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The herpetofauna of the Echinades Island Complex, Ionian Islands, Greece, with notes on the ecological peculiarities of its lizard species

Elias Tzoras[1,*] and Dionysios Mamasis[2]

Abstract. The near-shore islands of western Greece remain to this day little explored in terms of herpetological research, while most of them have only been occasionally visited in recent years. We conducted several field excursions on 20 satellite islets of the Echinades Island Complex (Ionian archipelago), corresponding to a two-year field study from 2022 to 2023. During the surveys, we documented 39 new island records. We confirmed the presence of six out of the seven previously documented reptiles (*Mediodactylus kotschyi, Lacerta trilineata, Elaphe quatuorlineata, Platyceps najadum, Testudo hermanni* and *T. marginata*), and also documented for the first time four additional species new to the island group (*Hemidactylus turcicus, Ablepharus kitaibelii, Podarcis ionicus* and *Hierophis gemonensis*). During our field excursions we noticed a peculiar lifestyle concerning arboreal microhabitat preference of gecko species which is briefly discussed.

Keywords. Arboreal, behaviour, Echinades, herpetofauna, Ionian Islands, mapping

Introduction

The Balkan Peninsula has long been recognised as a key part of the Mediterranean biodiversity hotspot and harbours diverse reptile and amphibian communities. This is particularly the case for the west and south-east regions of the Balkans which encompass the largest number of islands in the Mediterranean Basin and support distinct stenoendemic herpetofaunas (Lymberakis et al., 2018). Located at the southern terminus of the Balkans, Greece is characterised by a rich herpetofaunal diversity with a high level of endemism in the Peloponnese Peninsula, and the adjacent Ionian and Aegean Sea archipelagos.

Since the beginning of Greek herpetology, the insular regions were regularly visited by numerous herpetologists who mainly focused on Aegean islands (e.g., Boettger, 1888; Werner, 1938; Wettstein, 1953; Buchholz, 1955; Buttle, 1985; Clark, 1989; Broggi, 2000; Cattaneo, 2005; Troidl and Troidl, 2007; Bader et al., 2009; Speybroeck et al., 2014; Strachinis and Roussos, 2016; Cattaneo et al., 2020; Foufopoulos et al., 2024), but rather less on the rest of the islets and islands found westwards, in the Ionian Sea (e.g., Cyrén, 1935; Valakos and Mylonas, 1992; Stille and Stille, 2016, 2017; Sindaco and Rossi, 2020a, 2020b). In fact, the majority of the uninhabited islets situated in the central-east Ionian Sea remain largely unexplored, while over the years few herpetological papers have been published discussing the Ionian Islets (Warnecke, 1988; Valakos and Mylonas, 1992; Stille and Stille, 2016; Sindaco and Rossi, 2020b). Among such largely unexplored islets are the Echinades Island Complex (Ionian Sea), given only three published works address their herpetofaunal assemblages (Cyrén, 1935; Keymar, 1986; Tzoras et al., 2023).

Here we report on the results of a two-year systematic study during which each islet of the Echinades Island Complex was surveyed. Furthermore, we briefly comment on interspecific competition between lizards, referring to microhabitat preference.

Early herpetological investigations on the island complex. The first herpetological investigations were performed 90 years ago by Otto Cyrén (Cyrén, 1935). His brief excursions on the islet group resulted in five different reptile species: *Testudo hermanni, Mediodactylus kotschyi, Lacerta trilineata, Elaphe quatuorlineata,* and *Platyceps najadum*. Similarly, 51 years later, Peter Frank Keymar (1986) published an annotated herpetofauna list for the Ionian Islands where two additional reports of *L. trilineata* and the first occurrence of *Malpolon insignitus* were mentioned

[1] Independent Researcher, Patras, Achaia, Greece.
[2] Independent Researcher, Lousika, Achaia, Greece.
[*] Corresponding author. E-mail: eliastzoras@outlook.com

on Oxia Islet (Keymar, 1986). Fairly recently, 37 years after the last publication by Keymar (1986), a second species of tortoise (*T. marginata*) was reported for the first time on Petalas Islet, highlighting the only known herpetofauna occurrence on the islet (Tzoras et al., 2023). Surprisingly, no herpetological survey was carried out on most of the Echinades islets and the three aforementioned papers are the only faunistic references for the island complex.

Material and Methods

Study area. The Echinades Island Complex is located in the Ionian Sea, Greece (38.4240°N, 21.0589°E), and includes twenty islets lying off the western shore of mainland Greece (Fig. 1). The islets are comparatively young in origin and were connected with the mainland during the Last Glacial Maximum when the sea-level was 120 meters lower than at present (Ferentinos et al., 2012). Today, all islands except two (Ekso Petra and Praso) are included in the Natura 2000 protected areas network (site code: GR2310001).

Terrestrial habitats. The biotopes on the focal islands are primarily composed of six types of vegetation according to recent vegetation cover schemes (Fig. 2; Iliadou et al., 2014). Smaller islets such as Makri, Makropoula, Modi, Apasa, Girovaris, Soros, Praso, Labrino, Sofia, Pistros, Philippos, Ekso Petra and Tsakalonisi, are predominantly covered by Thermo-Mediterranean *Euphorbia dendroides* shrubs, together with garrigues of the East Mediterranean, as well as *Sarcopoterium spinosum* phrygana vegetation. Commonly, scattered stands of *Olea europaea* grow in most of these habitats. However, more extensive forested areas of *O. europaea* and *Pistacia lentiscus* shrubs also occur regularly on the larger islets of the archipelago (Drakonera, Provati, Karlonisi, Kalogiros, Pontikos, Petalas and Oxia). On Petalas Islet, *Quercus macrolepis* trees sporadically occur across the island. In addition, Mediterranean forest of *Pinus halepensis* grows on Oxia Island only (Iliadou et al., 2014). The islets are mainly composed of sedimentary rocks such as limestone with no permanent superficial water bodies. Overall, because the majority of the study islands are covered by a dense layer of xeric vegetation, access to most parts is very difficult. Nonetheless, on the islands of Pontikos, Provati, Petalas and Drakonera, also larger rocky valleys can be found, creating important open areas for thermoregulation for most herpetofauna taxa. The highest points are raised on Petalas and Oxia, approximately 250 and 420 m elevation (Iliadou et al., 2014).

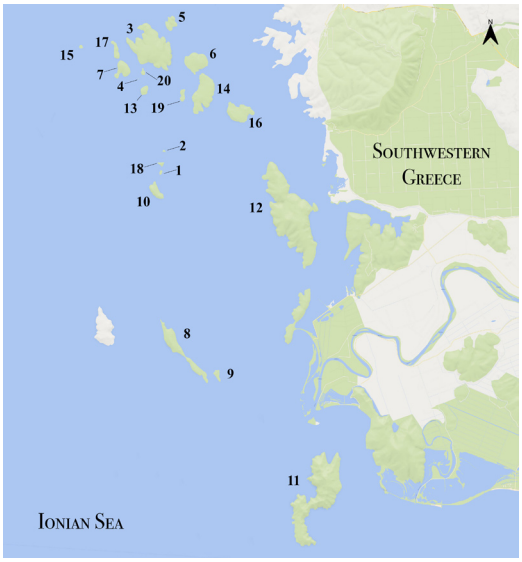

Figure 1. The satellite islets of Echinades Island Complex in alphabetical order: Apasa (1), Girovaris (2), Drakonera (3), Ekso Petra (4), Kalogeros (5), Karlonisi (6), Labrino (7), Makri (8), Makropoula (9), Modi (10), Oxia (11), Petalas (12), Pistros (13), Pontikos (14), Praso (15), Provati (16), Sofia (17), Soros (18), Tsakalonisi (19), Philippos (20). The islets shown in green represent the study area.

Field expeditions. We conducted 17 herpetological visits during spring and autumn of 2022 and 2023 on the insular ecosystems of Echinades Island Complex. Field excursions were conducted during morning hours, while night surveys were only conducted on Petalas Islet covering the north-eastern part. Our visits were carried out mainly under low-wind conditions and clear or partly overcast sky. Each islet was visited twice, except Pistros, Makri and Soros that were explored only once. Overall, twenty islets were surveyed for herpetofauna species using Visual Encounter Surveys (VES). Reptile species were recorded by active searching in potential microhabitats and visually scanning of tree trunks, shrubs, rocks or stone piles. On a few islets e.g., Makri, Oxia, Sofia, Pistros, Philippos, Pontikos and Drakonera, the vegetation was so impermeably dense that surveys were limited to bush clearings and other open habitats, such as the vegetated sea cliffs in the coastal parts.

Results

Species accounts. The European Snake-eyed Skink, *Ablepharus kitaibelii* Bibron & Bory de Saint-Vincent,

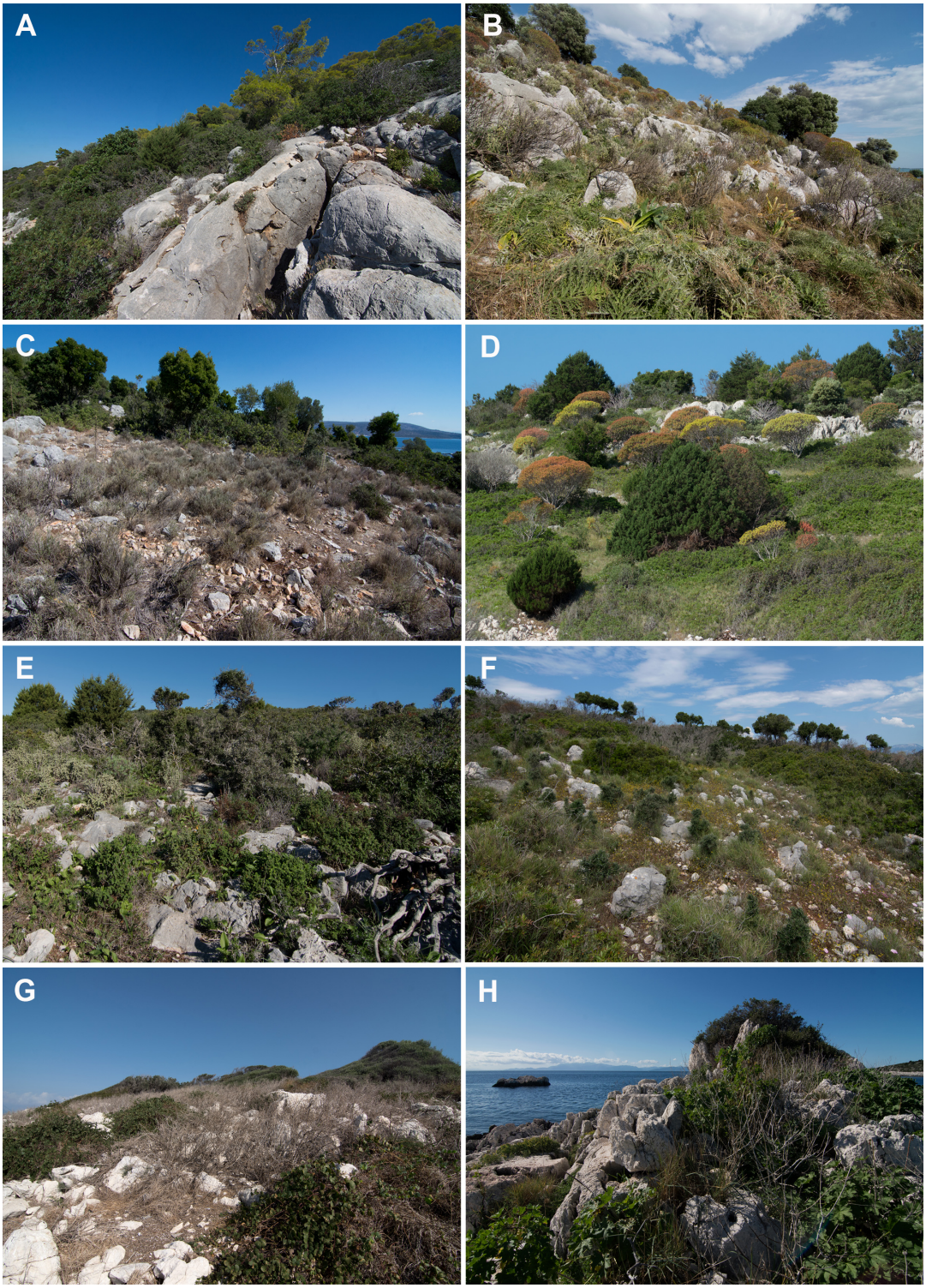
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Figure 2. Natural habitats on Echinades Island Complex. (A) Macchia shrublands and Aleppo pines (*Pinus halepensis*) on Oxia Islet. (B). Sporadic oaks of *Quercus macrolepis* at rocky terrain on Petalas Islet. (C) Phrygana vegetation of *Sarcopoterium spinosum* on Karlonisi Islet. (D) Arborescent matorral with *Juniperus* spp., on Sofia Islet. (E) Dense macchia vegetation on Labrino Islet. (F) Opening next to macchia vegetation on Pistros Islet. (G) Habitat of *Hemidactylus turcicus, Mediodactylus kotschyi* and *Ablepharus kitaibelii* on Praso Islet. (H) Vegetation on Ekso Petra Islet, the smallest islet in the complex. Photos by Elias Tzoras.

1833, is a new addition to the herpetofauna of the Echinades Island Complex. A single specimen was spotted under a rock on Praso Islet, in a habitat composed of low bush formations. Another two individuals were encountered on Kalogiros Islet moving at the edges of a forested area of *O. europaea* stands. The species is more likely rare on the islets and was only occasionally recorded.

The Mediterranean House Gecko, *Hemidactylus turcicus* (Linnaeus, 1758), was also recorded for the first time in our study area. In total, 78 individuals were found on eight islets: Girovaris, Drakonera, Karlonisi, Labrino, Petalas, Pontikos, Praso and Soros. On larger islets such as Petalas and Pontikos, the species was mostly observed dwelling tree trunks of *O. europaea* or *Q. macrolepis* while on smaller islets it was predominantly spotted on rocks or stones at ground level. On Petalas Islet, it was encountered in good numbers especially in large trees and abandoned buildings. At a single building 19 individuals were spotted at the same instance. *Hemidactylus turcicus* is widely introduced in most of the Mediterranean basin, and is frequently the result of human-mediated introduction originating from the Middle East (Rato et al., 2011).

The Kotschy's Gecko, *Mediodactylus kotschyi* (Steindachner, 1870), was first recorded by Cyrén (1935) in the region from the islands of Makri and Oxia. During our surveys we confirmed *M. kotschyi* on both islets and we also encountered it on eight more islets: Ekso Petra, Kalogiros, Makropoula, Modi, Pistros, Praso, Sofia and Tsakalonisi. We observed multiple individuals that were exclusively spotted on rocks at ground level. Only a single specimen on Kalogiros Islet was encountered hidden in the bark of *O. europaea* at approximately 2 meters height. Commonly, the species was found hidden or basking on rocks at open areas dominated by low macchia vegetation. The species was frequently observed in islets with dry habitats such as sclerophyllous macchia shrubs in rocky terrain. It was found predominantly on small islets but also on the second largest island of Oxia, where a single subadult individual living in the lighthouse, situated on the south-western edge of the island was recorded.

The presence of the Ionian Wall Lizard*, Podarcis ionicus* (Lehrs, 1902), was noticed on the island complex for the first time during our surveys. *Podarcis ionicus* is the most common reptile on the smallest islets and was recorded on ten islets: Apasa, Girovaris, Labrino, Makropoula, Modi, Pistros, Sofia, Soros, Tsakalonisi and Philippos. In total, 145 individuals were spotted during our surveys. The species was found inhabiting all available habitats, but particularly in low bushy formations of macchia vegetation and open areas in sparse *O. europaea* forests. On Sofia and Lambrino islets the species was also found in Arborescent matorral with *Juniperus* spp.

The Balkan Green Lizard, *Lacerta trilineata* Bedriaga, 1886*,* was firstly recorded on Karlonisi and Provati islets by Cyrén (1935). Afterwards, Keymar (1986) mentioned the species on Oxia Islet. We confirmed its presence on these islets, and recorded it on Petalas and Pontikos islets. Here, *L. trilineata* seems to inhabit only the larger islets, occupying open areas characterised by dry phrygana formations and macchia vegetation as well as openings at forested regions of *O. europaea* and *Q. macrolepis*. Generally we recorded low population densities on most of the islets, but on Pontikos and Provati the species exhibits high population density, especially on the rocky slopes of the coastal area. For instance, on Pontikos we recorded nine adults at a straight distance of 300 meters, while on Provoti we encountered 19 individuals, both subadults and adults, during a one-hour and 30-minutes survey. On Petalas Islet, the species should be rare and was recorded only once. On Karlonisi Islet, a few occasional observations were made.

The Four-lined Snake, *Elaphe quatuorlineata* (Bonnaterre, 1790), was first reported on Provati and Karlonisi islets by Cyrén (1935). We did not confirmed its presence on those islets, but we recorded the species on three additional islets: Petalas, Pontikos and Makropoula. On Petalas, we found a hatchling hidden inside a bark of *Q. macrolepis*, while on Pontikos an adult male was encountered basking on the ground, close to the seashore. On Makropoula Islet, an old part of an exuvia was noticed attached to rock. On the island

complex the species inhabits low vegetated sea cliffs on the coastal edges as well as forested areas dominated by *O. europaea* and *Q. macrolepis*.

During our surveys, the Balkan Whip Snake, *Hierophis gemonensis* (Laurenti, 1768), was documented on three different islets across the complex: Drakonera, Modi and Provati. In all cases, adult individuals were encountered moving on the ground. These observations represent the first record of the species on the island group. The Balkan Whip Snake was encountered in open rocky areas composed of macchia vegetation or stony, low vegetated coastal slopes.

Each observation regarding the Dahl's Whip Snake, *Platyceps najadum* (Eichwald, 1831), was given by Cyrén (1935), who found it on Karlonisi, Provati and Oxia islets. We confirmed its presence only on Oxia from a single individual, but we also encountered *P. najadum* on Petalas Islet, where we recorded 3 adult individuals living among stones on the ground. *Platyceps najadum* was found to occupy dry habitats composed of *P. lentiscus* shrubs and extensive dense formations of *Phlomis fruticosa*.

The Eastern Montpellier Snake, *Malpolon insignitus* (Geoffroy Saint-Hilaire, 1827), is documented in the literature from the island of Oxia (Keymar, 1986). During our surveys we did not detect the species on the island complex. More targeted investigations are required for its presence on the island group.

The Hermann's Tortoise, *Testudo hermanni* Gmelin, 1789, was first reported on Provati Islet by Cyrén (1935). To spot *T. hermanni* on Provati, we searched mostly in open areas and in suitable sites with bushy formations where the species is usually resting during midday. Nevertheless, during both visits we did not detect any sign of Hermann's Tortoise on the islet. However, during additional visits in adjacent islets we recorded the species on Drakonera Islet. A single male individual was spotted moving at the openings of *O. europaea* trees bordering dense formations of *P. lentiscus*. Despite our efforts, we were unable to encounter more individuals.

The Marginated Tortoise, *Testudo marginata* Schoepff, 1793, was first reported on Petalas Islet only recently (Tzoras et al., 2023). During our expeditions the species was again found on Petalas, but also on Pontikos Islet. On Petalas Islet, *T. marginata* exhibits high population density which mostly occurred in extensive dense formations of *P. fruticosa* situated at dry stony terrain. Furthermore, on Pontikos Islet, a single adult male was observed at low spiny formations of phrygana vegetation bordering a dense forested area of *O. europaea*.

Discussion

Our expeditions constitute the first comprehensive herpetological investigation of the insular ecosystems of the Echinades Island Complex in the Ionian archipelago. Before this work, only seven reptile taxa had been documented on the Echinades Islands: two chelonians (*T. hermanni, T. marginata*), two lizards (*M. kotschyi, L. trilineata*), and three snakes species (*E. quatuorlineata, P. najadum, M. insignitus*) (Cyrén, 1935; Keymar, 1986; Tzoras et al., 2023). We recorded four additional species new for this island complex: *A. kitaibelii, H. turcicus*, *P. ionicus* and *H. gemonensis*. Aside from *M. insignitus* mentioned by Keymar (1986) on Oxia Islet, we confirm the presence of all other recorded reptile species (Table 1). Moreover, 39 new insular distributional records are documented here for the first time, enriching our knowledge of the herpetofauna on this island complex. We recorded multiple new island occurrences of *P. ionicus* (10), *M. kotschyi* (8), *H. turcicus* (8), *L. trilineata* (2), and *A. kitaibelii* (2). The presence of snakes was significantly lower than that of most lizards, consisting of a few new island records of *E. quatuorlineata* (3), *H. gemonensis* (3), and *P. najadum* (1). Furthermore, new insular records of chelonians were also documented for *T. hermanni* (1), and *T. marginata* (1). In total, 437 individuals of ten different reptile species were encountered.

The most frequently encountered species of lizard were *P. ionicus* (40%), *M. kotschyi* (22%) and *H. turcicus* (21%), followed by *L. trilineata* (16%) and *A. kitaibelii* (1%). Observations of snake and tortoise species were considerably less frequent, most likely because of lower population densities, secretive lifestyle or even interspecific competition. From all the islets we visited, *M. kotschyi* and *H. turcicus* were recorded in syntopy only once. They were encountered together on Praso Islet, the third smallest islet of the area, covering a surface area of 13,155m^2. On Praso, both gecko species exhibited high population densities co-occurring within the same microhabitats, and utilising communal nesting sites. On the first visit, 11 *H. turcicus* and 14 *M. kotschyi* adults were counted in less than an hour. However, this abundance was not repeatedly observed during the same period the next year, and only a few juveniles of both species were spotted. *Ablepharus kitaibelii* was particularly found in sympatry with both geckos. The lacertid species of *P. ionicus* and *L. trilineata* were not recorded in coexistence on any islet. *Podarcis ionicus* was most frequently observed in coexistence with geckos, encountered in sympatry with *M. kotschyi* (5

Table 1. The herpetofauna of Echinades Island Complex and its geographic distribution based on literature and unpublished data. Numbers in the first column correspond to those in Figure 1.

No.	Island	Area (m^2)	*A. kitabelii*	*H. turcicus*	*M. kotschyi*	*P. ionicus*	*L. trilineata*	*E. quatuorlineata*	*H. gemonensis*	*P. najadum*	*M. insignitus*	*T. hermanni*	*T. marginata*	References
1	Apasa	20.025				+								Current work
2	Girovaris	11.155		+		+								Current work
3	Drakonera	2.441.954		+					+			+		Current work
4	Ekso Petra	1.183			+									Current work
5	Kalogeros	242.348	+		+									Current work
6	Karlonisi	714.102		+			+	+		+				Cyrén, 1935, Current work
7	Labrino	365.265		+		+								Current work
8	Makri	952.668			+									Cyrén, 1935, Current work
9	Makropoula	95.263			+	+		+						Current work
10	Modi	253.060			+	+			+					Current work
11	Oxia	4.183.868			+		+			+	+			Cyrén, 1935, Keymar, 1986, Current work
12	Petalas	5.325.725		+			+	+		+			+	Tzoras et al. 2023, Current work
13	Pistros	116.643			+	+								Current work
14	Pontikos	730.820		+			+	+					+	Current work
15	Praso	13.155	+	+	+									Current work
16	Provati	1.194.675					+	+	+	+		+		Cyrén, 1935, Current work
17	Sofia	170.375			+	+								Current work
18	Soros	33.764		+		+								Current work
19	Tsakalonisi	102.260			+	+								Current work
20	Philippos	42.765				+								Current work

islets) and *H. turcicus* (3 islets). While the larger lacertid of the complex *L. trilineata* was mainly recorded in sympatry with *H. turcicus* and in a single case with *M. kotschyi*, utilising significantly different microhabitats. According to our observations and literature overview, only on Provati Islet more than two snake species (e.g., *E. quatuorlineata, H. gemonensis* and *P. najadum*) are found in sympatry (Cyrén, 1935; Current study), while we did not manage to detect further islets inhabited by multiple snake species (see Table 1). Predominantly, a single or a couple of snake species were encountered on other larger islets e.g., *E. quatuorlineata* and *P. najadum* on Karlonisi Islet, *P. najadum* and *M. insignitus* on Oxia Islet, etc. Finally *T. hermanni* and *T. marginata* were not encountered inhabiting the same island.

It is noteworthy to mention the presence of *A. kitaibelii* on Praso and Kalogiros islets, since both insular records constitute the only known report on remote islets in the Ionian Sea (Sillero et al., 2014). Another worthy observation is the presence of *T. hermanni* on Drakonera Islet, as the species was known to inhabit only the adjacent Provati Islet (Cyrén, 1935) and Ammouliani Island in Aegean archipelago (Strachinis, 2022). The occurrence of *T. marginata* on Pontikos Islet extends its geographical range to another remote islet situated in the Ionian Sea (Escoriza et al., 2023). For both tortoise and snake species, larger islands may also harbour undiscovered populations.

Notes on ecological peculiarities of geckos. Over the course of the field investigations, we noted an unusual lifestyle concerning microhabitat preference on gecko species. We noticed, especially for *H. turcicus,* a higher frequency of using tree trunks (58%) than rocks or stones (42%) on the ground when it comes in coexistence with *L. trilineata*. This was particularly obvious on two large islands (Petalas and Pontikos) where both species co-occurred at the same habitat (openings adjacent to forested areas). On these two islets we detected 41 *H. turcicus* utilising tree trunks and only four on rocks or stones at ground level. Furthermore, on the large islet of Karlonisi, in which both *H. turcicus* and *L. trilineata* coexist, *H. turcicus* was only spotted in low numbers (2 individuals in total) inhabiting vertical surfaces in human settlements, but we failed to detect it on nearby tree trunks or rocks due to scarce microhabitat suitability (e.g., young trees and attached rocks on the ground). On the other hand, on smaller islets such as Girovaris, Labrino, Praso and Soros where *L. trilineata* is not present, *H. turcicus* was found exclusively on rocks or stones (24 individuals in total) on the ground, which were occasionally observed in harmonious coexistence with *A. kitaibelii, M. kotschyi* and *P. ionicus* utilising the same microhabitat (e.g., rocks on ground).

Shifting microhabitat selection on tree trunks by *H. turcicus* when *L. trilineata* occurs in the same habitat has also been noticed on the neighbouring islet of Kastos, approximately 15 km straight-line distance from the study area (Tzoras and Drakopoulos, unpubl. data). Moreover, similar species distribution patterns of *H. turcicus* and *L. trilineata* have also been observed on Othoni Islet (north-western Ionian Sea), but the gecko's microhabitat preference was not discussed by Stille and Stille (2016). Evidently, we hypothesised that the occurrence of *L. trilineata* on such small islets may influence the microhabitat preference of *H. turcicus* when coexistence occurs, although this still requires further evidence. In the Echinades Islands, this behavioural change of *H. turcicus* from a rock-dwelling to an arboreal, perhaps indicates microhabitat partitioning among the taxa due to intense territorial competition, or predation pressure by sympatric species. It may also be linked to historical translocation events of *H. turcicus* on these islets. This arboreal behaviour is likely attributed to secondary events of adaptation to unoccupied habitats in terms of minimising interaction with the naturally distributed and competitive species, such as the *L. trilineata*.

Similarly, Pafilis et al. (2020) also detected arboreal activity by the saxicolous gecko *M. kotschyi* from Monolia Islet in Lichadonissia (western Aegean Sea). They assumed that predation pressure by snakes or small mammals might be a possible explanation that shifted the gecko's lifestyle (Pafilis et al., 2020). The same pattern was observed in the Peloponnese where *M. kotschyi* is mainly found on trees in a striking deviation from its insular peers (Schwarz et al., 2016).

In our study area we also identified two cases of *M. kotschyi* exhibiting arboreal behaviour. Firstly, we observed a single individual on a tree on Kalogiros Islet, where large lizards or other potential predators are seemingly absent. Secondly, we encountered another individual inhabiting a vertical artificial surface on Oxia Islet, but despite our field effort we could not come across *M. kotschyi* in a natural microhabitat. On Oxia Islet, *L. trilineata* widely occurs, however, interspecific interactions between these two species were not encountered during field surveys.

Further investigation will shed light to our hypothesis regarding interspecific competition of small geckos versus larger lizards inhabiting satellite islands in the Ionian Sea, but would also provide additional

distributional data that have not yet been recorded on Echinades Island Complex.

The herpetofauna of the Echinades Island Complex is comparatively rich, comprising taxa commonly distributed on the adjacent continental region of western Greece and the larger Ionian Islands. The composition of its herpetofauna includes indigenous species and subspecies from the Balkan Peninsula such as *Mediodactylus kotschyi bibroni, Podarcis ionicus, Lacerta trilineata trilineata, Testudo hermanni boettgeri, T. marginata, Elaphe quatuorlineata quatuorlineata* and *Hierophis gemonensis*, but also taxa exhibiting wider distributional ranges, that originated from eastern Mediterranean to Irano-Turanian regions (i.e., *Ablepharus kitaibelii kitaibelii, Malpolon insignitus fuscus* and *Platyceps najadum dahlii*). Additionally, the patchy distribution of the widely naturalised and synanthropic *Hemidactylus turcicus* on the islets might indicate either past anthropogenic introduction events or secondary dispersal to the islands. In summary, the herpetofauna of the islands is composed of eleven reptile species including two species of tortoises, five species of lizards and four species of snakes. Because of their isolation, such island groups can act as important insular refuges not only for herpetofaunal taxa but also for other vertebrates inhabiting remote islands, thus their conservation should become a high priority.

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References

Bader, T., Riegler, C., Grillitsch, H. (2009): The herpetofauna of the Island of Rhodes (Dodecanese, Greece). Herpetozoa **21**(3/4): 147–169.

Boettger, O. (1888): Verzeichniss der von Herrn E. von Oertzen aus Griechenland und aus Kleinasien mitgebrachten Batrachier und Reptilien. Sitzungsberichte der Königlich Preußischen Akademie der Wissenschaften zu Berlin **1888**(I): 139–186.

Broggi, M.F. (2000): Herpetological notes on the islands of Milos and Sifnos (Cyclades, Greece) (Amphibia, Reptilia). Herpetozoa **13**(1/2): 89–93.

Buchholz, K.F. (1955): Herpetologische Ergebnisse zweier Cycladenreisen. Bonner Zoologische Beiträge **6**: 95–110.

Buttle, D. (1985): An introduction to reptiles and amphibians of the Crete island. Reptilia, Münster, Barcelona **3**(7): 15–22.

Cattaneo, A. (2005): Nuovo contributo alla conoscenza dell'erpetofauna dell'isola egea di Kalymnos (Sporadi Meridionali). Bollettino del Museo civico di storia naturale di Venezia **56**: 153–163.

Cattaneo, A., Cattaneo, C., Grano, M. (2020): Update on the herpetofauna of the Dodecanese Archipelago (Greece). Biodiversity Journal **11**: 69–84.

Clark, R. (1989): A check list of the herpetofauna of the Argo-Saronic Gulf District, Greece. British Herpetological Society Bulletin **28**: 8–24.

Cyrén, O. (1935): Herpetologisches vom Balkan. Blatter für Aquarien- und Terrarienkunde, Magdeburg **46**: 129–135.

Escoriza, D., Tzoras, E., Bringsøe, H. (2023): *Testudo marginata* Schoepff 1793 – Marginated Tortoise, Kraspedochelóna, Breshka Malore, Testuggine Marginata. In: Conservation Biology of Freshwater Turtles and Tortoises: A Compilation Project of the IUCN/SSC Tortoise and Freshwater Turtle Specialist Group, p. 1–25. Rhodin, A.G.J., Iverson, J.B., van Dijk, P.P., Stanford, C.B., Goode, E.V., Buhlmann, K.A., Mittermeier, R.A., Eds., Chelonian Research Monographs **5**.

Ferentinos, G., Gkioni, M., Geraga, M., Papatheodorou, G. (2012): Early seafaring activity in the southern Ionian Islands, Mediterranean Sea. Journal of Archaeological Science **39**: 2167–2176.

Foufopoulos, J., Roussos, S., Kalogiannis, S., Kalb, S., Strachinis, I., Brock, K.M. (2024): The herpetofauna of the Sporades Islands (Aegean Sea, Greece): New discoveries and a review of a century of research. Herpetozoa **37**: 231–256.

Iliadou, E., Panitsa, M., Raus, Th., Dimopoulos, P. (2014): Flora and factors affecting species diversity in protected "Natura 2000" sites of the Ionian area: the Echinades islet group (Greece). Willdenowia **44**(1): 121–136.

Keymar, P.F. (1986): Die Amphibien und Reptilien der Ionischen Region (Griechenland) -Analyse ihrer rezenten Verbreitungsmuster und Überlegungen zu ihrer Ausbreitungsgeschichte. ÖGH-Nachrichten, Wien **1986**(8/9): 8–44.

Lymberakis, P., Pafilis, P., Poulakakis, N., Sotiropoulos., K, Valakos., E.D. (2018): The Amphibians and Reptiles of the Aegean Sea. In: Biogeography and Biodiversity of the Aegean. In honour of Prof. Moysis Mylonas, p. 169–189. Sfenthourakis, S., Pafilis, P., Parmakelis, A., Poulakakis, N., Triantis, K.A., Eds.. Nicosia, Cyprus, Broken Hill Publishers Ltd.

Pafilis, P., Triantis, K., Anastasiou, I., Proios, K., Valakos, E.D. (2020): A Gecko archipelago: a herpetological survey on Lichadonissia, a small islet group in Greece. Herpetology Notes **13**: 25–28.

Rato, C., Carranza, S., Harris, D. (2011): When selection deceives phylogeographic interpretation: The case of the Mediterranean house gecko, *Hemidactylus turcicus* (Linnaeus, 1758). Molecular Phylogenetics and Evolution **58**: 365–373.

Schwarz, R., Gavrilidi, I-A., Itescu, Y., Jamison, S., Sagonas, K., Meiri, S., et al. (2016): *Mediodactylus kotschyi* in the Peloponnese peninsula, Greece: distribution and habitat. Acta Herpetologica **11**: 179–187.

Sillero, N., Campos, J., Bonardi, A., Corti, C., Creemers, R., Crochet, P.A., et al. (2014): Updated distribution and biogeography of amphibians and reptiles of Europe. Amphibia–Reptilia **35**: 1–31.

Sindaco, R., Rossi, R. (2020a): Annotated checklist of the herpetofauna (Amphibia, Reptilia) of Lefkada Island (Ionian Islands, Greece). Natural History Sciences. Atti della Società italiana di Scienze naturali e del Museo civico di Storia naturale in Milano **7**(2): 57–68.

Sindaco, R., Rossi, R. (2020b): First report on the herpetofauna of Meganissi Island (Lefkada, Ionian Islands, Greece). Herpetology Notes **13**: 81–84.

Speybroeck, J., Bohle, D., Razzetti, E., Dimaki, M., Kirchnerm, K., Beukema, W. (2014): The distribution of amphibians and reptiles on Samos Island (Greece) (Amphibia, Reptilia). Herpetozoa **27**(1/2): 39–63.

Strachinis, I. (2022): First Insights on the Herpetofauna of Ammouliani Island, Chalkidiki, Greece. Ecologia Balkanica **14**(2): 199–203.

Strachinis, I., Roussos, S.A. (2016): Terrestrial herpetofauna of Limnos and Agios Efstratios (Northern Aegean, Greece), including new species records of *Malpolon insignitus* (Geoffroy Saint-Hilaire, 1827) and *Pelobates syriacus* Boettger, 1889. Herpetology Notes **9**: 237–248.

Stille, B., Stille, M. (2016): The herpetofauna of Mathraki, Othonoi and Erikoussa, Diapontia islets, Greece. Herpetozoa **28**(3/4): 193–197.

Stille, B., Stille, M. (2017): The herpetofauna of Corfu and Adjacent Islands. Edition Chimaira, Frankfurt am Main.

Troidl, A., Troidl, S. (2007): Fotoexkursion zu den Riesen-Smaragdeidechsen auf der Kykladeninsel Tinos (Griechenland). Die Eidechse **18**(2): 38–44.

Tzoras, E., Hoese., G., Mamasis, D. (2023): Geographic Distribution. *Testudo marginata* (Marginated Tortoise). Herpetological Review **54**(2): 241–242.

Valakos, E., Mylonas, M. (1992): Distribution and ecological aspects of the herpetofauna of Strofadhes Islands (Ionian Archipelago, Greece). Herpetozoa **5**(1/2): 33–39.

Warnecke, H. (1988): *Telescopus fallax* (Fleishman, 1831) auf den ozeanischen Strophaden-Inseln? Salamandra **24**: 16–19.

Weittstein, O. (1953): Herpetologia Aegea. Sitzungsberichte Österreichische Akademie der Wissenschaften, Mathematisch-Naturwissenschaftliche Klasse, Abteilung I **162**: 651–833.

Werner, F. (1938): Die Amphibien und Reptilien Griechenlands. Zoologica **35**: 1–117.

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