to cater for this need. □

~ EXPLORING BIRD BEHAVIOUR IN THE FIELD ~

In November 1996, experts from the Fitztitute will be leading a week-long field course on bird biology, identification and conservation. In addition to refining identification skills, the course will concentrate on exploring bird behaviour and the importance of birds in the environment. The tour around the Western Cape will include visits to an island seabird colony, some of the richest shorebird habitats in southern Africa, threatened lowland fynbos, the high mountains of the Cedarberg and the arid flats of the Tankwa Karoo.

Proceeds will go towards field studies of African birds. Space on this comfortably catered (and tax deductible!) course is limited. For further information, please contact Phil Hockey or Peter Ryan, FitzPatrick Institute, University of Cape Town, Rondebosch 7700, South Africa. Fax: 021 650 3295.