

An additional ageing criterion for Penduline Tits *Remiz pendulinus*

R. MARINÉ, J. FIGUEROLA & R. GUTIÉRREZ

Age determination in Penduline Tits Remiz pendulinus has largely been based on the colour contrast that young birds show between moulted and unmoulted greater coverts. However, in Southern Europe some young birds are likely to moult all the greater coverts. The usefulness of the alula and tertials as an additional ageing criterion was tested in a sample of 156 wintering Penduline Tits trapped in north-east Spain. Young birds showed an unmoulted alula, as opposed to the moulted one of adult birds. No occurrence of tertial moult was detected. A small proportion of young birds (5%) moulted all of their greater coverts, but not the central feather of the alula. Therefore, partial moult of the greater coverts cannot be used as the only ageing criterion in Southern Europe, and should be supplemented by examination of the alula.

Key words: Penduline Tit, *Remiz pendulinus*, ageing, partial moult.

Raimon Mariné. Consell de Cent 366, 4rt, 2a. 08009 Barcelona.
 Jordi Figuerola. Psg. St. Gervasi 59, 7è, 2a. 08022 Barcelona.
 Ricard Gutiérrez. Reserves Naturals Delta del Llobregat. Còrsega 329, 5è. 08037 Barcelona.
 Rebut: 04.03.94; Acceptat: 25.05.94

Adult Penduline Tits *Remiz pendulinus* undergo a complete summer moult after breeding, while first year birds have a partial summer moult, in which normally some outer greater coverts and most of the juvenile (Euring code 3J) coloration on the nape and crown are retained (Busse 1984, Svensson 1992, Cramp 1993). Contrast of the greater coverts has been used as the main ageing criterion for this species. However, a complete moult has been reported for these birds in Iberia (Svensson 1992). If this is so, no reliable

ageing criterion is available for birds in Southern Europe.

During the winters 1990-91, 1991-92 and 1992-93, 156 Penduline Tits were trapped in the Llobregat Delta (Barcelona, NE Spain, 41.19N, 02.01E). Trapping was carried out by means of one to four mist-nets with a tape-lure. For each bird, the number of unmoulted greater coverts in both wings, the colour of the edge of the central feather of the alula, and the tertial moult pattern were recorded. Additionally, in most of the birds, the right wing was

photographed and later the colours were contrasted with the original record in the field sheet.

A total of 48 birds (30.7%) showed complete moult of the greater coverts and the alula. Most of these birds were probably adults, although a possible complete moult in first year individuals cannot be discarded (Svensson 1992). 100 birds (64.1%) were easily aged as first-year by their unmoulted greater coverts. All of them presented the central alula feather also unmoulted. Finally, eight individuals (5.1%) moulted all of the greater coverts, but not the central alula feather. All the birds with an unmoulted alula also showed unmoulted tertials.

According to the ageing criterion based on the contrast in the greater coverts, this 5% of the birds would have been aged as adults. However, the other ageing criteria suggest that they could, in fact, be first year birds. Six birds aged as young birds according to the alula criterion were retrapped in later seasons, in all cases showing the adult alula pattern. Five other birds ringed as adults were also controlled in later seasons, showing no inter-year change in the alula pattern.

The central alula feather may therefore be a more reliable ageing method than unmoulted greater coverts. The contrast between abraded (i.e. unmoulted) and fresh (i.e. moulted) tertials has been suggested as another criterion for age determination in the Penduline Tit (G. Gargallo, pers. com.), but no bird showed this feature in our sample. Nevertheless, the moulting frequency of the tertials could vary from year to year, as has been recorded in other passerines (Senar & Copete 1992).

More detailed data and the capture-recapture of juvenile birds (Euring code 3J) before and after their first moult (code 3) would be the best way to confirm the presumed complete moult of southern

Penduline Tits and the suitability of the use of the alula for ageing birds. In addition, since the Iberian wintering population is mainly composed of individuals from Central Europe (Zink 1981, Cramp 1993, Valera et al. 1993), with just a small number of local breeders (Ferrer et al. 1986), the described alula criterion could also be useful for ageing northern populations. •

ACKNOWLEDGEMENTS

José Luis Copete and Juan Carlos Senar commented on an earlier draft and Michael Lockwood improved the English. We are also grateful to Dr. Norbert Theiss and Dr. M. Schönfeld, for their valuable comments on the manuscript, and to Helena Arbonès, Carles Barriocanal, Lluís Brotons, Santiago Galán, Núria Rodríguez and Sergi Sales for their help and friendship in the fieldwork. The Direcció General del Medi Natural allowed us to trap the birds at the nature reserves.

RESUMEN

Un criterio adicional para el datado del Pájaro Moscón *Remiz pendulinus*

Los ejemplares adultos de Pájaro Moscón realizan una muda completa tras la cría, mientras los individuos de primer año efectúan una muda estival parcial, tras la cual retienen algunas cobertoras mayores. Algunos autores han sugerido la posibilidad de que una parte de los individuos jóvenes muden todas las cobertoras mayores, pudiéndose entonces confundir con adultos.

De una muestra de 156 Pájaros Moscones, 48 presentaron muda completa de cobertoras mayores y álula (individuos adultos); 100 presentaban un número variable de cobertoras mayores retenidas y la pluma central del álula no mudada (indivi-

duos de primer año) y ocho individuos mudaron todas las cobertoras mayores, pero no la pluma central del álula (individuos de primer año). Se concluye que la muda de la pluma central del álula es un criterio adicional válido para el datado del Pájaro Moscón en poblaciones meridionales.

RESUM

Un criteri adicional per a la datació del Teixidor Remiz pendulinus

Els individus adults del Teixidor Remiz pendulinus realitzen una muda completa després de la cria, mentre que els ocells del primer any efectuen una muda estival parcial, després de la qual retenen algunes cobertores grans. Alguns autors han suggerit que una part dels ocells joves mudarien totes les cobertores grans, i que seria possible confondre'ls amb ocells adults.

D'una mostra de 156 Teixidors, 48 presentaren muda completa de les cobertores grans i àlula (individus adults); 100 presentaven un nombre variable de cobertores grans retingudes i la ploma central de l'àlula no mudada (individus de primer any). Es suggereix que la ploma central de l'àlula és un criteri més fiable que la muda de les cobertores grans per determinar l'edat del Teixidor en les poblacions més meridionals.

REFERENCES

- BUSSE, P. 1984. Key to sexing and ageing of European passerines. *Beitrag Naturkunde Niedersachsens* 37: 1-224
- CRAMP, S. & PERRINS, C. M. (eds.). 1993. *The Birds of the Western Palearctic*. Vol. VII. Oxford: Oxford University Press.
- FERRER, X., MARTINEZ-VILALTA, A. & MUNTANER, J. 1986. *Història Natural dels Països Catalans*. Vol. 12. Ocells. Barcelona: Enciclopèdia Catalana.
- SENAR, J. C. & COPETE, J. L. 1992. Variación en el número de terciarias mudadas y su utilidad para el datado del Lúgano *Carduelis spinus*. *Butll. GCA* 9: 7-9.
- SVENSSON, L. 1992. *Identification Guide to European Passerines*. 4th edition. Stockholm: Svensson.
- VALERA, F., REY, P., SANCHEZ-LAFUENTE, A. M. & MUÑOZ-COBO, J. 1993. Expansion of Penduline Tit (*Remiz pendulinus*) through migration and wintering. *Journal für Ornithologie* 134 (3): 273-282.
- ZINK, G. 1981. *Der Zug europäischer Singvögel*. 3. Lieferung Mäggingen.