ticking boxes

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A Broad-billed Prion on Gough Island with an atypically blue-sided bill, which probably reflects hybridisation with MacGillivray's Prions.

Arguably the most important product of the Fitztitute is the generation of knowledge. And the most important way we disseminate knowledge is through papers published in the scientific literature, which ensures that the message has been critically reviewed. The digital era has seen some changes to the peer-review process and the advent of 'open access' journals, where the researcher pays for publication, has created a niche for predatory journals that will publish just about anything for a fee. But in this time of unprecedented misinformation, publication in a reputable journal remains one of the best defences against 'fake' news.

Unfortunately, getting a paper accepted in such a journal can be a daunting prospect. Many students complete their theses, but fail to publish their findings. It takes perseverance and fortitude to pass this final hurdle. One of the key decisions is where to submit your paper. Not all journals are valued equally; papers published in some journals attract more attention than others. This creates competition for space and many 'high impact' journals reject more than 90 per cent of papers submitted to them. You have to have a very compelling story to get it published in a widely read, general interest journal such as *Science* or *Nature*.

What prompted me to write this article was the recent publication of a paper on the evolution of prions (Masello et al., doi 10.1007/s00438-021-01845-3). Sometimes it takes an inordinate amount of time for a paper to find a home and that was the case with this one. It resulted from the discovery of a second prion species breeding on Gough Island in 2012 (see *African Birdlife* 2014, 2(4): 10–11). The new species has a similar bill size to the little-known, relict population of MacGillivray's Prion from St Paul Island, which was once abundant on nearby Amsterdam Island in the Indian Ocean. At the time, the status of MacGillivray's Prion was unresolved and it was usually regarded as a subspecies of either the Broad-billed or Salvin's Prion.

To infer the evolutionary relationships among these prions, we needed samples from populations around the Southern Ocean, so we assembled a team of 17 authors from nine countries. Sequencing selected genes showed that the Gough birds are closely related to MacGillivray's Prion, with both being sister to the Broad-billed Prion. We thus recommended that MacGillivray's Prion be recognised as a new species, with populations on both St Paul and Gough islands (see *African Birdlife* 2020, 8(4): 12–13). This was adopted by BirdLife International and the species was listed as Endangered in 2017, given the impacts of introduced rodents on both breeding islands.

However, we struggled to publish the genetic findings because the reviewers wanted more analyses based on more genes. It took repeated iterations before the paper was finally published in *Molecular Genetics and Genomics*.

In addition to the main conclusions outlined above, the paper suggests that Gough Island was colonised by MacGillivray's Prions from the Indian Ocean and also reports evidence of gene flow between MacGillivray's and Broad-billed prions breeding together on Gough Island, despite the three-month difference in breeding season between the two species.

Such 'messy' results challenge birders and conservation agencies alike, because we want to put populations into neat species boxes. But evolution is a dynamic, ongoing process and we have to accept that hybridisation forms part of that process. Lumping everything from Antarctic to Broad-billed Prions into a single species is not the solution – there are consistent and biologically meaningful variations among prion populations that result in increasing bill sizes from Antarctic to temperate waters. Rather than obsessing about how many species we have seen, we should embrace and celebrate the diversity of birds in all their forms.

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