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First record of a presumed wild common genet (*Genetta genetta*) in Switzerland

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Abstract: The common genet (*Genetta genetta*) is the only Viverridae in Europe. For centuries, this secretive carnivore was largely confined to the Iberian Peninsula and to areas south of the Loire and west of the Rhône rivers in France. During the last decades, however, the common genet expanded its area of permanent presence beyond these historical geographic barriers. It has settled in new territories much further to the north and to the east, notably in Provence, and in the departments of Rhône and Ain. Genets have started to be sighted in north-western Italy as well. We report here two observations of this species recorded in June 2019 by a camera trap set along the Rhône River in a small forest of the municipality of Bernex, near Geneva. This is the first evidence of a presumed wild common genet living in Switzerland, suggesting an ongoing geographical expansion of the species already documented in the adjacent French departments of Haute-Savoie and Ain.

Keywords: *Genetta genetta* - Carnivora - camera trap - Switzerland.

Résumé: La genette commune (*Genetta genetta*) est le seul Viverridé sauvage d'Europe. Pendant des siècles, ce petit carnivore discret et nocturne était essentiellement confiné à la péninsule Ibérique et, en France, au sud de la Loire et à l'est du Rhône. Durant ces dernières décennies, cette espèce a cependant étendu son aire de répartition bien au-delà de ces barrières géographiques et des populations permanentes se sont maintenant installées plus au nord et à l'est, notamment en Provence et dans les départements du Rhône et de l'Ain. Elle est signalée plus à l'est jusque dans le Piedmont italien. Nous rapportons ici deux observations effectuées en juin 2019 par des pièges photographiques installés dans une petite forêt bordant le Rhône, dans la commune de Bernex, près de Genève. Ce sont les premières observations d'une genette commune d'origine présumée sauvage en Suisse. Ces observations font suite à un mouvement d'extension naturelle des populations de cette espèce déjà constaté dans les départements français voisins.

Mots-clés: *Genetta genetta* - Carnivora - piège photographique - Suisse.

INTRODUCTION

The common genet (*Genetta genetta*) is the only Viverridae (Carnivora, Mammalia) present in Europe. The diet of this small carnivore is relatively unspecialized and includes a variety of small vertebrates (rodents, shrews, birds, reptiles, etc.) as well as invertebrates and fruits, and thus will largely depend on seasonal and local food availability (Larivière & Calzada, 2001). In Europe and North Africa, the main energetic intake on which the species depends is generally the wood mouse (*Apodemus sylvaticus*) (Virgós *et al.*, 1999). Although it is usually associated with forested and rocky habitats, it is rather ubiquitous and is also tolerant to human proximity (Gaubert *et al.*,

2008). Habitat modelling in Europe suggests that this thermophilous species may be limited by the severity of winter temperatures (Camps *et al.*, 2016), although individuals have been sighted during snowy winters (e.g. Léger *et al.*, 1998).

The common genet – as the whole genus *Genetta* – is native to Africa, where it is widespread across most of the continent (Delibes & Gaubert, 2007; Jennings & Veron, 2009). The origin of the European populations of the common genet has been debated and was often attributed to the Romans or the Moorish who introduced them supposedly to control rodents around households (Bouillault & Filloux, 1955; Morales, 1994). Phylogeographic analyses based on multiple genetic

markers and a comprehensive geographic coverage indeed support that all European populations of genets are issued from few colonisation events from North Africa (Gaubert *et al.*, 2009, 2011). These studies also confirmed the hypothesis of two or three hotspots of introduction, one located in southern Iberia and the other in the Balearic Islands and/or Catalonia (Gaubert *et al.*, 2009, 2015). These molecular analyses, however, also suggested that the earliest colonisation in southern Iberia was older than expected as it occurred at least 3000 years ago. Genet introductions were thus possibly initiated by the Phoenicians during their trade across the Mediterranean, with secondary introductions into south-western Europe at subsequent historical periods (Gaubert *et al.*, 2009, 2015).

Historically, the common genet was largely confined to the Iberian Peninsula and south-western France, south of the Loire and west of the Rhône rivers (Schauenberg, 1966; Delibes, 1999; Larivière & Calzada, 2001), all extra-limital occurrences being attributed to deliberate introductions or to escaped pets (Schauenberg, 1966). However, the recent multiplication of validated records of genets eastward of these presumed geographic barriers suggest that established populations now exist in south-eastern France (Gaubert *et al.*, 2008), with sporadic individuals occurring even in north-western Italy. Specific census conducted in France by the national forest agency (ONCFS) during the period 1991–2009 further demonstrated the occasional presence of this elusive carnivore as far north as the Vosges and a more regular presence in Bourgogne and Franche-Comté as well as in Isère and Savoie (Léger & Ruetten, 2010), i.e. east of the Rhône River.

THE COMMON GENET IN SWITZERLAND

Historically, two common genets have already been recorded in Switzerland. One was an adult male trapped in a hen house in February 1919 near Laupersdorf, Solothurn, in the Jura Massif (Greppin, 1919), while the other was a male killed in December 1926 under the same circumstances in La Tour-de-Peilz, near Vevey, in the Swiss Prealps (Murisier, 1927). Both specimens were mounted and conserved in the collections of the Naturmuseum Solothurn and the Musée cantonal de zoologie of Lausanne, respectively. As these animals were discovered very far from the historical range of the species, Schauenberg (1966) discarded these records as being certainly issued from escaped animals.

In July 2012, one adult individual was photographed with a camera trap installed near Clarafond-Arcine in the Mt Vuache (Anonymous, 2012), a mountain of Haute-Savoie bordering the Geneva Basin and located about 7 km from the western border of Switzerland. A genet was observed again while walking on a stone wall in the same area, in November 2015 (LPO Haute-

Savoie, unpublished), suggesting that the species is established in this region.

During an ongoing study of badger populations (*Meles meles*) living in the southern region of the Geneva province, in Switzerland, one of us (JP) installed two camera traps (Browning Spec Ops Full HD 2018) along small trails on the left bank of the Rhône river in a small, forested gully (Bois de Châtillon, Bernex). This small riparian forest is composed of a dense mixture of broadleaf species (oaks, alder, willows and hazelnut trees) with sparse ground vegetation. The cameras were programmed to work throughout the day (24h) and to record a video of 20 s if triggered by a passing animal. After a trapping session of one month, we were surprised to find two videos triggered by a cat-like animal. According to its uniquely blotched coat and annulated tail (Fig. 1), and owing to its peculiar trotting tread (see the two videos deposited in Zenodo.org and can be retrieved via <https://doi.org/10.5281/zenodo.3617966>), we immediately identified the animal as a common genet. This camera trap was set against a tree trunk, about 30 cm above the ground and overlooking a sloping path (coordinates: 46.1921°N, 6.0609°E, at 389 m a.s.l.). The genet triggered the camera a first time on the 9th of June 2019 at 03:07 a.m., and six days later on the 15th June 2019 at 09:58 p.m. (Fig. 1); both events occurred at night-time. Other mammals recorded during the same trapping session by this camera included badgers, foxes (*Vulpes vulpes*), a roe deer (*Capreolus capreolus*), domestic cats (*Felis catus*), and dogs (*Canis familiaris*).

Immediately after this first session, we installed 12 new camera traps near the discovery point, along forested paths of the Rhône River and adjacent forests, between the 26th of June and the 15th of July, and another series of 10 traps between the 28th of August and 6th of November, but without success. Only other common mammals (roe deers, badgers, foxes, a beech marten, wild boars and domestic cats) were captured on film, but no genet was detected.

DISCUSSION

The common genet is a nocturnal and elusive mammal that is difficult to observe in its natural habitat and therefore the status of its local populations is difficult to evaluate accurately (Léger & Ruetten, 2010). But the continued geographic and demographic expansion recorded to the north-east of its historical range (Gaubert *et al.*, 2008; Léger & Ruetten, 2010), and in particular the two recent sightings (2012 and 2015) from the Mt Vuache, suggest that these animals may have settled in the Geneva basin. This climatically favourable area offers a variety of thermophilous forests interspaced with rocky outcrops (Gilliéron & Morel, 2018) that are likely suitable habitats for the



Fig. 1. Screen capture of the video recording a common genet (*Genetta genetta*) walking away from a camera trap set in the Châtillon forest, near Bernex, Geneva. This video was triggered by the genet on the 15th June 2019 at 09:58 p.m and is the second time that supposedly the same animal triggered the same camera six days earlier.
The video recordings are available at <https://doi.org/10.5281/zenodo.3617966>.

genet. The animal caught twice by the camera trap set in the Châtillon forest is probably the same (unsexed) individual which stayed temporarily in this area. Given the proximity of a possible source area in the Mt Vuache (less than 10 km away) and because no common genet has been registered so far in zoos or private collections from Switzerland or nearby France, we assume that this animal is of wild origin and entered naturally into the territory of Switzerland. Hence, the common genet can be considered as the 99th species of wild mammal living in Switzerland (Gilliéron, in press), although it is probably not yet represented by permanent populations. Although Switzerland did not appear to be particularly favourable for the presence of genets in distribution models generated from historical occurrences (Camps *et al.*, 2016), the more thermophilous western portion of this country can now be considered a part of the colonization front of this species.

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