Australian National University

EGG Seminar

Reaching the higher hanging fruit in Australo-Papuan bird systematics and evolutionary biology

1–2pm
Thursday, 3rd December 2015

Gould Seminar Room
Rm 235 Gould Building (116),
Daley Road, ANU

Leo Joseph
Australian National Wildlife Collection, CSIRO

In this talk I will review a number of recent data sets from the ANWC and associates on molecular phylogeographic, phylogenetic and genomic studies of Australo-Papuan birds. Somewhat inevitably, I focus on resolving the interesting but always biologically informative conflicts they often set up with current taxonomy. Broad categories I will discuss are mito-nuclear discordance, selection and the impact on conservation and management, cryptic diversity revealed by molecules and whether taxonomy is incomplete or incorrect, historical demography and traps in interpretation of mtDNA data, introgression, and generic level diversity. The question of what we want taxonomy to convey at the species level and below recurs in my consideration of these cases that I will present and provides a helpful starting point for synthesizing the examples. Some of these topics may sound rather familiar if not a tad well-worn. I hope the talk will show that the advent of genomics techniques or simply careful application of now older methods can breathe new life into the biology involved in some of these topics.

Key Papers:

Dolman G, Joseph L (2015) Evolutionary history of birds across southern Australia: structure, history and taxonomic implications of mitochondrial DNA diversity in an ecologically diverse suite of species. *Emu* 115: 35-48.

Schweizer M, Wright TF, Penalba JV, Schirtzinger E, Joseph L (2015) Molecular phylogenetics suggests a New Guinean origin and frequent episodes of founder-event speciation in the nectarivorous lories and lorikeets (Aves: Psittaciformes). *Molecular Phylogenetics and Evolution* 90: 34-38.

Shipman A, Schmidt DJ, Joseph L, Hughes JM (2015) Phylogenetic analysis of the Australian rosella parrots (Platycercus) reveals discordance among molecules and plumage. *Molecular Phylogenetics and Evolution* 91: 150-159.

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