

Features of the Wallcreeper *Tichodroma muraria* breeding habitat in the West Carpathians

Miroslav SANIGA

Summary

Characteristics of the wallcreeper breeding habitat were studied at fifteen breeding haunts in the mountains of the West Carpathians during 1982–2003. In the West Carpathians, wallcreepers bred in mountainous areas with steep rock faces and precipitous boulder-strewn slopes, limestone being the preferred substrate. Some pairs bred in rocky gorges of mountain streams at an altitude of 500–1 000 m above sea level, while others occupied limestone rock faces without running water at an altitude of 500–1 800 m. Typical habitat features of the wallcreeper breeding haunts are characterized as follows: 1) considerably structured surface of rock faces (overhangs, crevices, fissures and ledges) covered with clumps of vegetation; 2) sections of rock faces with various levels of sunlight exposure or rock faces with scattered trees, which shade parts of the rock walls during the day; 3) presence of suitable potential nest- and roost-crevices inaccessible to mammalian predators, particularly stoat *Mustela erminea* and beech marten *Martes foina*.

Zusammenfassung

Die Charakteristika des Mauerläufer-Bruthabitats wurden an 15 Brutorten in den Westkarpaten von 1982–2003 erforscht. Hier brüteten sie in Bereichen mit steilen Felswänden und steil abfallenden, mit Geröllhalden übersäten Abhängen, wobei Kalkgestein die bevorzugte Grundlage ist. Einige Paare brüteten in felsigen Schluchten von Bergflüssen in einer Höhe von 500–1 000 m ü.d.M., während andere Kalkfelswände ohne fließendes Wasser in einer Höhe von 500–1 800 m besetzten. Typische Habitatscharakteristika der Mauerläufer-Brutplätze werden wie folgt beschrieben: 1) Auffallend strukturierte Oberfläche der Felswände (Überhänge, Risse, Spalten, Simse) mit Klumpen von Vegetation bedeckt. 2) Abschnitte von Felswänden mit unterschiedlicher Sonneneinstrahlung oder Felswände mit einzelstehenden Bäumen, welche Teile während des Tages beschatten. 3) Vorhandensein von passenden möglichen Nest- und Schlafplätzen in Spalten, unzugänglich für räuberische Säugetiere, besonders Hermelin *Mustela erminea* und Steinmarder *Martes foina*.

Sunto

Le caratteristiche degli areali di nidificazione del picchio muraiolo sono state esaminate tra il 1982 ed il 2003 sulla base di 15 siti nei Carpati occidentali. In aree prettamente rocciose con versanti detritici di estrema pendenza, di preferenza calcarei. Alcune coppie nidificano in gole rocciose di torrenti ad un'altitudine che varia dai 500 ai 1000 m slm, mentre altre si sono insediate tra i 500 e 1800 m slm in pareti calcaree senza presenza di acqua corrente. Le caratteristiche più evidenti delle aree di nidificazione del picchio muraiolo vengono così descritte: 1) Struttura delle pareti rocciose particolarmente articolata (strapiombi, crepacci, fenditure, cornice (mensola, cimasa), coperta da zolle di vegetazione. 2) Tratti di parete rocciosa soggetta a diversi gradi di insolazione o pareti rocciose con alberi solitari che ombreggiano l'areale durante il giorno. 3) Presenza di varie possibilità di luoghi per nidificare e dormire in fenditure, inaccessibili a mammiferi predatori, soprattutto all'ermellino *Mustela erminea* e alla faina *Martes foina*.

1. Introduction

The wallcreeper *Tichodroma muraria* is a typical habitat specialist. It occupies rock faces in remote and often very difficult accessible areas, which makes the gathering of basic information on this enigmatic bird species very difficult. Therefore, data concerning certain aspects of the wallcreeper ecology and ethology are neither well established nor widely known. Although wallcreeper has been the object of several studies in Europe, especially in the Alps and other high mountain ranges (MÜLLER 1962, 1965; BEZZEL 1967, 1993; HAURI 1970, 1978; LÖHRL 1970, 1976; DORKA 1976), the populations in the West Carpathians (Slovakia) have received little attention (SANIGA 1995a,b,c, 1999).

This paper reports on the results of a study concerning characteristics of the breeding habitat of the wallcreeper which was conducted on the population occupying mountains of central Slovakia in 1982–2003.

2. Study area and methods

From 1982–2003, wallcreeper populations were studied in the mountains of central Slovakia (Vel'ká and Malá Fatra mountains, Chočské vrchy mountains, the West Carpathians, 18°50' – 19°18' E, 48°47' – 49°19' N). Features of the breeding habitat were studied at fifteen breeding haunts. Breeding haunts in the area under study are characterized exclusively by limestone rock faces at an altitude between 400–1 600 m.

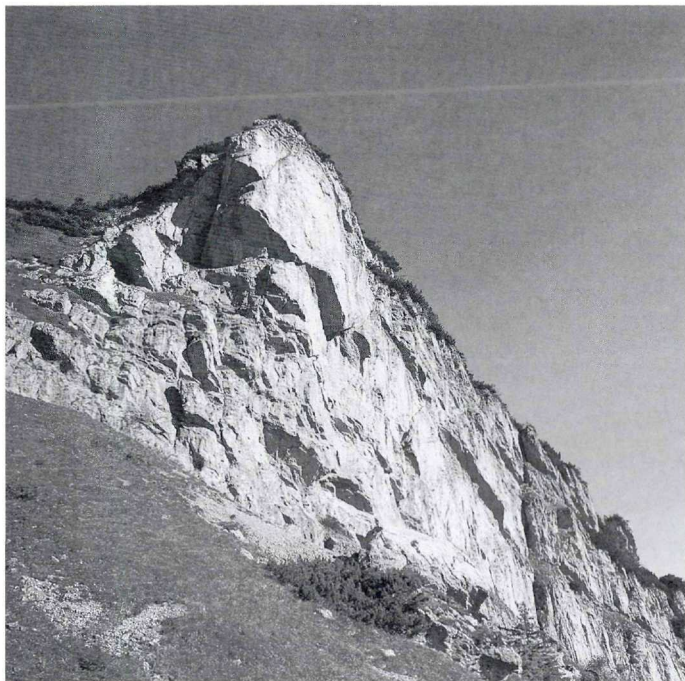


Figure 1:
Breeding habitat of wallcreeper *Tichodroma muraria*, Vel'ká Fatra mountains, the West Carpathians. Limestone rock face of 800 m long and 30–40 m high at an altitude of 1 400–1 480 m; prevailing south-eastern aspect (75%), rest north-west aspect; rock wall with large number of ledges, overhangs and crevices; individual sections of rock face separated by clumps of vegetation.
Photo: Miroslav SANIGA.

Figure 2:
Breeding habitat of wallcreeper
Tichodroma muraria, Vel'ká
Fatra mountains, the West
Carpathians. Limestone rock
face of 400 m long and
20–30 m high at an altitude of
1 300 m; 66% south-eastern
aspect and 34% north-western
aspect; individual sections of
rock face separated by clumps
of vegetation.
Photo: Miroslav SANIGA.



3. Results and Discussion

Wallcreeper inhabits rock faces in the high mountain ranges of Europe and Asia, extending from the Cantabrians and Pyrenees in the west, through the Alps, the Carpathians, the Balkan peninsula, Asia Minor, the Cau-

casus, Iran, and above all in the Himalayas and their extensions (CRAMP & PERRINS 1993). In the Western Palearctic, Wallcreeper breeds in mountainous regions of lower middle latitudes, in rocky, broken terrain (LÖHRL 1976; CRAMP & PERRINS 1993;

Figure 3:
Breeding habitat of wallcreeper
Tichodroma muraria, Vel'ká
Fatra mountains, the West
Carpathians. Complex of
limestone single rock faces
covering area of 15 ha at an
altitude of 1 400–1 500 m;
prevailing south-eastern
aspect; rock walls separated by
belts of vegetation.
Photo: Miroslav SANIGA.



GLUTZ VON BLOTZHEIM & BAUER 1993). Here, it prefers rocky terrain with varied plant cover to bare rock faces (LÖHRL 1976). In the West Carpathians, wallcreeper bred in mountainous areas with steep rock faces and precipitous boulder-strewn slopes, limestone being the preferred substrate. In the area under study, wallcreeper populations occupied two typical habitats. Some pairs bred in rocky gorges of mountain streams at an altitude of 500–1 000 m above sea level, while others occupied limestone rock faces without running water at an altitude of 500–1 800 m. Most breeding areas were found between 800–1 600 m. Limestone rock faces were preferred to granite ones. Individual breeding rock faces were characterized by a markedly structured surface, with overhangs, crevices, fissures and ledges covered with clumps of vegetation (grasses, trees and, in the gorges and on rock faces

with north-west exposure, mosses). Optimal wallcreeper habitat consisted of rocky localities where sections of rock faces had various levels of sunlight exposure at different times of the day. At such localities, diverse plant communities grow, which are inhabited by various insect and spider communities. Therefore, essentially more food is available here than on solid rock walls with one exposure (suboptimal habitat). Rock faces lacking overhangs, ledges and cavities were unoccupied because of not only vegetation and food scarce, but there were also no dry feeding places during rainy weather (heavy thunder-storms, long-term precipitation). Availability of food (insects and spiders) and presence of suitable nest- and roost-crevices are probably the two important limiting factors for breeding of wallcreepers at a potentially suitable locality.



Figure 4:
Breeding habitat of wallcreeper *Tichodroma muraria*, Chočské vrchy mountains, the West Carpathians. Limestone rock face of 700 m long and 30–70 m high at an altitude of 900–1 000 m; southern aspect; rock wall with large number of ledges, overhangs and fissures; individual sections of rock face separated by clumps of vegetation; rocky fields on steep slope under rock face.
Photo: Miroslav SANIGA.

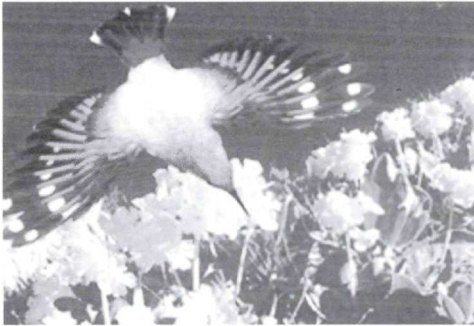


Figure 5: Wallcreeper *Tichodroma muraria*, female, Vel'ká Fatra mountains, the West Carpathians. Photo: Miroslav SANIGA.

Although not a necessary condition, running water was usually present in the vicinity of the nest. In the West Carpathians, eight out of fifteen occupied breeding grounds lacked running water nearby the nest crevice. However, LÖHRL (1976) states that all investigated sites included or were adjacent to running water, and that it is unlikely that wallcreeper breeds on rock faces without water nearby.



Figure 6: Wallcreeper *Tichodroma muraria*, female, Vel'ká Fatra mountains, the West Carpathians. Photo: Miroslav SANIGA.

The size of breeding territories differed significantly. The breeding territory varied in size but was much larger than in other bird species of similar size occupying the same habitat (e.g. black redstart *Phoenicurus ochruros*, 1–3 ha). The breeding territory was considerably extended and it may stretch for more than 1 000 m horizontally (min 500 m, max 1 100 m). However, the size of wallcreeper territory has to be estimated both horizontally and vertically. The nature of the rocky terrain and its inaccessibility make this task very difficult.

In conclusion, typical habitat features of wallcreeper breeding haunts are characterized as follows: 1) considerably structured surface of rock faces (overhangs, crevices, fissures and ledges) covered with clumps of vegetation; 2) sections of rock faces with various levels of sunlight exposure or rock faces with scattered trees, which shade parts of the rock walls during the day; 3) presence of suitable potential nest- and roost-crevices inaccessible to mammalian predators, particularly stoat *Mustela erminea* and beech marten *Martes foina*.

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LITERATURE

- BEZZEL, E. (1967): Einige Notizen über den Mauerläufer (*Tichodroma muraria*) in den Bayerischen Alpen. – In: Anz. Orn. Ges. Bayern, 8, 172–174.
- (1993): Der Mauerläufer *Tichodroma muraria* im Werdenfelser Land, Oberbayern. – In: Limicola, 7, 35–48.

- CRAMP, S. & PERRINS, C.M. (1993): The birds of the Western Palearctic 7. Oxford, 329–346.
- DORKA, V. (1976): Beobachtungsnotizen zum Nestbau- und Lautverhalten eines Pyrenäen-Mauerläufers. – In: Anz. Orn. Ges. Bayern, 12, 95–99.
- GLUTZ VON BLOTZHEIM, U.N., BAUER, K.M. (1993): Handbuch der Vögel Mitteleuropas 13. Wiesbaden, 881–918.
- HAURI, R. (1970): Zur Lebensweise des Mauerläufers *Tichodroma muraria* im Winter. – In: Orn. Beob., 67, 14–34.
- (1978): Beiträge zur Brutbiologie des Mauerläufers *Tichodroma muraria*. – In: Orn. Beob., 75, 173–192.
- LÖHRL, H. (1967): Bewegungsweisen des Mauerläufers *Tichodroma muraria* im Hinblick auf die Anpassung an seinen Biotope. – In: Journ. Orn., 108, 165–186.
- (1970): Studies of less familiar birds. 158 Wallcreeper. – In: Brit. Birds, 63, 163–168.
- (1976): Der Mauerläufer. Neue Brehm-Bücherei 498, Wittenberg-Lutherstadt, 136 pp.
- MÜLLER, A.K. (1962): Zur Biologie des Mauerläufers (*Tichodroma muraria*). – In: Anz. Orn. Ges. Bayern, 6, 359–361.
- (1965): Weitere Beiträge zur Biologie des Mauerläufers (*Tichodroma muraria*). – In: Anz. Orn. Ges. Bayern, 7, 333–335.
- SANIGA, M. (1995a): Recent knowledge of the breeding biology of Wallcreeper (*Tichodroma muraria*) in the Malá and Vel'ká Fatra mts., Slovakia. – In: Sylvia, 31, 26–37.
- (1995b): Seasonal distribution, habitat, and territory of Wallcreeper (*Tichodroma muraria*) in the Vel'ká Fatra mountains (West Carpathians). – In: Biológia, Bratislava, 50, 195–202.
- (1995c): Seasonal distribution, altitudinal and horizontal migration of the wallcreeper (*Tichodroma muraria*) in the Malá Fatra mountains, Slovak Carpathians. – In: Folia Zool., 44, 237–246.
- (1999): An ecological and ethological study of Wallcreeper (*Tichodroma muraria*) in the Slovak Carpathians. – In: Folia Zool. Monogr., 2, 1–54.

ANSCHRIFT DES VERFASSERS

Ing. Miroslav SANIGA
 Institute of Forest Ecology
 Slovak Academy of Sciences
 Research Station
 SK-976 02 Staré Hory, Slovakia

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Autor(en)/Author(s): Saniga Miroslav

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