

The Eurasian Collared Dove (*Streptopelia decaocto* Frivaldszky, 1838) – a subrecent invasive species of the avifauna of Bulgaria (subfossil records)

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Abstract. Although the Collared Dove appeared in Bulgaria at 17-18th century, the subfossil record of the species in the country is rather scant. Only five Late Holocene sites contain bone remains (88 bones of 9 individuals), but all of them remained imprecisely dated. Some of the sites could be of older (possibly: Early Medieval Ages) age. All sites are situated in the NE Bulgaria and represent former feeding places of Eagle owls (*Bubo bubo*).

Key words: Eurasian Collared Dove, Invasive, Holocene.

Introduction

The Eurasian Collared Dove (*Streptopelia decaocto* Frivaldszky, 1838) is a unique species in respect to two facts: (1) It is one of the only a few species of birds that carried out a massive trans-continental invasion before the eyes of humans, but without their participation (Harrison 1982). Over the past 300-350 years, in the Middle Ages the collared dove has moved to the northwest, the eastern Mediterranean islands, the Balkans, and Europe, and the last third of the 20th century it invaded even the North America. (2) The collared dove is the only species of the recent avifauna, described for the world science from Bulgaria (from Plovdiv /former Philipopolis/ in 1837 by the Hungarian naturalist Emerich von Frivald (Imre Frivaldszky; 1799-1870).

Results and Discussion

Appearance on the Balkans and other parts of Europe and North America

The species appeared in Bulgaria at the end of 17th - early 18th century, although the first record in Europe was registered in Crete in the 2nd half of the 16th century (Boev 1963). It is supposed to have originally been introduced to a number of Ottoman Empire Muslim countries in the continent. It has penetrated in the Balkan Peninsula from Asia Minor. In Bulgaria resettlement took place along the bigger towns in the Thracian Plain. In 1890, the bird was nesting in today's Sofia district of Knyazhevo, and in 1893 in the town of Stara Zagora. According to Boev (1963), in the end of the 19th century the collared dove reached our most northern boundaries of the Balkan Peninsula and passed beyond the Danube. Then it was already nesting in the Danube towns from Ruse to Vidin. It penetrated in Dobrudzha around 1926 and in the town of Varna in 1943 (Boev 1963).

The invasion towards northwest continued uninterruptedly and in 1912 the species reached Belgrade, Bucharest in 1938, the Netherlands in 1947, the United Kingdom in 1952, and the Faeroe Islands in 1970. In 1909 and in 1921, it was already observed in Los

Angeles, but it was supposed that these were escaped cage birds. But since 1970, *S. decaocto* was spread all over California. Today, it has conquered all the United States (except Alaska) and South Canada (del Hoyo & Collar 2014).

In nowadays its number in Europe is estimated at around 7 million breeding pairs (Hagemeijer & Blair 1997). In Bulgaria it is a resident species and it is almost ubiquitous up to 1100 m. *S. decaocto* is a protected species, its capture and killing are pursued by the law. The Bulgarian population numbers 90 000 - 200 000 pairs (Mitev 2007).

Present study provides all available data on the former species' distribution throughout the Bulgarian lands and try to trace the colonization process in the past according to its subfossil record.

Subfossil record of *S. decaocto* in Bulgaria

1. Topchii

UTM:MJ 53. Rock niche in the canyon of the Topchiyska River, in a rock of 20 m high at about 1 km NW of the Topchii village. 350 m a.s.l. Former feeding place of the Eurasian Eagle Owl (*Bubo bubo*) (Linnaeus, 1758). Late Holocene. Two bones of 1 ind. (Boev 1999; Mitev 2016).

2. Madara – 1

UTM:NH 09. Rock niche of a 60 m high rock massive, 1 km N of Madara village (Shumen Region). 500 m a.s.l. Former feeding place of *Bubo bubo*. Late Holocene. Six bones of 1 ind. (Mitev 2016). Three bones of 1 ind. (Boev 1999).

3. Madara – 2

UTM:NH 09. Cave in the rock massive north of the Madara village. 300 m. a.s.l. Former feeding place of *Bubo bubo*. Late Holocene (Late Medieval Ages). One bone of 1 ind. (Mitev 2016).

4. Shirokovo

UTM:MJ 12. Cave in the canyon of the Cherni Lom River in a rock massive 20 m high, 2 km north of Shirokovo village. 150 m a.s.l. Former feeding place of *Bubo bubo*. Early to Late Holocene (Mitev 2006). 82 bones of 5 ind. (Mitev 2016).

5. Isparih

UTM:MJ 84. Rock niche in a rock massive 15 m high in the valley of Chernodlanitsa River in the Sboryanovo locality, 7 km NW of town of Isparih. 150 m a.s.l. Former feeding place of *Bubo bubo*. Late Holocene. Two bones of 1 ind. (Boev 1999; Mitev 2004).

Bone remains of the collared dove in Bulgaria are scanty. Although over 120 sites of fossil and subfossil record of birds are explored so far throughout all over the country (Boev, 1999; unpubl. data), only five localities yielded osteological finds proving former occurrence of that species in the past.

As seen all five localities have non-human accumulation agent (Eagle Owl) and were dated imprecisely. All they are situated in the NE Bulgaria. All subfossil finds (88 bones of 9 individuals) of the collared dove came from Late Holocene deposits, but unfortunately the exact date could not be determined. Two localities (Madara – 1 and Shirokovo) contain mixed deposits of late and possibly an early (“middle”) Holocene (Boev 1999; Mitev 2004).

Thus, at present stage, they could not be used for tracing of the colonisation process of the species invasion in Europe. On the other hand they mark species' subrecent occurrence in this part of the country.

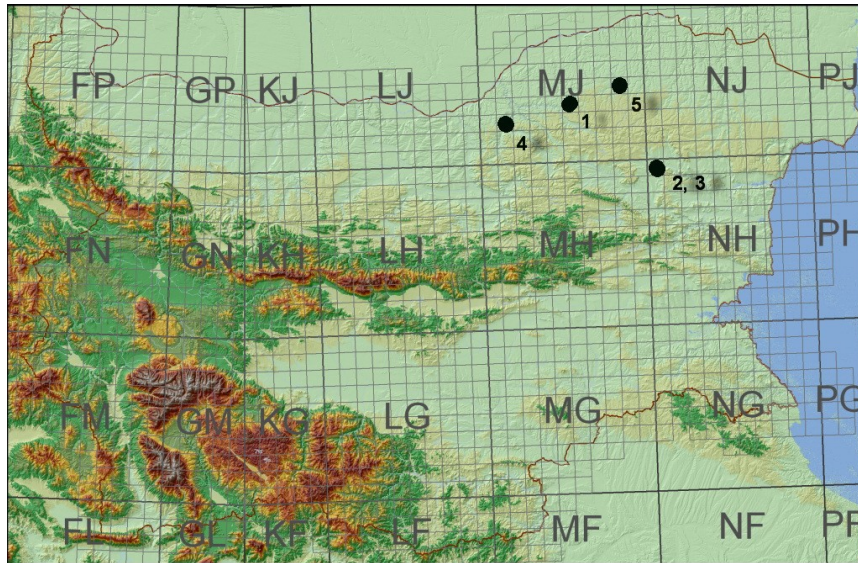


Fig. 1. Late Holocene subfossil record of the Eurasian Collared Dove (*Streptopelia decaocto*) in Bulgaria: Topchii (1); Madara - 1 (2); Madara - 2 (3); Shirokovo (4); Isparih (5).

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