NOTE BRÈVE

DO MAN-MADE NESTING SITES PROMOTE THE INCREASE IN NUMBERS AND SPATIAL SPREAD OF THE EURASIAN CRAG MARTIN *PTYONOPROGNE RUPESTRIS* IN EUROPE?

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RÉSUMÉ

L'adoption de sites artificiels de nidification favorisera-t-elle l'accroissement de l'aire de distribution et des effectifs chez l'Hirondelle de rochers *Ptyonoprogne rupestris* en Europe ?

Un groupe formé de quelques espèces de petits passereaux dépend pour nicher de sites artificiels offerts par l'homme dans ses cités. Une nouvelle espèce, l'Hirondelle de rochers, est en train de rejoindre ce groupe. En effet, cette hirondelle utilise, depuis ces 20 dernières années en Europe, de plus en plus fréquemment les maisons et d'autres constructions pour s'y reproduire. Cette note voudrait attirer l'attention sur le fait d'étudier ce phénomène dès son début et, surtout, ses conséquences sur un accroissement prévisible de l'aire de distribution et des effectifs de cette espèce. Quelques indices montrent que ce phénomène est au demeurant déjà amorcé. Le problème de la concurrence interspécifique avec l'Hirondelle rustique *Hirundo rustica* et l'Hirondelle de fenêtre *Delichon urbica* est aussi posé.

Several small bird species in the Western Palearctic are dependent on man-made nesting sites in cities and villages for their reproduction. This is the case for the Common Swift (*Apus apus*), the Pallid Swift (*Apus pallidus*), the Barn Swallow (*Hirundo rustica*), the House Martin (*Delichon urbica*), and to a lesser extent, the Alpine Swift (*Apus melba*), the Red-rumped Swallow (*Hirundo daurica*) and the Black Redstart (*Phoenicurus ochruros*). Since some of these species have widely adopted buildings as nesting sites, they could spread considerably and increase their numbers, especially in those areas where natural nesting sites are not available. In this respect, growing urbanization in the 19th and 20th centuries has greatly favoured all of these species's population dynamics. Nevertheless, any detailed information on the process for each species is lacking. There are some indications that a supplementary species, the Eurasian Crag Martin

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(*Ptyonoprogne rupestris*), is currently joining the panel of rupestrian species using more or less exclusively man-made sites for their nesting. The aim of this note is to point out that this species should offer an excellent opportunity to study how this behavioural switch will or will not favour an increase in number followed by a spatial and geographical spread (a suggestion already made by Cramp, 1970).

In the Western Palaearctic, the Eurasian Crag Martin has a circum-Mediterranean and Alpine breeding range where it naturally inhabits warm temperate, craggy areas from the sea-level up to 2 500 m. The nest looks like that of the Barn Swallow *Hirundo rustica*, and natural nesting sites are usually under overhanging cliff faces or in caves. The species breeds in seclusion or in rather loose and small groups. Man-made nest sites are outside small and large houses or on churches and cathedrals, located in towns and cities, as well as under bridges and road tunnels, in quarries, on reservoir walls, viaducts... (Glutz von Blotzheim & Bauer, 1985; Cramp, 1988). A brief historical review of man-made nesting of this species in Europe shows that the first artificial nesting records were documented from the mid-19th century in Savoie/France and Switzerland. This nesting trait remained exceptional or at least rare until the mid-20th century. During the subsequent 30 years (1950 to 1979) published records increased but authors always underlined that this trait remained infrequent. In France, for example, artificial nesting appeared and developped in the same period of time at different locations (Alps, Pyrenees and Massif Central) (Isenmann, 2000). The same occurred in other Alpine countries or regions such as Austria and Bavaria/Germany (overview in Niederfriniger, 1973), northern Italy (Niederfriniger *et al.*, 1996) and Switzerland (Schifferli *et al.*, 1980).

During the last 20 years (1980-1999), nesting at man-made sites has become common and widespread throughout the species's breeding range in Europe (in North Africa, on the contrary, the species remains conservative since no artificial site is hitherto known). Countries where published information clearly show that an increasing number of pairs now breed at man-made sites are: Austria (Dvorak *et al.*, 1993), Bavaria/Germany (Bezzel & Fünfstück, 1995; Wittenberg, 1999), Bulgaria (Uhlig, 1992), France (Isenmann, 2000), Italy (Brichetti, 1987; Stephan, 1991; Niederfriniger *et al.*, 1996), Spain (Purroy, 1997) and Switzerland (Schmid *et al.*, 1999; Hauri, 2000). In most of these countries, the Crag Martin also shows spatial expansion indicated by: 1) distribution gaps within the breeding range which have been filled, 2) formerly inhabited areas which have been recolonized; 3) new breeding evidence from regions or countries where the species had never been known to have bred before. Adoption of man-made nesting sites occurs in areas more or less remote from human settlements (bridges, viaducts, reservoirs...) as well as in towns, and to a lesser extent, in cities (*e.g.*, Genoa and Verona in Italy, Alès and Nice in France, Berne and Fribourg in Switzerland). The species's spatial spread is particularly evident through breeding on artificial nest sites, but in some newly colonized areas such as in the French Jura, Lower Austria, and Romania, only natural sites have been used. In three other countries (Cyprus, Greece and its islands, Turkey) nesting on artificial sites is also mentioned but without any comment on a possible recent trend.

As it is now ascertained that breeding at man-made nest sites has become frequent throughout the species's breeding range in Europe during the last 20 years, and assumed that climatic changes (mild winters, warmer summers) may have contributed to the northward geographical spread, two questions arise: 1) are there other explanations besides the climatic changes, and 2) what will be the

possible consequences of such a change in nesting habits? To address the first question it should be underlined that in many areas within the breeding range, the number of new bridges, motorway viaducts, and buildings has appreciably increased in recent decades, providing a wide availability of nesting support. This argument has been put forward by Uhlig (1992) to explain the species's expansion in the Bulgarian mountains. But this is only a partial explanation because many man-made supports recently adopted by the species are old houses or churches that have existed for a long time. Another explanation would be that the species only recently realized that man-made supports result in a higher number of potential nesting sites. If these sites also offer good breeding success, then such nest supports will be increasingly adopted. Concerning the second question, it is suggested that this species is becoming more and more dependent on man-made nest sites, possibly becoming highly dependent on them. This has happened for two species of swallow: the Barn Swallow *Hirundo rustica* and the House Martin *Delichon urbica*. The dates at which the two latter species became nearly exclusively dependent on nesting sites supplied by man are not known (19th century?). What is evident, is that the switch to man-made urban and rural nesting sites allowed both species an unprecedented demographic increase and spatial expansion. We remember that their natural nesting sites were in fact rather restricted: large tree-holes, river banks, and rocky caves for the Barn Swallow, and cliffs and outcrops for the House Martin.

To summarize, there is a good opportunity to monitor, from the beginning, this trend of the Crag Martin, especially the consequences the new nesting habits will have on the species's already increasing population and geographical expansion. The new breeding habits of this species also pose the problem of competition for nesting sites and food resources with the two above mentioned swallow species, which are often nesting neighbours.

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