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# The history of the domestic cat in Central Europe: human-induced dispersal or natural introgression?

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Advances in paleogenomic research have provided new information about domesticated animals, but we still know little about the history of cats. Until now, only one subspecies, the Near Eastern wildcat (*Felis silvestris lybica*), was known to have been domesticated. The domestication areas were assumed to be the Near East and Egypt. From this region, cats spread to the Mediterranean and beyond. It has been accepted that the Roman legions played the primary role in the expansion of cats through northern Europe. However, we found that cats that carried mitochondrial DNA (mtDNA) haplotypes of wildcats from the Near East were present in Central Europe as early as the Neolithic, well before Roman times, and may have been associated with Neolithic expansion. Our new results reveal the presence of the mtDNA haplotypes of the Near Eastern wildcats in Poland even in the pre-Neolithic period. This may suggest that the Near Eastern wildcats could have spread across Europe independently of agricultural expansion. Consequently, the natural range of Near Eastern wildcats may have been much broader than previously assumed. To understand how and when domestic cats appeared in Central Europe, we performed a target enrichment of ca. 57,000 genomic SNPs. We believe that this will allow us to definitively determine whether the appearance of the Near Eastern wildcat mtDNA in Central Europe was a natural admixture between the two subspecies or whether it was a human-induced dispersal of tame/domestic cats. The study is supported by the National Science Centre, Poland, grant no. 2019/35/B/HS3/02923.

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