Herpetofauna of Paxos, Ionian Islands, Greece, including two species new to the island

Whereas the herpetofauna of Corfu, the northernmost of the Ionian Islands, has been extensively covered in the literature (see MERTENS 1961; TÓTH et al. 2002; RAZETTI et al. 2006) only a few reports are available for the small neighboring island of Paxos or Paxi (KEYMAR 1984; ŠANDERA et al. 2004). Although scientific reports of reptiles are scarce, Paxos has been known to harbor many snakes and in one travel companion from the early 19th century (DODWELL 1819) you could for example read: "It (Paxos) contains vast number of serpents, which are said to be of harmless and inoffensive nature.".

Paxos is the largest among the group of islands comprising Antipaxos, Panagia, Ag. Nikolaous, Mongonissi and a few other small islets or rocks. Paxos is situated 13 km SSE of Corfu and approximately 55 km northwest of Lefkada (Santa Maura). The distance to the Greek mainland is 15 km.

The vegetation is typically Mediterranean, and the landscape and flora are highly influenced by centuries of human activity such as farming. In later years, tourism, house building and constructions of roads also have had an impact on the environment with degradation of the natural vegetation as a consequence. Approximately 75 % of the flora has a Mediterranean distribution in a wide sense (GEORGIADIS et al. 1986). About 435 plant taxa (species and subspecies) have been reported from the island and the forest is mainly of the Oleo-Ceratoneous type with species such as *Ceratonia siliqua*, *Pistacia lenticus*, *Juniperus phoenicea*, *Pinus halepensis*, and *Olea europaea*, but tree species such as *Quercus ilex* and *Cupressus sempervirens* belonging to the so-called Quercus ilicis level are also represented. In the south of the Island a low-laying coastal level of phrygana vegetation can be found.

Paxos has an area of 30 km^2 and a population of around 2,500 permanent residents. The average annual precipitation is similar to that of Corfu, i.e., approximately 1,000 mm. However, on Paxos all the natural water ways dry out completely in summer; there are no natural springs or water reservoirs in the ground and water has always been scarce during the summer months. Old water-cisterns with small canals carved in the sloping rocks for the collection of rain water can be found in some places on the island, indicating that special measures had to be taken to collect and preserve fresh water.

Paxos, Antipaxos, Lefkada, Cephalonia and Zakynthos belong to the Preapulian or Paxos sedimentary zone, a zone that corresponds to the most external domain of the Hellenic fold-and-thrust belt (KARAKITSIOS et al. 2010), while Corfu belongs to the Ionian sedimentary zone. The Paxos coastline is much eroded and boasts more sea caves per kilometer than any other coast line in the world (FRIEND 2002). The Preapulian zone has traditionally been considered a relatively uniform sedimentary zone consisting of limestone, dolomites, marlstone and evaporite, and the absence of flysch, but recent studies have revealed a more complex scenario (KARAKITSIOS et al. 2010). The topography of Paxos also differs from Corfu in the absence of high mountains and

Fig. 1: First record of *Mediodactylus kotschyi* (Steindachner, 1870) on Paxos.

Fig. 2: First record of *Hierophis gemonensis* (Laurenti, 1768) on Paxos.

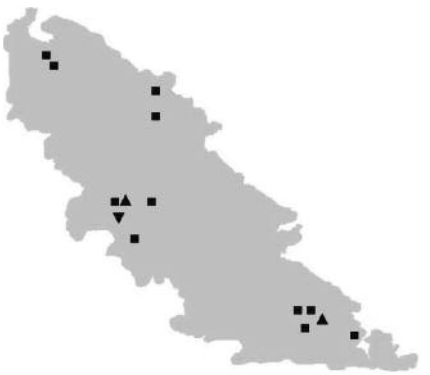

Fig. 3: Localities of saurians on Paxos.

Squares - *Algyroides nigropuncatus* (Duméril & Bibron, 1839), turned triangle - *Hemidactylus turcicus* (Linnaeus, 1758), triangles - *Mediodactylus kotschyi* (Steindachner, 1870).

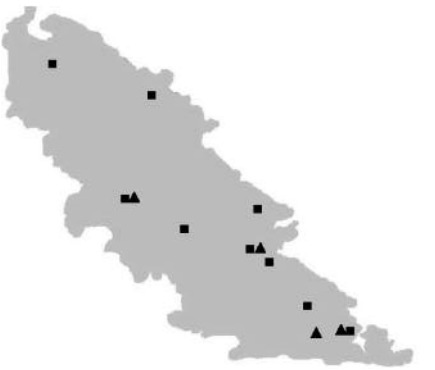

Fig. 4: Localities of snakes on Paxos.

Squares - *Hierophis gemonensis* (Laurenti, 1768), triangles - *Zamenis longissimus* (Laurenti, 1768).

alluvial plains that are able to keep water for longer periods. The presence of both larger and smaller alluvial plains on Corfu makes it suitable breeding ground for amphibians that reproduce early in the year such as *Rana dalmatina* Bonaparte, 1840, *Bufo viridis* Laurenti, 1768, *Hyla arborea* (Linnaeus, 1758) and *Lissotriton vulgaris* (Linnaeus, 1758), species that all seem to be absent from Paxos.

Previously published reports from Paxos mention *Algyroides nigropunctatus* (Duméril & Bibron, 1839) and *Hemidactylus turcicus* (Linnaeus, 1758) (Koch 1932), *A. nigropunctatus*, *H. turcicus* and *Lacerta viridis* (Laurenti, 1768) (Keymar 1984), *Laudakia* [syn. *Stellagama*] *stellio* (Linnaeus, 1758) (one individual observed, Sowig & Sowig 1989), and *A. nigropunctatus*, *Zamenis longissimus* (Laurenti, 1768) and *Platyceps najadum* (Eichwald, 1831) (Sandera et al. 2004).

During three days in 2013 (May 20-23) the authors searched the island for reptiles and amphibians. The weather was windy but in general beneficial, and five reptile species were observed: *H. turcicus*, *Mediodactylus kotschyi* (Steindachner, 1870), *A. nigropunctatus*, *Hierophis gemonensis* (Laurenti, 1768) and *Z. longissimus*. No amphibians were found, and given the water situation of Paxos it is highly unlikely that amphibians have ever managed to establish populations.

Algyroides nigropunctatus (> 10 specimens) - The Dalmatian Algyroides was the only diurnal lacertid encountered during the visit to the island. It is well known for its abundance on Corfu but despite generally favorable weather conditions they did not appear to occur in such high densities as on the latter mentioned island. Lizards were typically encountered basking on the trunks of olive trees and on dry stone walls, and a couple of specimens were even found hiding beneath stones during cloudy weather. Most of the females seen on Paxos had a generally lighter brown coloration than those found on Corfu, often with a lighter colored chin.

Mediodactylus kotschyi (Fig. 1) (> 10 specimens) - This is a new record for Paxos and based on its close proximity to Corfu this find may further support the theory of the island's lineage in the Preapulian zone rather than having affiliations with Corfu. This gecko is already known from Kefalonia, Ithaki, Zakynthos and the smaller

islands of Kalamos, Makri and Oxia in the Ionian Archipelago, although the subspecies status of the geckos on these islands is still uncertain (CHONDROPOULOS 1986). The authors only observed this species at two localities on Paxos, a small quarry on the edge of some largely disused olive groves where several geckos were found beneath stones and a dry stone wall where a couple were seen diurnally basking.

Hemidactylus turcicus (two specimens) - In contrast to its abundance across most of its range, only a few Turkish Geckos hiding under stones during the daytime were observed on Paxos. The relatively cold nights during the stay could have contributed to the lack of observations of this species around inhabited areas at night. From the authors' experience**,** this species, unlike *M. kotschyi*, is scarcely seen active during the daytime in the spring months.

Hierophis gemonensis (Fig. 2) (14 specimens) - A road-killed specimen represented the first record of the Balkan Whip Snake on Paxos. Half of the records were found as road-kills whereas live examples were most often seen basking among densely vegetated edges of olive groves, as well as on dry stone walls and olive trees. On two occasions feral cats were seen killing adult specimens of this snake.

Zamenis longissimus (4 specimens) - Along with *Platyceps najadum*, this was the only snake previously recorded on Paxos. Elsewhere it is only known from Corfu on the Greek islands (CHONDROPOULOS 1989). From four snake specimens recorded, two were live and two road-killed. The first was found crossing the road in the late afternoon and a second was found dead on a quiet inland road not too far away. The further two specimens were very large. A male of 185 cm was found freshly killed on a busier road leading to Gaios and a female of 175 cm was caught near a water cistern on a cloudy afternoon. The size attained by these snakes could be related to the lack of competition from any other large snake on the island. Owing to its preference for mammal and bird prey items, it is plausible that many adult snakes on Paxos do reach a larger size than those where other more dominant colubrid snakes are present.

The record localities of the reptile species are shown in Figures 3 and 4.

The authors find it unlikely that *Laudakia stellio* is established on the island, and did not observe any *Lacerta viridis* or *Platyceps najadum*. However, the latter two could still possibly be considered among the herpetofauna of Paxos, especially considering that *P. najadum* is already well known from Corfu and small islets in the Ionian Islands such as Kalamos, Kastos, Karlonissi, Provati and Oxia (CHONDROPOULOS 1989). *Lacerta viridis* has only been reported by KEYMAR (1984) who found it in the phrygana vegetation zone limited to the extreme southern part of the island. The authors agree with KEYMAR that there are few, if any, other areas suitable for this species. A further two species, *Ablepharus kitaibelii* BIBRON & BORY, 1833 and *Telescopus fallax* (FLEISCHMANN, 1831) are known for their adaptation and distribution on the majority of islands in Greece, including some very tiny islets. This includes all of the main Ionian Islands and the small islet of Strophades, south of Zakynthos (CHONDROPOULOS 1989). These are the most likely reptile species to have escaped detection on Paxos.

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KEY WORDS: Reptilia, *Mediodactylus kotschyi*, *Hierophis gemonensis*, new island records, herpetofauna, Paxos (Paxi), Ionian Islands, Greece.

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AUTHORS: Matt WILSON (Corresponding author < mjwilsonherp1@yahoo.co.uk >) - 48 Harehill Rd, Littleborough, England, OL15 9HE, Great Britain; Bo STILLE and Marie STILLE - Kokkini, Kefalovryss 1410, 49100 Corfu, Greece.