



SHORT NOTE

## Partial moult involving all the greater coverts in first-year Nightingales, *Luscinia megarhynchos megarhynchos*, in Italy

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The European populations of the Nightingale *Luscinia megarhynchos megarhynchos* perform a moult strategy which involves a complete post-breeding moult in adults and a partial post-juvenile moult in first-years; both moults take place on the breeding grounds prior to autumn migration (Cramp 1988, Svensson 1992, Jenni & Winkler 1994). The post-juvenile moult includes the body feathers, between three and nine greater coverts, and occasionally the carpal covert, the smallest alula feather, and the innermost tertial (Jenni & Winkler 1994). Ginn & Melville (1983) and Cramp (1988) report that more than a single tertial may sometimes be moulted. After the post-juvenile moult, first-year Nightingales can be aged using the contrast between old and new greater coverts, that is still visible in spring and summer of the second calendar year (Svensson 1992, Jenni & Winkler 1994). Latitudinal variations in the extent of the post-juvenile moult have been described for many passerine species, with southern populations replacing a greater number of feathers (eg Fracasso 1985, Gauci & Sultana 1979, Jenni & Winkler 1994), but this information is lacking for the Nightingale.

Five adult and 13 juvenile Nightingales were trapped at a breeding site in a wetland area in the southern part of the Po Delta Regional Park (Ortazzo, near Ravenna, northern Italy; 44° 22'N 12° 18'E) from 14 to 21 July 2001. Their date of capture, and states of moult, plumage and fat scores, all suggested that the trapped birds belonged to the local breeding population. Nine first-years were still in full juvenile plumage and primaries were still visibly growing in four of them. The other juveniles had started moulting, two of them being in quite an advanced state. These were diffusely replacing body feathers, all greater coverts, the carpal covert, and marginal and median coverts; a single bird was also moulting two tertiaries and two alula feathers (Table 1). Their advanced moult state suggested that these two birds originated from early or first clutches: two clutches are known for the southern part of the breeding range of this species (Cramp 1988).

Such cases of total replacement of the greater coverts by juvenile Nightingales could have been under-recorded for a number of reasons, such as early post-natal movements or an inadequate number of summer captures in the southern part of the breeding range (Spina *et al* 2001). If 15% of Italian-born juveniles replace all the greater coverts, as our sample of 13 birds suggests, this could introduce some problems when ageing second-years in spring according to the current criteria. Other ageing features, such as the shape and colour of primary remiges and primary coverts and presence of contrasts among tertiaries or alula, may help in doubtful cases.

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**Table 1.** Moulting state (0 = old feather to 5 = fully grown new feather; Ginn & Melville 1983) of wing coverts and tertials of two juvenile Nightingales ringed at Ortazzo, Italy. Greater coverts numbered descendantly and tertials ascendantly. Cc = carpal covert; MaC = marginal coverts; MeC = median coverts; L = lesser; M = median; G = greater

Nightingale L697213 ringed on 17 July 2001

	Greater coverts										Tertials			Alula			Cc	MaC	MeC
	1	2	3	4	5	6	7	8	9	10	7	8	9	L	M	G			
Left	2	1	1	1	2	2	2	4	5	5	0	0	0	0	0	0	2	70% new 30% growing	all growing
Right	3	1	1	2	2	1	2	1	5	5	0	0	0	0	0	0	2	70% new 30% growing	all growing

Nightingale L697229 ringed on 19 July 2001

	Greater coverts										Tertials			Alula			Cc	MaC	MeC
	1	2	3	4	5	6	7	8	9	10	7	8	9	L	M	G			
Left	4	5	5	5	5	5	5	5	5	5	0	2	2	2	0	1	5	90% new 10% growing	90% new 10% growing
Right	4	5	5	5	5	5	5	5	5	5	0	2	2	2	0	0	5	90% new 10% growing	90% new 10% growing

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