It is in group B that the greatest variability is found and in due course it is hoped to provide a list of the southern African species with notes on the relative length of P10 and thus how easy it is to find it. For instance, in putting my own records of birds examined onto moult cards I found that I had recorded P10 in the Indian Myna *Acridotheres tristis* and the Palewinged Starling *Onychognathus nabouroup* but not in the Redbilled Oxpecker *Buphagus erythrorhynchus*, i.e. the last species presumably has a smaller P10 which I did not notice. It is well known that lark genera (and species?) vary in this respect.

It is recommended that ringers recording the primary moult of species in Group B record only P1-9 unless they are taking a special interest in the species concerned and find that they can readily locate P10. For both Groups B and C standard practice is to place a large 'X' in the P10 boxes of the moult card to show that allowance has been made for P10.

R.K. Brooke, Percy FitzPatrick Institute of African Ornithology, University of Cape Town, RONDEBOSCH, 7700

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THE PRIMARY MOULT OF THE COMMON TERN IN THE SOUTHWESTERN CAPE; A RECORDING SYSTEM, OBSERVED PATTERNS, AND AN APPEAL FOR INFORMATION

L.G. Underhill and R.P. Prŷs-Jones

INTRODUCTION

The moult of terns (Sternidae) has in general been poorly studied. Primary moult patterns are generally complicated and there may be one, two or even three, active primary moult centres in each wing (Ginn & Melville 1983). This note presents a technique for recording primary moult in terns with multi-phase moult and gives a summary of known patterns of primary moult of Common Terns *Sterna hirundo* in the southwestern Cape Province, South Africa, between October and March, based on observations on 280 birds from a number of years.

No intensive study of the moult of the Common Tern has been published. In the Netherlands, by examining feathers dropped in roosts of Common Terns, Walters (1979) deduced that the first primary was shed between 3 and 6 July at the earlist, and that by August, when the last of the terns migrated, the most advanced birds had shed primary five. In Britain, 29 adults between mid-August and mid-September had an average moult score of 12,2, range 7-22 (Ginn & Melville 1983). Of 12 adults caught in Morocco on 8 September 1971, eight had not started moult, two were growing their first primaries and two their second (Pienkowski 1975). Primary moult data from 332 adults in Mauritania, during September and October 1973, indicated that 43 had started a second phase primary moult, which was usually begun after the first phase had reached primary six or seven (Harrison 1975). Of 33 birds aged as adults after a 'wreck' in late-April 1961 in the southwestern Cape, none were in active moult (Rowan 1962). In 130 adults in western Europe in the boreal spring, the second phase moult had been arrested at primary three in 10%, primary four in 40%, primary five in 39%, primary six in 5% and primary seven in 6%, and a few birds whose second phase had reached primaries five to seven displayed a third phase, arrested with just primary one or two new (C.S. Roselaar in Cramp 1985).

RECOMMENDED PRIMARY MOULT SCORING SYSTEM

Because of the unusual and unexpected multi-phase moult, most observers experience considerable difficulty in recording the moult score of terns. Consequently, in terms of the moult patterns now known to exist, about 10% of the available primary moult records were found to be unintelligible. However, the danger of forcing the data to fit anticipated patterns is a very real one, and it is possible that at least some of the discarded moult scores were genuine.

The following system of recording the primary moult of adult (older than first-year) Common Terns in southern Africa is recommended:

0	= Old feather (feather grown before the last breeding season).
1 to 4	= Growing feather (usual definitions).
5	= New feather of first phase.
6	= New feather of second phase.
7	= New feather of third phase.
8	= Feather of unknown age (last resort).

The chief difficulty in recording primary moult occurs when the first phase moult is complete, and the second phase moult is still active. The new primaries of the first phase tend then to be recorded as 'old'.

For first-year birds, it is convenient to define their first set of primaries as 'old' from the time of arrival. In their first year these birds have only one moult, and there is no difficulty in recording it.

KNOWN PATTERNS OF PRIMARY MOULT

ADULTS

Moult is not highly synchronised. The analysis below presents the primaries which were most frequently observed growing in each month. Individual birds may be up to two or three primaries ahead or behind; larger variation occurs, but is exceptional. Typical moult patterns for adults in each month are shown in Table 1.

October: Up to six primaries new, with primary four (P4) being most frequently the outermost growing primary. All had commenced moult.

November: P5 and P6 most frequently the outermost growing primaries.

December: P6 or P7 usually growing; the most advanced birds moulting P9 and starting second phase moult, which does not begin before P6 or P7 is new.

January: First phase moult mostly at P7, P8 or P9. Second phase moult at P1 or P2.

February: First phase moult reaches P10. Second phase moult at P2 or P3.

March: First phase complete in most birds, with the most retarded birds moulting P7. Second phase appears to stop soon after first phase is completed, at P4 or P5 (Snow 1967). One record of third phase moult observed on 31 March - 4666155552.

TABLE 1

TYPICAL MOULT PATTERNS OF COMMON TERNS
IN THE SOUTHWESTERN CAPE, OCTOBER TO MARCH

MONTH	ADULT	SAMPLE SIZE	FIRST-YEAR	SAMPLE SIZE
OCTOBER	5551000000	13	0000000000	2
NOVEMBER	5555310000	50	0000000000	7
DECEMBER	5555541000	43	0000000000	11
JANUARY	2555553100	47	1000000000	3
FEBRUARY	6415555551	51	4410000000	3
MARCH	6662555555	27	no records	0

FIRST AND SECOND-YEAR BIRDS

In October, first-year birds are quite readily identifiable from adults with their variegated dusky-grey (as opposed to uniform-grey) wing markings, but the distinguishing features becoming less marked with each passing month. Primary moult of first-year birds starts in January and February (Table 1). This conforms with the observations of Rowan (1962) who aged 78 casualties as first-year birds in April and May. She found that more than half the primaries had been replaced in 52, and less than half in 16, whilst ten had new primaries. However, as Rowan (1962) pointed out, the ageing criterion used (presence of dark shoulder mark or carpal bar) was not infallible, and it is possible that the ten birds with new primaries were not first-year birds. The first primary moult is completed between June and August; in the meantime a second starts between May and July (C.S. Roselaar in Cramp 1985). This second primary moult is slow, is frequently suspended, and is not completed until the following March to June, a third primary moult having started between December and February (C.S. Roselaar in Cramp 1985). It is not clear whether it is possible to separate second-year birds from adults on plumage characteristics.

APPEAL FOR INFORMATION

A more detailed analysis of the primary moult of the Common Tern is in progress and any moult data ringers wish to make available for this analysis would be most welcome. In particular, we would appreciate moult observations made this summer (October 1986 to April 1987), using the scoring system suggested in this note. Both observations which conform to the pattern of primary moult described here, and which contradict it, are required. All contributions will be acknowledged.

Besides the complications in the moult of terns, there are also complications in handling them (Cheke 1976, Vernon 1976, Waltner 1976). The best technique seems to be to catch them in small numbers, to keep them in very well-ventilated holding boxes and to process them as quickly as possible.

ACKNOWLEDGEMENTS

We are grateful to ringers who have made available their Common Tern data: J. Cooper, M. Fraser, H.P. Pfister, G.D. Underhill, B.C. van der Walt, M. Waltner and G.H. Wilson. We acknowledge support from the FRD of the CSIR.

REFERENCES:

Cheke, A. 1976. Tern mortality. Safring News 5(2): 20.

Cramp, S. (ed.) 1985. 'The Birds of the Western Palearctic'. Vol. IV. Oxford: Oxford University Press.

Ginn, H.B. & Melville, D.S. 1983. 'Moult in Birds'. B.T.O. Guide 19. Tring: British Trust for Ornithology.

Harrison, M.C. 1975. Tern ringing studies. In Dick, W.J.A. (ed.) Oxford and Cambridge Mauritanian Expedition 1973 Report. Cambridge: 47-51.

Pienkowski, M.W. 1975. Studies on waders and terns caught in Morocco. In Pienkowski, M.W. (ed.) Studies on coastal birds and wetlands in Morocco 1972. Joint report of the University of East Anglia Expedition to Tarfaya Province, Morocco, 1972, and the Cambridge Sidi Moussa Expedition 1972. Norwich: 62-87.

Rowan, M.K. 1962. Mass mortality among Europan Common Terns in South Africa in April-May 1961. Brit. Birds 55: 103-114.

Snow, D.W. 1967. 'A Guide to Moult in British birds'. B.T.O Field Guide No. 11. Tring: British Trust for Ornithology.

Vernon, C.J. 1976. Potential difficulty when ringing terns. Safring News 5 (1): 8.

Walters, J. 1979. The onset of the postnuptial moult in the Common Tern *Sterna hirundo* near Amsterdam. Ardea 67: 62-67.

Waltner, M. 1976. Common Tern - ringing observations. Safring News 5 (2): 19-20.

L.G. Underhill, Department of Mathematical Statistics, University of Cape Town, RONDEBOSCH, 7700.

R.P. Prŷs-Jones, Percy Fitzpatrick Institute of African Ornithology, University of Cape Town, RONDEBOSCH, 7700

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The following letter, first published in Safring News 2 (1), is reprinted here because its message is as topical today as it was thirteen years ago. (Ed)

Dear Sir/Madam,

Greetings in the name of Jesus.

Usually on a Sunday morning we go down to Grassy Park where we have our Sunday school and open air church meeting. But on this Sunday 4.2.73 I had a bit of throut trouble so by 9.15 I was still in bed when some of our children come in the kitchen with a story that some little birds is hanging from a tree in somebody's back yard (next street). So I looked through our