

# Ageing Slender-billed Curlews *Numenius tenuirostris*: a useful tip

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Plumage characters indicated by Cramp & Simmons (1983), Prater *et al.* (1977) and Vangeluwe *et al.* (1998) to separate juvenile Slender-billed Curlews *Numenius tenuirostris* from adults (colour pattern of flank/breast feathers, wing coverts, scapulars and tertials and extension of white at the tip of p8) are gradually lost during autumn and winter due to abrasion and moult. All authors indicate that the abrasion of unmoulted wing coverts and primaries is the only ageing criterion that can be used after mid-winter. The virtual impossibility of studying any living individual of this species means that plumage descriptions and morphometrics, as well as estimates of population trends and extinction risks, must be based almost entirely on data in museum collections (see e.g. Serra 1995, Harwood & Vangeluwe 1999). Feather abrasion does not always represent a reliable ageing character in museum specimens; firstly because correct evaluation requires a precise knowledge of collection date (which in many specimens is lacking or extremely vague) and secondly because storage conditions and pest attacks can have a major effect on feather structure.

Observation of a small sample of specimens of known age with new and unabraded primaries (four birds<sup>1</sup> in full juvenile plumage caught in July–September and five adults<sup>2</sup> caught in June–October in the final stages or soon after the end of primary moult) suggests that the colour pattern of the primary tips is a useful character for ageing this species.

Two juveniles had the dark distal portion of mid-wing primaries (p6–p8, numbered from the inner primary outwards) shaped like a curly bracket, with a pointed central wedge extending along the shaft towards the feather tip (Figure 1A). A further individual showed this pattern on p6 and p7 (the tip of p8 had a rounded margin) while in the last one this pattern was recognisable (though not as clear as in others) on p7 and p8, as p6 had a round margin with small indentations. The 5th primary was either shaped like a curly bracket (1 individual), or by an adult-like pattern (see below).

No pointed central wedge was ever observed among adults, whose primaries either ended with an irregular margin with a flat or convex shape and a central indentation (two individuals, Figure 1B) or with a large asymmetric indentation with rounded margins (one individual, Figure 1C), or with an intermediate pattern between the two (one individual).

These patterns can also be recognised in worn primaries (Figure 1 right), and are consistent with other ageing features, including abrasion. On a larger sample of museum specimens (Table 1), adult-like primaries were on average less abraded than those with juvenile characters ( $U=24.0$ ,  $P=0.01$ ).

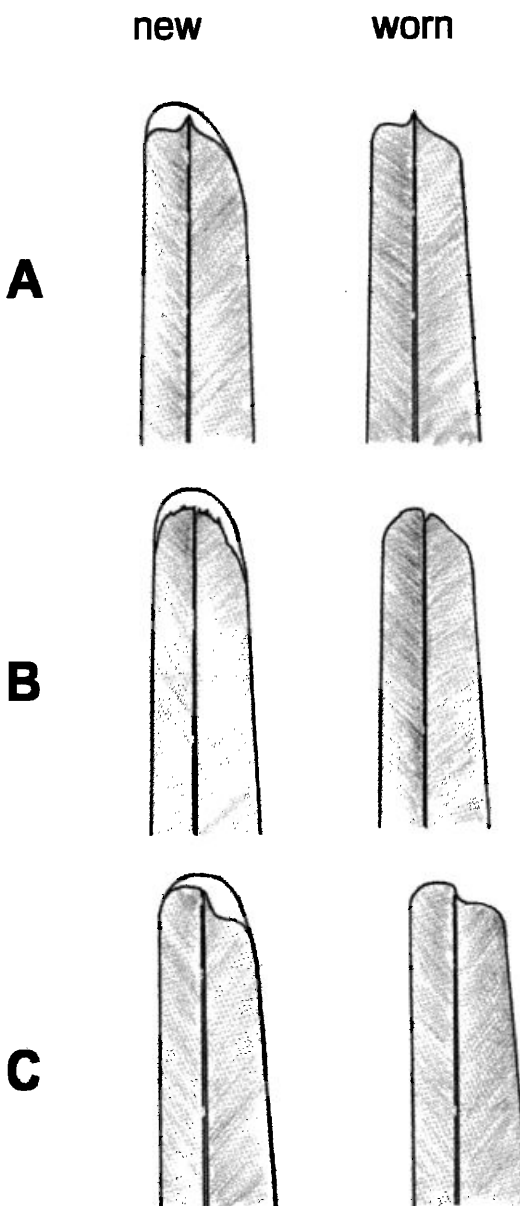


Fig. 1. Schematic representation of the shape of p7–p5 primary tips. A = juvenile primaries, B and C = adult primaries.

<sup>1</sup> #R38300 and #R7145 from Zoological Museum of Moscow State University; #CE33039 from Museo Civico di Storia Naturale “A. Doria”; #719 from Accademia dei Fisiocritici.

<sup>2</sup> #R72990 and #72991 from Zoological Museum of Moscow State University; #CE24092 from Museo Civico di Storia Naturale “A. Doria”; #530/1877 and #C941 from Museo Zoologico La Specola.



**Table 1.** Primary abrasion of 24 birds caught in spring, in relation to the shape of their feather tips. Abrasion is scored according to a scale ranging from 0 (fresh) to 3 (heavily worn). Letters indicating primary shape correspond to those used in Figure 1 (A = juvenile pattern, B and C = adult patterns). The two birds with an intermediate primary pattern include one adult and one first-year. Ageing in this case was based on the abrasion of wing coverts and on primary shape, which were large and rounded in the former individual and pointed in the latter.

Primary shape	Primary abrasion				Number of individuals
	0	1	2	3	
A		2	4	4	10
B, C, B/C		8	4		12
Intermediate (A/B, A/C)			2		2

Of 12 first-year birds aged according to the “curly bracket” shape of their central primaries (excluding therefore those in full juvenile plumage mentioned above), the great majority (10) showed this pattern on p7–p5 (6 also on p4 and 4 on p8), one on p8–p6 and another on p6–p5 only.

We suggest that the colour pattern of mid-wing primary tips (p7–p5) represents the most reliable ageing character for Slender-billed Curlews after the juvenile body feathers have

been moulted and abrasion has concealed the pattern of unmoulted wing coverts. This character is visible also in birds with worn primaries, is scarcely affected by long-term museum storage and can be correctly identified even by inexperienced observers.

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