The absence of flightless moult in the Ruddy-headed Goose in Argentina and Chile

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Scott (1954) made a series of observations on wildfowl during an expedition to Tierra del Fuego and he reported that sheldgeese (the species were not recorded): 'may not become flightless during moult. We have seen geese in various stages of raggedness, some with several primaries missing—others with complete new wings.'

I investigated the apparent absence of a flightless moult in the Ruddy-headed Goose *Chloëphaga rubidiceps* by examining museum skins.

Methods

The skin collections at the Museo Argentino de Ciencias Naturales in Buenos Aires, British Museum of Natural History, Smithsonian Institution Washington D.C., and American Museum of Natural History were examined.

Birds were aged on the colour of the wing coverts (Delacour 1954). Those with white/pale yellow median coverts and glossy green greater coverts were classed as 'adult', and those with some grey median coverts and grey greater coverts were 'first-year'. The state of wear of the primaries was described as follows; N—fully grown new feathers with little or no wear and coloured black, O—fully grown old feathers with some or considerable wear and faded to brown.

Results

In continental South America Ruddy-headed Geese breed only in southern Magallanes, Tierra del Fuego and Santa Cruz province of Argentina. They arrive in Tierra del Fuego in early September and migrate northwards in April to winter in southern Buenos Aires province (Ripley 1950; Johnson 1965). The data were arranged according to whether the bird was collected on the breeding or wintering area (Table 1). Only adult birds were considered.

In winter birds fall into four groups; those with new inner and old outer primaries, those with old inner and new outer primaries, one bird with all new feathers,

Table 1. The state of wear of individual primaries of Ruddy-headed Geese collected in the wintering area (A, Tres Arroyo; B, Los Ingleses, Ajo) **in Buenos Aires Province, and the breeding area** (C, Estancia Viamonte, Rio Grande; D, Chilean Isla Grande) **in Tierra del Fuego.** Feathers classified as: N = New, O = Old, I = Intermediate wear, G = Growing.

No.	Date	Locality	Left Wing										Right Wing									
			1	2	3	4	5	6	7	8	9	10	1	2	3	4	5	6	7	8	9	10
Wintering Area																						
1	7.6.1931	A											N	N	N	N	N	N	N	N	O	O
2	7.6.1931	A											N	N	N	N	N	N	N	N	O	N
3	7.6.1931	A											N	N	N	N	N	N	N	O	N	I
4	7.6.1931	A											O	O	O	O	O	O	O	O	N	N
5	7.6.1931	A											O	O	O	O	N	O	O	N	N	N
6	29.6.1909	B	N	N	N	N	N	N	N	N	O	O	N	N	N	N	N	N	N	O	O	O
7	16.5.1909	B	N	N	N	N	N	N	N	N	N	O	N	N	N	N	N	N	N	N	N	N
8	29.6.1909	B	O	O	O	O	O	O	O	N	N	O	O	O	O	O	O	O	O	N	N	N
9	16.5.1909	B	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
10	1.9.1894	A	N	N	N	N	N	N	N	N	G	N	N	N	N	N	N	N	N	N	G	N
Breeding Area																						
11	17.4.1972	C	O	O	O	O	O	O	O	O	O	N	O	O	O	O	O	O	O	O	O	N
12	18.3.1915	D	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O
13	18.3.1915	D	N	N	N	G	N	N	I	G	O	I	N	O	O	O	N	N	O	I	I	I
14	18.3.1915	D	N	N	N	N	N	N	N	G	O	O	N	N	N	N	N	N	N	O	O	O

Note. Only the right wings of the birds in the Buenos Aires Museum were examined.

and a bird who was growing only the ninth primary on both wings (Table 1). Of the four birds collected in autumn on the breeding grounds, one had old primaries except the tenth, one had all old primaries, one had irregular groups of primaries of three generations and was growing primaries on only one wing, and lastly one bird had new inner and old outer primaries and was growing the eighth primary on one wing (Table 1).

This unusual pattern of moult may be retained when birds are brought into captivity, because a skin (no. 1456) from the collection at the Wildfowl Trust, Slimbridge, had a combination of old and new primaries in a full wing.

Discussion

The moult of wildfowl is normally characterized by a period of flightlessness when the primaries and secondaries are shed and regrown simultaneously. Scott's (1954) observations of sheldgeese with ragged wings suggest that these birds were in a moult which did not involve a flightless period. Specimens 13 and 14 (Table 1) support Scott's observation. The sequence of moult of primaries is irregular and moult appears to be incomplete since two, and sometimes three, generations of primaries may be found in one wing.

One might expect adults in autumn to be in final stages of wing moult in readiness for northward migration. However, one still had all old primaries on 18 March and another had only one new primary on 17 April. The birds from the wintering area confirm that birds migrate north with many old primaries. Moult may be continued in spring as demonstrated by the bird shot on 1 September shortly before southward migration.

There are approximately equal numbers of birds with new inner and old outer primaries, and with old inner and new outer primaries in Table 1. A possible interpretation of this is that Ruddy-headed Geese take two seasons (autumn and spring) to moult their primaries, alternating between moulting inner and outer primaries. Alternatively they may take two years to moult the primaries, moulting inner primaries in one year and outer primaries in the next. Those with primaries at an intermediate state of wear may have moulted these feathers at a different season from the old and new primaries.

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Summary

The primaries of 14 adult Ruddy-headed Geese *Chloëphaga rubidiceps* from Argentina and Chile were examined. Incomplete moult was carried out in autumn (March) on the breeding ground and in spring (September) on the wintering ground. This moult does not involve a flightless period. Most birds had a combination of old inner and new outer primaries, or new inner and old outer primaries suggesting they moult inner and outer primaries in different seasons, or alternate years.

References

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