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FIRST RECORD OF *ZAMENIS SITULA* (LINNAEUS, 1758) (*Reptilia Serpentes*) FOR THE AEGEAN ISLAND OF CHALKI (DODECANESE, GREECE)

SUMMARY

The presence of *Zamenis situla* (Linnaeus, 1758) for the Aegean Island of Chalki (Dodecanese, Greece), is here recorded for the first time.

Key words: Dodecanese, Rhodes Archipelago, Chalki, Leopard snake.

RIASSUNTO

Prima segnalazione di Zamenis situla *(Linnaeus, 1758) (Reptilia, Serpentes) per l'isola egea di Chalki (Dodecaneso, Grecia)*. Viene qui riportata per la prima volta la presenza di *Zamenis situla* (Linnaeus, 1758) per l'isola egea di Chalki (Dodecaneso, Grecia).

Parole chiave: Dodecaneso, Arcipelago di Rodi, Chalki, Colubro leopardino.

INTRODUCTION

The first data about the herpetofauna of Chalki Island are provided by BOETTGER (1888) and WERNER (1935), afterwards summarized in the check-lists on the Greek herpetofauna realized by CHONDROPOULOS (1986, 1989). The data provided by BOETTGER about Chalki are not the result of explorations personally conducted on the island, by reason of physical infirmity was not able to travel (PAFILIS, 2010). WERNER therefore was the first zoologist to investigate the island. For several years he led a lot of researches in

Greece with the botanist Rechinger (WERNER, 1935). In 1994 the island was once again investigated by Buttle. His research in the island lasted for five days, from 5 to 9 May (BUTTLE, 1995). Finally in 2008, the herpetologist Cattaneo carried out herpetological surveys on Chalki for twelve days, namely from 3 to 14 May (CATTANEO, 2009).

MATERIALS AND METHODS

The island of Chalki has been studied by the authors in two different times, during August 2014 and April 2015. The first investigation for botanical and herpetological purpose lasting eighteen days, was also extended to the neighboring island of Alimia (CATTANEO & GRANO, 2014; GRANO *et al.*, 2015). During the first visit the daily excursions lasted about ten hours until late afternoon covering most of the geographical area of the island. The second visit instead lasted only four days. Due to the lack of means of transport and very scarce viability of the island, all places investigated were reached by foot.

Abbreviations: Tl = total length; Cl = caudal length.

Study area

Chalki is a small island belonging to the Dodecanese archipelago (SE Aegean), located south-west of the island of Rhodes. Its coordinates are: 36°13'44.49" N; 27°34'18.74" E. Administratively Chalki is part of Rhodes Regional Unit. It's located west of Rhodes (Monolithos Cape), from which is only five nautical miles, south-east of Tilos (ten nautical miles), and north of Karpathos. Has a length of 10 km, a width of 4 km and an area of 28,125 km^2 (Fig. 1). The island has several capes, of which the main ones are: Kefali, Mirtos, Trachia, Krotiri, Peristeronas and Limenari. The wider and more important bays are Imborios and Pondamos (ILIADIS, 1950). Chalki is a mountainous and rocky island and the highest peak is represented by Profitis Ilias Mount (578 m). The entire island, except for the eastern part, is surrounded by very steep cliffs with scarce accessibility. The island is essentially arid, and lacks of superficial hydrography with an extremely low presence of underground water. In ancient times Chorio (the current Palio Chorio) was the capital, village by now abandoned. Currently the population, which amounts about three hundred inhabitants, is concentrated exclusively in Imborios, which appears to be the only village on the island. Together with the small surrounding islands, Chalki is included in the Natura 2000 network (GR 4210026) for the presence of a particular bird life and for a peculiar chasmophytic flora related to elective

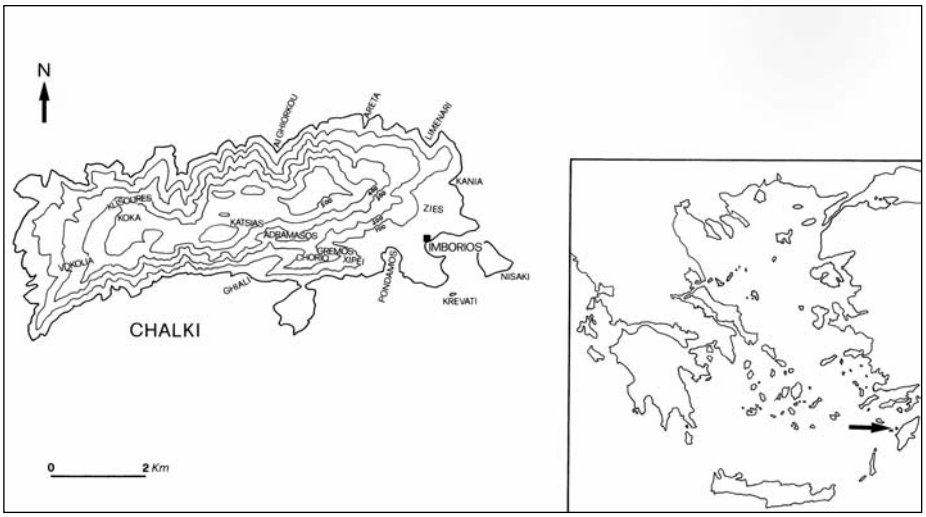

Fig. 1 — Map of Chalki Island

habitats represented by crevices in the limestone rocks of these islands (CATTANEO & GRANO, 2014). The integrity of marine environments is also attested by the presence in the island of the now rare monk seal *Monachus monachus* (MARCHESSAUX & DUGUY, 1977; DI TURO, 1984).

RESULTS

During the second investigation of the island, on 25th April 2015 at 17.00, near Palio Chorio village, a specimen of *Zamenis situla* was found (Fig. 2). The snake was in thermoregulation on the roadside. It was a male specimen Tl 70 cm, Cl 14 cm. Mite infestation were not visible as well as evident scars from previous damages and the animal appeared tonic and responsive. The pattern was attributable to the phenotype *leopardinus*, also present in Rhodes and in other islands of the Dodecanese (CATTANEO, 2007). The obvious hypertrophy of hemipenis, would suggest that the specimen was in full reproductive activity. The chorotype of *Zamenis situla* is E Mediterranean with this distribution: Albania, Bosnia and Herzegovina, Bulgaria, Croatia, Macedonia, Montenegro, Greece (incl. the islands of Aegina, Andros, Corfu, Crete, Euboea, Ithaki, Kea, Kefallinia, Kos, Kimolos, Khios, Kithira, Kithnos, Lefkada, Lesvos, Milos, Paros, Rhodes, Salamis, Samos, Samothraki, Serifos, Sifnos, Skiathos, Skopelos,

Fig. 2 — Specimen of *Zamenis situla* from Chalki Island

Skyros, Spetses, Syros, Thasos, Thira, Tinos, and Zakinthos), Italy, Malta, Serbia, Turkey (incl. the island of Gökçeada), Ukraine (SCHULZ, 2013). At present the Aegean distribution of *Zamenis situla* comprises also the island of Chalki.

CONCLUSIONS

Before of this note five species of reptiles for Chalki had been reported: *Hemidactylus turcicus* (Linnaeus, 1758), *Cyrtopodion kotschyi* (Steindachner, 1870), *Stellagama stellio* (Linnaeus, 1758), *Ablepharus kitaibelii* (Bibron et Bory, 1833), *Dolichophis jugularis* (Linnaeus, 1758). Currently it is stated the presence of the Leopard snake, *Zamenis situla* (Linnaeus, 1758). Chalki has got a peculiar herpetofauna as it lacks species such *Ophisops elegans* and *Platyceps najadum*, both taxa very common in the Eastern Aegean islands and provided with considerable adaptive capacity, especially in the ecologically poor islands (CATTANEO, 2009). As mentioned

above, until now the only snake reported for Chalki was *Dolichophis jugularis*, species previously reported by BUTTLE (1995) and later confirmed by CATTANEO (2009). The presence in Chalki, extremely dry island and lacking of water resources, of *Zamenis situla*, species related to adequately damp environments, has attracted serious concerns and questions. Even more particular is the coexistence with *Dolichophis jugularis*, snake with well-known tendency for ophiophagy. It should be noted that BOETTGER (1888), on report by Oertzen, had made a reference for the island of Chalki to the existence of *Montivipera xanthina*, but the presence of this viper has never been validated by any author (DIMAKI, 2002). Also the only one medical center of the island has confirmed to the authors of this note that nobody went to the concerned center for snakebite. JOGER & NILSON (2005) postulated that the reporting of BOETTGER (1888) could refer to *Hemorrhois nummifer*, snake phenotypically similar to *M. xanthina*; alternatively CATTANEO (2009) suggested the presence on the island of *Telescopus fallax*, snake widely spread in the eastern Aegean islands and therefore compatible at zoogeographical level. However, these hypotheses have not been confirmed. In conclusion the herpetofauna of the Aegean island of Chalki is not particularly rich, probably due to the extreme drought. In fact, the nearby island of Alimia, which has a greater vegetation cover, although it is about six times smaller than Chalki, has got two more species of Sauria, *Anatololacerta oertzeni* and *Ophisops elegans* (GRANO *et al.*, 2015). The presence on the island of *Zamenis situla*, snake of small to medium-sized, which apparently could have difficulties in coexistence with *Dolichophis jugularis*, snake very common in the island, of remarkable sizes and with well-known tendency to ophiophagy, is a peculiar fact (BUTTLE, 1995; CATTANEO, 2012; CAPULA *et al.*, 2014). Probably the coexistence between the two ophidian species is due to an optimal exploitation of ecological niches and food resources. In the Aegean Sea *Zamenis situla* usually is not located in small islands also inhabited by large ophiophagous snakes (*Dolichophis caspius*, *Dolichophis jugularis*, *Malpolon insignitus*), where the predation pressure would be too strong. In the bigger islands seems to be especially near the settlements (and also inside them), where ophiophagous species mentioned above do not arrive or limited. It is worth noting that Leopard snake in Greece is called "snake house" ("spitofito") (VALAKOS *et al.*, 2008) and in some cities in southern Italy (Bari, Catania) is common in parks and urban and suburban gardens (SCILLITANI *et al.*, 2006). It was also noted in the Aegean the tendency by Leopard snake to be active also in the cooler months of the year (including winter), in allochrony to its natural enemies (A. Cattaneo, pers. comm.).

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