Moult-skipping by the Lesser Magellan Goose in Argentina

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Introduction

It has been shown that the Greater Magellan Goose or Falkland Upland Goose *Chloëphaga picta leucoptera* may skip the annual moult of flight feathers, particularly if it is an adult which has bred successfully (Summers 1983). Occasionally moult is skipped in successive years, resulting in very worn primaries and perhaps impaired flight. The Greater Magellan Goose is resident in the Falkland Islands (Summers 1985) so slight impairment of flight may be unimportant to survival.

The other subspecies, the Lesser Magellan Goose *C. p. picta*, occurs in Argentina and Chile and comprises migrant and resident populations. For example, the birds which breed in Tierra del Fuego carry out a migration of *c.* 2,000 km, at night and partially over the sea (Gulfs of San Jorge and of San Matías), in order to winter in the southern part of Buenos Aires Province (Plotnick 1961b) (Figure 1). Here they are joined by birds from other parts of Patagonia. Fresh flight feathers are likely to be more important in these migrant populations. Other populations of Lesser Magellan Geese are resident and may be found wintering in all parts of the breeding range from Tierra del Fuego to Neuquen (Crawshay 1907; Goodall *et al.* 1951).

In this study we examined specimens from various parts of Argentina to determine whether moult-skipping was occurring in this subspecies, and in particular in the migrant populations.

Methods

The skin collections at the Museo Argentino de Ciencias Naturales in Buenos Aires and British Museum of Natural History, and birds shot at Bariloche (Rio Negro Province) and Esquel (Chubut Province) (Figure 1) were examined, and the state of wear of the tip of the longest primary was described as being "new", "moderately worn", "worn" or "very worn" (Figure 2). This classification corresponds to the following history of moult (Summers 1983): new – moulted within the last 12 months; moderately worn – skipped one moult; worn – skipped one or perhaps two moults; very worn – skipped two or more moults.

Only adult birds were considered and the birds were aged on plumage characteristics (Delacour 1954). The geese are easily sexed for the males are basically white and the females brown. Lesser Magellan Geese occur in two forms which can be distinguished only in the plumage of the male; in one the breast and under-parts are barred black (these breed predominantly in Tierra del Fuego), whilst in the other the breast and under-parts are white (these breed on the mainland of Patagonia) (Figure 1).

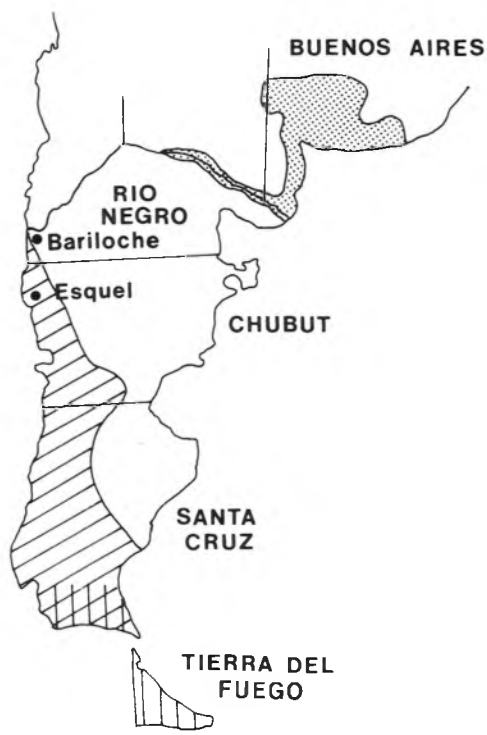

Figure 1. Southern Argentina showing the provinces where the samples were collected, the breeding range of the barred (vertical hatching) and white-breasted (diagonal hatching) forms of the Lesser Magellan Goose, and the wintering area (stippled) in Buenos Aires Province (redrawn from Plotnick 1961b).

Wildfowl 36 (1985): 42–44

Intermediates with less than complete barring also occur. The breeding ranges of the two forms overlap only in southern Santa Cruz (Figure 1) (Plotnick 1961a). The males in our sample were categorised as either "barred", "white-breasted" or "intermediate", thus identifying from which part of Patagonia they originated.

Results

The results (Table 1) show that in all parts of the breeding and wintering range examples of birds with worn primary tips occur, indicating that moult-skipping occurs in the Lesser Magellan Goose. Those from Buenos Aires Province refer only to migrants, for none breeds in this locality. Therefore moult-skipping and migration are not incompatible.

Males of the barred form breed primarily in Tierra del Fuego and most of these are migrants. Unfortunately, examples of barred males were obtained only from the southern provinces and there was none from Buenos Aires Province. Therefore we cannot say that moult-skipping occurs in the population that migrates the furthest.

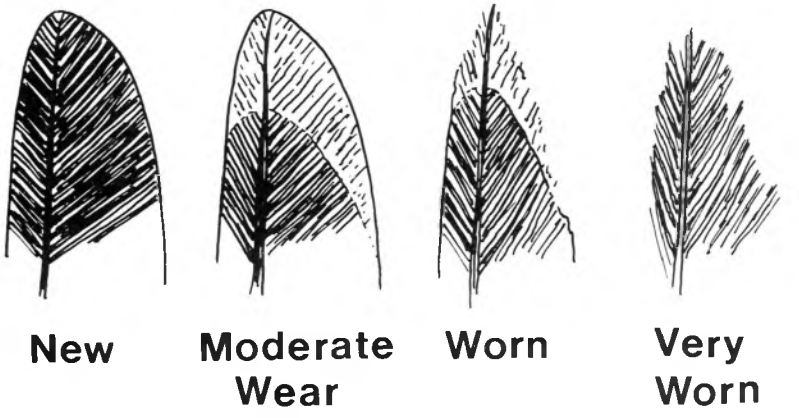

Figure 2. Different states of wear recorded for the longest primary.

Table 1. The frequency of occurrence of different states of wear to the tip of the longest primary in adult Lesser Magellan Geese from different localities in Argentina.

				Wear to tip of longest primary			
Locality	Date(s)	Sex	Form	New	Moderately worn	Worn	Very worn
Buenos Aires Prov.	Apr, Jun, Jul	F		3		1	
,, ,, ,,	Jun, Jul	M	White-breasted	1	3		
,, ,, ,,	Jun, Jul	M	Intermediate	2	1		
Bariloche, Rio Negro Prov.	9 Aug 81	F				1	
,, ,,	,,	M	White-breasted	2		1	
Esquel, Chubut Prov.	20 May 81	F		2	1	2	
,, ,, ,,	,,	M	White-breasted	4	2		
,, ,, ,,	8 Jun 84	M	White-breasted	25	7	8	
Chubut Prov.	Jan	F				2	
,, ,,	,,	M	White-breasted	1			
,, ,,	,,	M	Barred			1	1
Santa Cruz Prov.	May, Dec	F		1	1		
,, ,, ,,	Dec	M	Barred			1	
Tierra del Fuego	Apr, May	F		1	1		
,, ,, ,,	Feb, Mar, Apr, Jul	M	Barred	5	1	1	
,, ,, ,,	Feb, Mar	M	Intermediate		1		1

Discussion

A possible reason for moult-skipping is that energy and nutrients are saved, at the expense of maintaining the efficiency of the wings for flight (Summers 1983). The loss of flight efficiency is perhaps not so important in the Greater Magellan Goose resident in the Falkland Islands, and the populations of Lesser Magellan Geese which winter close to where they breed, e.g. in Rio Negro and Chubut Provinces. However, it appears that moult-skipping also occurs in the migrant populations which winter in Buenos Aires Province, suggesting that the state of wear of the flight feathers is not critical to these migrants. Further examples are necessary to confirm that moult-skipping is as common in the barred, and largely migrant form, as it is in the white-breasted form.

Acknowledgements

We should like to thank the curators of the Museo Argentino de Ciencias Naturales and British Museum of Natural History for making skins available to us, and J.H. McAdam for commenting on the draft.

Summary

Circumstantial evidence from the state of wear of the tip of the primaries of Lesser Magellan Geese *Chloëphaga picta picta* indicates that birds from both resident and migrant populations may skip the annual wing moult; a feature first described for the Greater Magellan Goose *C. p. leucoptera* in the Falkland Islands.

References

Crawshay, R. 1907. *The Birds of Tierra del Fuego.* Quaritch, London.

Delacour, J. 1954. *The Waterfowl of the World,* Vol. I. Country Life, London.

Goodall, J.D., Johnson, A.W. & Philippi, B.R.A. 1951. *Las Aves de Chile,* Vol 2. Platt Establecimientos Gráficos S.A., Buenos Aires.

Plotnick, R. 1961a. La avutarda de pecho rayado. Zoogeografía, sistemática y control. *Instituto de Patologia Vegetal. IDIA,* 157: 9–22.

Plotnick, R. 1961b. Migración de las avutardas. *Instituto de Patologia Vegetal. IDIA* 167: 3–13.

Summers, R.W. 1983. Moult-skipping by Upland Geese *Chloëphaga picta* in the Falkland Islands. *Ibis* 125: 262–6.

Summers, R.W. 1985. Demographic variations in the movements of Upland Geese *Chloëphaga picta and Ruddy-headed geese Chloëphaga rubidiceps* in the Falkland Islands. *J. Zool. Lond.* 206: 1–15.

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