A reassessment of plumage characters in ageing Antarctic Terns

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Introduction

A tentative method of ageing Antarctic Terns *Sterna vittata* on plumage characteristics and moult was attempted by Tree & Klages (1998) based on data collected during a visit to Bird Island, Algoa Bay, in July 1998. Further work was carried out in late June and early September 1999 and during August and early September 2000 and birds ringed in the earlier seasons were recaptured, thus allowing for a reassessment of some of the features originally used. Further access to the available literature has expanded our knowledge of the situation relating to breeding and post-breeding plumage change in their natal areas. Throughout the extensive breeding range of this species egg-laying may take place any time from late October through to March. This very protracted breeding season of some four-and-a-half months gives rise to a very extended post-breeding moult and to a parallel sequence of juvenile and post-juvenile plumages. Further, Parmalee (1987) found that post-breeding birds collected in the vicinity of Anvers Island, Antarctic Peninsula, showed very variable body moult in that some specimens moulted quickly through non-breeding dress back into full nuptial dress whilst others took longer to complete moult with occasional birds still in non-breeding dress in September. This variability within a single population can only be exaggerated throughout the range of the species.

The following replaces that which appeared in the earlier paper.

Description

1. Bill colour

As in Tree & Klages (1988).

2. Crown cap

First year. White frons to mid-crown, streaking slightly into remainder of grey-black rear crown and nape.

Second year. Similar to first year birds with some very pale grey streaking appearing later in the season and advanced birds may then be inseparable from retarded third year birds although outer primaries are normally unworn.

Third year. Similar to second year birds but white replaced by a very pale grey, sometimes some white still showing. A few darker, often sharply demarcated, spots may appear on forecrown. Cannot be aged satisfactorily unless ringed earlier at a known age. Treated as adult.

Older. Similar to third year birds but often with some black remaining. The full black cap from the previous breeding season still intact on many birds on arrival up to early August, this being lost fairly rapidly but the degree of moult appears very variable, with some birds retaining or moulting straight back up to 50% of the black crown. Other birds may have black plumage already replaced by August/September.

3. Cheek stripe

First year. None.

Second year. Virtually none, although later in season as some grey underparts patchily assumed the beginnings of the stripe start to appear.

Older. In adult breeding dress a clearly defined white stripe. Some birds in breeding dress may have the stripe less well defined and with some slight grey streaking. It is possible that these are younger birds assuming full dress for the first time. Birds in non-breeding dress show an unclear stripe

dependent on the amount of underpart colouration retained.

4. Underparts

First year. White.

Second year. White. Older birds start assuming a few light grey feathers from July, younger birds from September. The older birds may have a good mixture of white, light and medium grey feathers by departure and may be inseparable from retarded third year birds except for wear on outer primaries.

Older. The grey of the underparts is only partially lost in non-breeding dress when a mixture of shades of grey results. Many adults arrive in this plumage whilst others moult out rapidly after arrival. Thereafter, variable moult back to full plumage. Many birds show mottled shades of grey but this assumes one hue on completion of moult back to breeding dress. It would appear from the small sample obtained to date that the race *sanctipauli*, with its much paler underparts, assumes the full colouration of the underparts as early as August.

5. Primary moult

As in Tree & Klages (1998) except that *Third year* should now be included with the *Older* birds and not treated separately. The range of active moult, even within nominate *vittata*, is very great.

The age structure example shown in the earlier article should now be ignored and we can only safely age first, second and older (adult) age groups. The corrected figures for the total winter catch then stand at first year (6.3%), second year (11.2%) and older (82.5%). That second year birds outnumber first year birds may indicate that the majority of the latter arrive later than the older age groups. This would not be evident in our trapping figures, as we did not catch any later than the 12 September. When trapping at Cape Recife in 1971 first year birds formed a far larger proportion (43%) of the catch with the majority caught in October into November; but there may also be roosting age biases at a mainland site because all 20 caught in August were first year birds. Despite this it still appears that these two age groups form a relatively small proportion of the overall population and this may support observations of the heavy predation of eggs and young suffered by the attentions of skuas, gulls and rats on the breeding grounds (e.g. Higgins & Davies 1996). Obviously there will be annual variation in productivity so a more accurate population structure may only be obtainable after several years work. Mortality after the first two years of life must be very low and potential longevity very high. Maybe some of these birds will even outlive the authors!

References

Higgins, P.J. & Davies, S.J.J.F. (eds). 1996. Handbook of Australian, New Zealand and Antarctic birds. Vol. 3. Snipe to pigeons. Oxford: Oxford University Press.

Parmelee, D.F. 1987. Unexpected plumage in Antarctic Terns *Sterna vittata* during the austral winter. Cormorant 15: 41–47.

Tree, A.J. & Klages, N.W.T. 1998. Ageing techniques and age structure of a mid-winter roost of Antarctic Tern. Safring News 27(1/2): 15–17.

Erratum

In the article:

Tree, A.J. & Klages, N.W.T. 1998. Ageing techniques and age structure of a mid-winter roost of Antarctic Tern. Safring News 27(1/2): 15–17.

the sentence on page 16, column 2 should be:

'. . . while the very low number of first year (juvenile) birds was also reflected in a count made on the 24th when some 1800 birds were carefully scanned with the aid of a telescope and only seven of this conspicuous age class seen . . .' *(18 000 birds should be 1800.)*