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2021 Artikel
2021 article

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L@CERTIDAE
EIDECHSEN ONLINE

2021 № 5- ONLINE VERÖFFENTLICHT / PUBLISHED ONLINE: 2021-11-19



www.lacerta.de



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Zitat / Citation:

MAMIN, A. & C. RODRIGUEZ (2021): Heterospecific coprophagy within the genus *Gallotia*. – L@CERTIDAE (Eidechsen online), 2021 [5]: 69–73.



Heterospecific coprophagy within the genus *Gallotia*

ALEXANDRE MAMIN &
CARLOS RODRIGUEZ, 2021

Abstract

Gallotia is an endemic genus of Lacertidae from the Canary Islands. This genus is known to be omnivorous. It displays an opportunistic feeding behaviour and feeds on a wide variety of food with an important part made of plant matters, including stems, leaves, flowers and fruits. Its diet includes arthropods, other lizards, various animal carrions and even human leftover food too. Two species among the genus *Gallotia* have been reported to practice coprophagy. Here, the authors share personal observations of this behaviour in three other species of the same genus.

Zusammenfassung

Gallotia ist eine endemische Gattung von den Kanarischen Inseln aus der Familie der Echten Eidechsen (Lacertidae). Diese Gattung ist als Allesfresser bekannt. Sie zeigt ein opportunistisches Fressverhalten und ernährt sich entsprechend vielseitig, wobei ein wichtiger Teil aus Pflanzen besteht, darunter Stängel, Blätter, Blüten und Früchte. Die Nahrung umfasst ebenso auch Gliederfüßler, andere Eidechsen, Aas und Essensreste. Von zwei Arten dieser Gattung wurde berichtet, dass sie Koprophagie praktizieren (Verzehr von Exkrementen). Hier berichten die Autoren über persönliche Beobachtungen dieses Verhaltens bei drei weiteren *Gallotia*-Arten.

Introduction

Gallotia is a genus of lacertid lizards which are endemic to the Canary Islands. Although being mainly vegetarian for the middle-sized and giant species, *Gallotia* displays an opportunistic feeding behaviour. This genus has been reported feeding, inter alia, on arthropods, nectar, flowers and fruits. Some species sometimes feed on carrions and can even be cannibalistic (MATEO & PLEGUEZUELOS 2015). Recently, they have been proved to be active predator of birds and micro-mammals (AYLLÓN et al. 2020) (MAMIN & LE BAIL 2021). There are very few reports about coprophagic behaviour within this genus, in the literature. Here, the authors share their personal observations and photographic documentation of coprophagic behaviour in three *Gallotia* species.

Coprophagy

Coprophagy is a feeding behaviour known in various species of reptiles. However, coprophagy is usually known to be conspecific and occurs in young herbivorous animals. It allows herbivorous reptiles to create their microbiome by ingesting bacteria able to digest

cellulose as it has been observed in *Corucia zebrata* (BURGHARDT et al. 1995). Conspecific coprophagy has been documented in a few species of snakes such as *Thamnophis sirtalis* or *Naja melanoleuca* (PETERSON 1980; BANKS 1984) but this behaviour was only observed in captivity.

By contrast, heterospecific coprophagy seems rather rare in reptiles. As the number of observations from reptiles consuming other animal feces is growing, it would be good to confirm whether it is really the case, or just due to the lack of observation.

Cases of heterospecific coprophagy have been reported in saurians such as *Saara hardwickii* (RAMESH & SANKARAN 2013), *Intelligama lesueurii lesueurii* (BAXTER-GILBERT 2014), *Cyclura cyclura* (COENEN 1995) or *Cyclura lewisi* (GOODMAN 2007). This behaviour can sometimes be observed in amphibian species in the wild (FENOLIO et al. 2006).

It has been observed that *Gallotia* can display this behaviour, like the recently extinct (formerly) subspecies *Gallotia simonyi simonyi* (SALVADOR 1971), but this behaviour has been rarely described in the literature.



Fig. 1 – Holocopy of *Gallotia simonyi*, Lagartario of El Hierro given by W. BISCHOFF. Photo: A. MAMIN, 2020.

Observations

All observations occurred on sunny days with temperatures between 26 and 30 °C, within 500 m from the seashore. All animals were active and spontaneously foraging for food.

Gallotia stehlini

On 4 December 2014 at around 1215 hrs, MAMIN observed *G. stehlini* feeding on human feces on a nudist beach in Maspalomas, Gran Canaria. This behaviour was observed, for the same species, at the same place on 6 November 2019 around 1145 hrs. This iterative field observation demonstrates this was not an isolated case and that *G. stehlini* could regularly feed on this source of food.



Fig. 2 – *Gallotia stehlini*, dunas de Maspalomas, Gran Canaria. Photo: A. MAMIN, 2014.



Fig. 3 – *Gallotia stehlini*, dunas de Maspalomas, Gran Canaria. Photo: A. MAMIN, 2019.

Gallotia caesaris gomerae

On 22 May 2019 at around 1215 hrs, both authors observed a young male of *Gallotia caesaris gomerae* feeding on human feces at Charco del Cieno, Valle

Gran Rey, La Gomera. This place is classified as an area of scientific interest, because it is one of the last natural salt marshes in the western Canaries and an important place for migratory birds. Despite its status, naturists use this place, as for the beach adjacent to it, for their activities, including bodily functions as it is the case in Maspalomas on Gran Canaria.



Fig. 4 – *Gallotia caesaris gomerae*, Charco del Cieno, Valle Gran Rey, La Gomera. Photo: C. RODRIGUEZ, 2019.

Gallotia galloti eisentrauti

On 6 March 2019 at around 1125 hrs, MAMIN observed a subadult specimen of *Gallotia galloti eisentrauti* leaving its hiding place in a stone wall to feed on bird's feces in Puerto de La Cruz, Tenerife.

Gallotia sp. feeding on bird's feces and pellets is a known phenomenon. In Guaza (Tenerife) both present species, *Gallotia galloti galloti* and *Gallotia intermedia*, were observed feeding on seagull's pellets, while *G. galloti galloti* was observed feeding on bird's feces too (DE URIOSTE, pers. observations).



Fig. 5 & 6 – *Gallotia galloti eisentrauti* in Puerto de La Cruz, Tenerife. Photo: A. MAMIN, 2019.

Conclusion

Heterospecific coprophagy seems to be a widespread feeding behaviour among the various species of *Gallotia*. Thus, we can conclude that it is a common

and usual food habit within this genus as we regularly observe it.

Yet, the reasons that led to this behaviour are still unclear. It still needs to be confirmed whether this is an adaptation due to the necessity of eating food in areas where it is hard to find or just an opportunistic behaviour. It is common to see flies and their larvae on various feces. One hypothesis is that coprophagy could have begun with accidental intake of feces while capturing associated invertebrates on them (DE URIOSTE, pers. comment).

Acknowledgment

We would like to thank SONIA RODRÍGUEZ, environmental technician at the Lagartario of La Gomera in Valley Gran Rey, who advised us to visit the interesting biotope of Charco del Cieno. We are grateful to MARIA DEL CARMEN IGLESIAS LÓPEZ from Las Palmas de Gran Canaria University for providing me an important article about *Gallotia*. We sincerely thank JAIME DE URIOSTE, president of Neotropico Foundation in Tenerife, for giving and sharing information and observations about *Gallotia*. Finally, we thank our anonymous reviewer and SIEGFRIED TROIDL for the German translation of the summary.

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