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Just the two of us: presence of a second species of non-native gecko of the genus *Hemidactylus* Goldfuss, 1820 (Squamata: Gekkonidae) confirmed on Saint Helena

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Saint Helena.

Abstract. – *Hemidactylus mabouia* (Moreau de Jonnès, 1818) is recorded for the first time from the remote island of Saint Helena, based on a specimen observed by one of the coauthors and several further photographic records verified from the citizen science platform iNaturalist. Comparison is made with the well-established and widespread *Hemidactylus frenatus* Duméril & Bibron, 1836 which was hitherto the only established gecko known from Saint Helena. Notes on reptiles on the neighbouring Ascension Island, especially its geckos, are provided.

Sherwood D., Peyton J., Cairns-Wicks R., Fowler L., Geci D. & Balchin J., 2025. – Just the two of us: presence of a second species of non-native gecko of the genus *Hemidactylus* Goldfuss, 1820 (Squamata: Gekkonidae) confirmed on Saint Helena. *Faunitaxys*, 13(55): 1 – 5.

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Introduction

Reptiles are formally recorded from two out of the three island groups that make up the United Kingdom Overseas Territory (UKOT) of Saint Helena, Ascension and Tristan da Cunha. Only chelonians and lizards have been recorded from the Territory, with the absence of any formally reported snakes. Ascension Island is currently the most speciose in regards to lizards. The Sand Lizard *Liolaemus wiegmanni* Duméril & Bibron, 1837 (Squamata: Liolaemidae), Tropical House Gecko

Hemidactylus mabouia (Moreau de Jonnès, 1818) (Squamata: Gekkonidae), Coconut Palm Gecko *Hemidactylus mercatorius* Gray, 1842 (Squamata: Gekkonidae), and Brown Anole *Anolis sagrei* Duméril & Bibron, 1837 (Squamata: Dactyloidae) are all reported from Ascension Island (Loveridge, 1957, 1959; Kluge, 1969; Stroud *et al.*, 2018). A record of the Asian House Gecko *Hemidactylus frenatus* Duméril & Bibron, 1836 on Ascension Island can also be found (Loveridge, 1959) but only based on egg measurement sizes, and he later mentions this was a misidentification of *H. mercatorius* (see Loveridge, 1960) and

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thus *H. frenatus* was expunged from the list of Ascension Island reptiles. The Ocellated Gecko *Pachydactylus geitje* (Sparrman, 1778) was also mentioned in print as occurring on Ascension Island based on work by Arthur Loveridge who examined historical specimens from 1843 but as noted by Branch (1991: 224): “Loveridge (1947) notes a record of the ocellated gecko *Pachydactylus geitje* from Ascension Island but does not mention it in subsequent papers on the introduced herpetofauna of the island (Loveridge, 1959 and 1960). The specimens may have been mislabelled or the population may subsequently have died out.”. Edgar (2010) lists *H. frenatus* and *P. geitje* on the list of introduced reptile species for Ascension, but without extensive discussion of the previous literature, overlooking *H. frenatus* had already been expunged by Loveridge (1960) and that *H. mabouia* had been reported by Kluge (1969). Indeed, the record of *H. mabouia* by Kluge (1969) appears to have been overlooked or disregarded by most later workers, perhaps because full label data for the three specimens is explicitly excluded from the study. Thus, a question remains as to whether both species occur on Ascension or whether one species of *Hemidactylus* has been misidentified as two different species during the last seven decades.

Geckos are a common sight on Saint Helena, occurring almost everywhere which hosts human-made structures and under stones in arid areas (DS, JP, RC-W, LF and JB pers. obs.). *Hemidactylus frenatus* has long been known from the island (Melliss, 1875; de Rooij, 1915; Loveridge, 1947, 1957, 1959; Ashmole & Ashmole, 2000; Edgar, 2010) and has a significant negative impact on endemic invertebrates (Pryce, 2019; DS, JP, RC-W, LF and JB

pers. obs.). Hitherto, it is the only non-chelonian reptile reported from the island. Bauer *et al.* (1997) state Fitzsimmons (1943) recorded the Marble Leaf-toed Gecko *Afrogecko porphyreus* (Daudin, 1802) from Saint Helena. Branch (1998) also subsequently stated Saint Helena as a locality for this species. However, we can find no mention of Saint Helena in Fitzsimmons (1943) for this species. Roy *et al.* (2019) predicted that both *H. mabouia* and *H. mercatorius* had the potential to colonise Saint Helena as stowaways in shipping containers, alongside *A. polyphyreus* and two other lizard species recorded from Ascension Island (*A. sagrei* and *L. wiegmanni*, see above). Roy *et al.* (2019) also identified the Cape Dwarf Gecko *Lygodactylus capensis* (Smith, 1849) as a possible importation risk for Saint Helena via luggage. Tristan da Cunha has no published records of terrestrial reptiles, but *A. porphyreus*, *H. frenatus*, *H. mabouia*, and *L. capensis* were all been identified as being of risk of introduction via shipping containers (Roy *et al.*, 2019). During the review process of this article, we learnt from Aaron M. Bauer (pers. comm.) that *A. porphyreus* has been recorded on Tristan da Cunha (Marius Burger pers. comm. to Aaron M. Bauer), but that the record has not yet been published. Nonetheless, this indicates reptiles have been intercepted on Tristan da Cunha.

In this work, we report *H. mabouia* from Saint Helena for the first time, expanding the number of invasive gecko species to two. *Hemidactylus mabouia*, *sensu stricto*, is a well-known invasive species and part of a wider species complex (Agarwal *et al.*, 2021), though it is the only species within the ‘*H. mabouia* complex’ that has been able to spread so widely.



Fig. 1. *Hemidactylus mabouia* (Moreau de Jonnès, 1818) specimen in Jamestown, Saint Helena.



Fig. 2. *Hemidactylus frenatus* Duméril & Bibron, 1836 colour variation. **A.** Two specimens of common mottled-grey form, found under a rock in Prosperous Bay Plain, Saint Helena. **B.** One specimen of pale olive form, found on wooden pallets at Millenium Forest.

Material and methods

The data reported herein was collected serendipitously during fieldwork undertaken in Saint Helena in-between workshop sessions for an invasive non-native species prioritisation exercise and invertebrate systematics in November 2022. In order to obtain a broader picture of the distribution of geckos in Jamestown, we searched for further photographic records of *H. mabouia* on Saint Helena on the citizen science platform iNaturalist (<https://inaturalist.org>); records that we were able to verify (i.e. see clearly morphological characters which excluded the possibility of them being *H. frenatus*, see below) are included herein. The possibility of the specimens being *H. mercatorius* was excluded based on studies which have restricted that morphologically similar species solely to islands of the Indian Ocean (Rocha *et al.*, 2010; Agarwal *et al.*, 2021; see also Pinho *et al.*, 2023), and conversely shown that *H. mabouia* s.s. has been widely distributed via routes in the Atlantic Ocean, being the only lineage within its wider species complex to be distributed on remote Atlantic islands (Agarwal *et al.*, 2021).

Results

On 09/11/2022, coauthor JP photographed a dark gecko near the Castle Gardens in Jamestown, Saint Helena (-15.92477, -5.7173783333). Examination of external characters (Fig. 1) clearly indicate this specimen is *H. mabouia* and not the well-known *H. frenatus*, based on the entire dorsum being covered in tubercles (vs. only found in posterior in *H. frenatus*). Therefore, the presence of *H. mabouia* on Saint Helena is confirmed and almost certainly occurred from stowaways in shipping containers, as predicted earlier (Roy *et al.*, 2019). Its status as an established species can be proven through the existence of three other photo records on the citizen science website iNaturalist, once of which from 2012, which show specimens of *H. mabouia* in varying life stages within Jamestown (iNaturalist, 2025a–b) and nearby at The Wharf (iNaturalist, 2025c). Thus, this species has been present in Saint Helena for at least 13 years and has remained formally unreported until now. Unlike *H. frenatus*, which is common under stones in semi-arid areas of the island such as Prosperous Bay Plain (Fig. 2A), and the Millenium Forest (where some specimens have a pale olive hue with reduced patterning near the head; Fig. 2B.), no fieldwork in the aforementioned areas has yet revealed *H. mabouia*, although it may potentially spread further on-island in the future. Equally, *H. frenatus* can also be found in houses outside of Jamestown (DS, JP, RC-W, LF and JB pers. obs.; iNaturalist, 2025d).

Discussion

Since both *Hemidactylus* species are non-native, the presence of a second congener on the island is likely to increase the threat level and selection pressures on endemic invertebrates. It also remains unclear how *H. frenatus* and *H. mabouia* may interact and compete for prey and other resources. It is pertinent to note that *H. mabouia* has been known to outcompete congeners when occurring in sympatry, as has been found in Florida (Agarwal *et al.*, 2021) and thus it is possible the population dynamic and numbers of *H. frenatus* on Saint Helena may be affected by the introduction of this other invasive species. Interestingly, *H. frenatus* was commonplace

on Sister's Walk in Jamestown under rocks above Anne's Place (-15.924728, -5.717052) in November 2022 but no specimens of *H. mabouia* were found in the immediate habitat (DS pers. obs.); this is despite the aforementioned locality being a little over a hundred metres from where *H. mabouia* was found by JP and various citizen scientists. Thus, it could be that *H. mabouia* is currently only sustained within human habitation within Jamestown. Nonetheless, further monitoring of geckos on-island is strongly encouraged. Future sequencing of Saint Helenian *H. mabouia* specimens would be of interest to investigate their population structure and phylogeography and could also serve a role in possible detection of further morphologically-similar *Hemidactylus* species should any be intercepted on Saint Helena in the future. This would be especially beneficial when identifying juvenile or damaged specimens.

It must be said that the names *H. mabouia* and *H. mercatorius*, whilst ultimately representing separate species, have been used interchangeably for a number of populations across the world, especially mainland Africa. The situation was no doubt confused further by the synonymy of the latter with the former for some time. That confusion still exists is nicely exemplified by the situation regarding the identity of *Hemidactylus* specimens on Ascension Island (see Introduction). The presence of *H. mabouia* on Saint Helena raises questions as to the validity of long-accepted *H. mercatorius* records on Ascension Island, especially since Loveridge misidentified populations on that island also as *H. frenatus*, and because the name *H. mercatorius* s.s. has now been restricted to populations in Madagascar and other Indian Ocean islands (Rocha *et al.*, 2010; Agarwal *et al.*, 2021; Pinho *et al.*, 2023). Indeed, other species which group closely with *H. mercatorius* in a complex are also restricted to that region (Agarwal *et al.*, 2021) and are absent from the Atlantic. Thus, it is likely that Kluge (1969) was correct that the gecko on Ascension Island is *H. mabouia* s.s. and that Loveridge (1960) misidentified it as *H. mercatorius* (and *H. frenatus*). A single photographic record found on iNaturalist (2025e) is of *H. mabouia* s.s., further strengthening this theory and confirming regardless that *H. mabouia* is present on Ascension Island. We refrain from formally expunging *H. mercatorius* from the Ascension Island list here, as it would be beneficial that more in-depth work be done locally on geckos beforehand, and because it was outside the scope of the present work. However, we do suspect that *H. mercatorius* will have to be removed from the Ascension list in the future.

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Résumé

Sherwood D., Peyton J., Cairns-Wicks R., Fowler L., Geci D. & Balchin J., 2025. – Présence d'une deuxième espèce de gecko non indigène du genre *Hemidactylus* Goldfuss, 1820 (Squamata : Gekkonidae) confirmée à Sainte-Hélène. *Faunitaxys*, 13(55): 1 – 5.

Hemidactylus mabouia (Moreau de Jonnés, 1818) est signalé pour la première fois sur l'île de Sainte-Hélène, à partir d'un spécimen observé par l'un des coauteurs et de plusieurs autres enregistrements photographiques vérifiés sur la plateforme de science participative iNaturalist. Une comparaison est faite avec *Hemidactylus frenatus* Duméril & Bibron, 1836, espèce bien établie et largement répandue, qui était jusqu'alors le seul gecko connu de Sainte-Hélène. Des informations sur les reptiles de l'île voisine de l'Ascension, en particulier ses gekkos, sont fournies.

Mots-clés. – Squamata, Gekkonidae, *Hemidactylus*, biosécurité, invasif, reptile, conteneur d'expédition, passagers clandestins, Sainte-Hélène.

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SOMMAIRE

Présence d'une deuxième espèce de gecko non indigène du genre *Hemidactylus* Goldfuss, 1820 (Squamata : Gekkonidae) confirmée à Sainte-Hélène.

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Just the two of us: presence of a second species of non-native gecko of the genus *Hemidactylus* Goldfuss, 1820 (Squamata: Gekkonidae) confirmed on Saint Helena.

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Illustration de la couverture :

Hemidactylus mabouia (Moreau de Jonnés, 1818) specimen in Jamestown, Saint Helena.

Crédits:

Jodey Peyton: Fig. 1 & couverture.

Danniella Sherwood: Fig. 2.