HYBRIDIZATION OF EASTERN AND CRIMSON ROSELLAS IN OTAGO

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SUMMARY

An examination of the literature and evidence collected from local aviculturalists indicates that the reported wild interbreeding of the Australian Eastern and Crimson Rosellas in Otago is not proven. Even if established this particular instance of hybridization is unlikely to be of taxonomic significance.

INTRODUCTION

Two species of Australian rosella parakeets have been introduced into New Zealand, the Eastern Rosella *Platycercus eximius* and the Crimson Rosella *P. elegans*. The Eastern Rosella has become established mainly in the north of the North Island and around the Dunedin district of Otago. It has occasionally increased to pest proportions. The Crimson has been reported from the Dunedin district (and more recently, Wellington) and has never been common. In Australia these are two distinct species. Their distribution overlaps broadly throughout New South Wales and Victoria and they occupy similar habitats. Around Dunedin these two species are reported to interbreed since the hybrids have been wild trapped. There are two possible sources of these wild hybrids. They may be derived from aviary bred hybrids which have escaped or they may have been bred in the wild from the rare Crimsons which took the only mates that they could find — Eastern Rosella birds.

It would seem to be impossible now to prove conclusively that natural hybridization has occurred since the Crimsons have not been conclusively reported in the last twenty years, and the discovery of a mixed breeding pair is improbable. Since Oliver firmly reports hybridization, I considered it worthwhile collating what is known about the local populations.

DISTRIBUTION

Eastern Rosellas are present around Dunedin as small strongly localized flocks. They are said to occur as far north as Palmerston, they are certainly at Puketeraki and are known as far south as Berwick and Waipori Falls township. Localities where they have been sighted within the last year are Waitati (two areas), Leith Saddle,, Pigeon Flat, above Sawyers Bay, Ross Creek, Whare Flat, Berwick, Waipori Falls township and Woodside Glen. (Pers. comm. from several local informants.) This range is not significantly different from that given by Oliver in 1955 but there has been a marked decrease in numbers over the past 15 years. Where there used to be flocks of several hundreds, there are now flocks of only 10 - 30, and they have vanished entirely from some localities where they were formerly common. Rabbit poisoning with grain and strychnine is thought to be the most probable cause of their decline, and steady trapping for local aviaries may also have been effective. Rosellas are reported as having been destructive in field crops of peas at Berwick recently and on small fruit farms around Dunedin in the 1930s, and so have been actively shot by local farmers.

RELEASES

Oliver states that "About 1910 a small shipment of Eastern Rosellas, including a few Crimson Rosellas, that had been refused entry into New Zealand by the Customs Department, was released off Otago Heads by the ship which brought them as she was returning to Sydney." (Oliver 1955: 638.) It seems highly probable that Oliver was given this account by a Dunedin aviarist, Mr. F. W. Barnett, who says that Oliver wrote to him asking about rosellas. Mr. Barnett in turn had been given this account by other older Dunedin aviarists now dead, and he is fairly certain that he passed it on to Oliver. (Barnett: pers. comm.) The Otago introduction is not documented in the letterbooks of the Dunedin Customs Department between May, 1906, and January, 1912.

Local naturalists who might have reported the birds seem to have been unaware of them or else did not publish. In 1922 Thomson reported only the Auckland population of Easterns (Thomson 1922: 137). In 1930 Oliver did the same. There is no mention of rosellas in the Otago Acclimatisation reports between 1904 and 1930. Mr. W. H. Davidson reported in 1948 that the first rosellas were seen in Leith Valley between 1910 and 1913 (Davidson 1948: 214). Mr. F. W. Barnett was trapping rosellas in Leith Valley by 1933 and judging by the numbers seen (a flock of 300 - 400 seen in the Waitati Valley some time during the 1930s) the species had been established for some years. (Barnett: pers. comm.)

Mr. W. J. Williams, an engineer with the Dunedin Water Department, states in an account probably written about 1950 that the liberation of Eastern Rosellas resulted when an aviary belonging to a farmer on Mt. Cargill was wrecked by a gale. "About a dozen rosellas and a number of Red Lories escaped." (Williams: M.S.) Mr. Barnett had never heard this account, but the odd point is that Red Lory or Lowry is one of the popular names for Crimson Rosella. (Cayley 1963: 162.)

PLUMAGE OF EASTERN AND CRIMSON ROSELLAS

The general pattern of the plumage of the two species is very similar and they interbreed readily as cage birds. Hill states that in Australia "Cross-breeding in the wild . . . is not unknown." (Hill 1957: 108). Back-crossing of F1 hybrids to the Crimson parent produces almost Crimson type plumage in 4 or 5 generations. (F. W. Barnett: pers. comm.) *Vice versa* most of the Crimson characters are lost in a few generations if the hybrids are back-crossed to the Easterns. The salient colour differences between the two species are:

Crimson: Breast, abdomen and undertail coverts dark crimson.
Eastern: Breast and undertail coverts lighter crimson, upper abdomen yellow with a dribble of red, lower abdomen green.
Crimson: Feathers of back and wing coverts edged with crimson.
Eastern: Feathers of back and wing coverts edged with yellow.
Crimson: Cheek patch brilliant blue.
Eastern. Cheek patch white (or pale blue ?).
Crimson: Rump dark crimson.
Eastern: Rump green.

Also the Crimson Rosella is a much larger bird than the Eastern. Gould records the cheek patches of the Eastern Rosella as white (Gould 1865: 55) as does Oliver and Forshaw. Other authors show a light wash of blue.

Definitely hybrid birds caught in the wild are reported to have had a generally Eastern appearance with a red wash extending from the breast well down over the yellow and green of the abdomen. They had pale blue cheek patches and the back feathers tended to have red margins. The rump might be red or green, and the reds throughout tended to be the dark crimson of the Crimson Rosella. A wild-caught hybrid was described to me as having the back feathers margined with red, the crown dark crimson, the cheek patch a washed-out blue, rump and abdomen mottled crimson on green and its other characteristics typically Eastern. This bird was caught at Waitati seven or eight years ago by Mr. Barnett.

All the local aviarists consulted agree that wild Crimson Rosellas have always been uncommon and none has been seen recently. One was seen in the upper Waitati Valley about 30 years ago, in the back garden of a farm house close to the bush (F. W. Barnett: pers. comm.). One was caught in the Waitati Valley in the 1940s that looked to be fully Crimson (D. R. Ker: pers. comm.), and there was a hearsay report of a Crimson seen at Leith Saddle about seven years ago. Also there is general agreement that strongly hybrid birds used to be seen quite regularly though one informant who estimated that he had handled about 3000 rosellas over the last 30 years said it was 10 years since he had caught a pronounced hybrid. Birds are still being caught in the Waitati area which look to be mostly Eastern except that they carry some red on the rump or back and have the blue cheek patches which suggest some Crimson ancestry. Rather less than one in twenty of the wild birds caught carry these markings. (D. R. Ker and W. A. Henderson: pers. comm.)

DISCUSSION

Some minor pieces of evidence suggest that natural hybridization has occurred. Crimson Rosellas are still being kept in local aviaries and hybrids bred. Escapes have been reported recently of Easterns at least; yet the occurrence of strong hybrids in the wild has declined with the decline of the full Crimsons. Other species of Rosellas are kept and hybridized in local aviaries. I have seen hybrids of Eastern and Tasmanian Rosellas. Adelaide and Moreton Bay Rosellas have also been kept locally. Moreton Bay Rosellas are reported by Cayley and Forshaw to interbreed with Eastern Rosellas where their ranges overlap. None of the wild-caught Dunedin birds has been reported to show traces of these other species.

Taxonomically it is probably irrelevant whether or not there has been local hybridization. According to Mayr, where one parental species is rare, natural hybridization is 'not different in principle from situations in which a species hybridizes in captivity in the absence of conspecific mates.' (Mayr 1963: 126). Mayr is discussing here individuals which occur beyond the solid geographic or habitat range of their species and states that this phenomenon has been reported for flycatchers, woodpeckers, bulbuls and other birds. I consider that the Dunedin rosellas can best be compared with birds thus isolated.

Disturbance of habitat is also a common cause of hybridization but only in the situation where habitat preferences constitute a barrier to interbreeding. Eastern and Crimson Rosellas have widely overlapping habitat preferences. Hence habitat disturbance or rather disturbance of their relationship to their habitat cannot be invoked as a casual mechanism of hybridization between them.

ACKNOWLEDGEMENTS

I wish to thank Dunedin naturalists and aviarists who have patiently answered my queries and shown me their birds, in particular Miss O. Cartwright, Messrs. F. W. Barnett, W. A. Henderson, D. R. Ker, F. Tardiff, W. Troup and my colleagues in the O.S.N.Z.

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SHORT NOTE

WELCOME SWALLOWS AT LAKE OKAREKA

We have had several sightings of the Welcome Swallow *Hirundo neoxena* in the Bay of Plenty particularly at the mouth of the Kaituna River (Kaituna Cut), Matata Lagoon and Tarawera River estuary. Up to date we had not seen the Welcome Swallow on the Volcanic Plateau till 11/3/70 when three birds were observed from our house on the lakeside at Lake Okareka. Following the long dry spell (our driest for many years) the lake level is now the lowest we have known in 11 years and this has turned what was water up to 3 feet deep, with a strong stand of reeds giving excellent nesting sites for many waterfowl, into a barren mud mire (reeds dried and died off) and obviously an excellent breeding ground for insects. The three Welcome Swallows were flying in their usual energetic and spectacular manner over this area eventually landing and perching on the top of three sticks standing upright in the mud.

We noted them resting, one on each stick for nine minutes.

— W. J. & M. BROUN