

Brief reports • Tiedonantoja

Clutch-size reduction in the Pied Flycatcher *Ficedula hypoleuca* in North-West Africa

Paul Isenmann & Aïssa Moali

The Pied Flycatcher *Ficedula hypoleuca* at Kilpisjärvi, Finnish Lapland – the northernmost fringe (69°N) of the species breeding range in Western Europe – has a mean clutch size of 5.42 eggs (Järvinen & Lindén 1980, Järvinen 1980). This value is lower than the means for populations breeding in the central parts of the breeding range where clutch size generally varies between 6 and 7 (e.g., Berndt & Winkel 1967, Berndt et al. 1981, v. Haartman 1967).

To explain the difference between the northernmost populations and others, Järvinen (1986) stated that the birds at Kilpisjärvi are faced with a particularly harsh and unpredictable environment which often delays the laying period and thus, reduces clutch size. Slagsvold (1981) also argued that “the relatively small clutches laid in the peripheral parts of the breeding range... may simply reflect that conditions for reproduction there are poor”.

As the Pied Flycatcher breeds as far south as Morocco, Algeria and Tunisia (between 36° and 33°N) in North-West Africa (Heim de Balsac & Mayaud 1962), we examined whether the clutch size at the southern edge of the breeding range is also small.

We collected the few and scattered data available for this area (Table 1). They show, indeed, the predicted smaller clutches. The average (\pm SD) of 35 clutches was 5.22 \pm 0.72.

This is due to: 1) the birds having to raise their young under the shortest day length met with by this species (in June 14–15 h, but 17–18 hours in southern Scandinavia or 24 h in northern Scandi-

navia) and 2) the possible poor quality of their habitats (generally between 1300 and 2200 m a.s.l. in coniferous woods of *Cedrus atlantica*, sometimes mixed with the semi-evergreen *Quercus faginea* and the evergreen *Q. ilex* and *Q. suber*; for the reduction of clutch size in coniferous habitats, see Gezelius et al. 1984 and Zang 1975).

References

- Berndt, R. & Winkel, W. 1967: Die Gelegegröße des Trauerschnäppers *Ficedula hypoleuca* in Beziehung zu Ort, Zeit, Biotop und Alter. — *Vogelwelt* 88:97–136.
- Berndt, R., Winkel, W. & Zang, H. 1981: Über Legebeginn und Gelegestärke des Trauerschnäppers *Ficedula hypoleuca* in Beziehung zur geographischen Lage des Brutortes. — *Vogelwarte* 31:101–110.
- Etchécopar, R. D. & Hüe, F. 1964: Les Oiseaux du Nord de l'Afrique. — Boubée, Paris.
- Gezelius, L., Grahm, M., Källander, H. & Karlsson, J. 1984: Habitat-related differences in clutch size of the Pied Flycatcher *Ficedula hypoleuca*. — *Ann. Zool. Fennici* 21: 209–212.
- v. Haartman, L. 1967: Geographical variations in the clutch-size of the Pied Flycatcher. — *Ornis Fennica* 44:89–98.
- Heim de Balsac, H. & Mayaud, N. 1962: Les Oiseaux du Nord-Ouest de l'Afrique. — Lechevalier, Paris.
- Järvinen, A. 1980: Population dynamics in the Pied Flycatcher *Ficedula hypoleuca* at subarctic Kilpisjärvi, Finnish Lapland. — *Ornis Fennica* 57:17–25.
- Järvinen, A. 1986: Clutch size of passerines in harsh environments. — *Oikos* 46:365–371.
- Järvinen, A. & Lindén, H. 1980: Timing of breeding and the clutch size in the Pied Flycatcher *Ficedula hypoleuca* in Finnish Lapland. — *Ornis Fennica* 57:112–116.
- Slagsvold, T. 1981: Clutch size and population variability in birds: a test of hypotheses. — *Oecologia* 49:213–217.
- Snow, D. 1952: A contribution to the ornithology of North-West Africa. — *Ibis* 94:473–498.
- Zang, H. 1975: Populationsstudien am Trauerfliegenschnäpper *Ficedula hypoleuca* im Bergwald des Harzes als einem suboptimalen Habitat. — *Vogelwelt* 96:161–184.

Received April 1987, accepted May 1987

Authors' addresses: Paul Isenmann, Centre L. Emberger (CNRS), B.P. 5051, 34033 Montpellier, France and Aïssa Moali, Département de Biologie, Centre Universitaire, Tizi-Ouzou, Algeria

Table 1. Clutch-sizes of the Pied Flycatcher in Algeria and Morocco (North-West Africa). The sources are Heim de Balsac & Mayaud, 1962 (1), Etchécopar & Hüe, 1964 (2), Snow, 1952 (3), and Moali, unpubl. (4).

Region	Clutch-size				Source
	4	5	6	7	
Morocco, Algeria	4	10	5	1	(1)
Morocco, Algeria	1	4	1	–	(2)
Algeria	–	3	–	–	(3)
Algeria	–	1	5	–	(4)