

Some reptiles from Marsa El Brega, Libya (Reptilia: Chamaeleonidae, Gekkonidae, Phyllodactylidae, Lacertidae and Scincidae)

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Abstract: The terrestrial reptile fauna of Libya is under-documented due to limited research stemming from political instability. The author conducted fieldwork in Libya, specifically in Marsa El Brega, during two visits in 2013 and 2014. Out of the 25 species known from Libya's historic Cyrenaica province, 7 species were identified in the surveyed area.

Keywords: Faunistic, Libya, geckoes, skinks, lizards, chameleons

Introduction

Hardly any faunistic papers have been published on the terrestrial herpetofauna of Libya. The first papers appeared during and before the Italian colonial period (CONDORELLI 1896, CALABRESI 1916, SCORTECCI 1938, WERNER 1909, ZAVATTARI 1934, 1937), followed by a second period during the independent monarchy of Libya (SCHNURRENBERGER 1958, 1959, 1962, 1963). Some research continued during the long-lasting regime of Muammar Gaddafi (FRYNTA et al. 2000, IBRAHIM 2005, 2008, SCHNEIDER & SCHNEIDER 2008, JOGER et al. 2008, MORAVEC 1995, SAYERS 1964, SINDACO 1995). However, after the Arab Spring in 2011, zoological surveys completely stopped due to civil wars and political instability. The two species described during this period were results of collections from previous eras (BROADLEY et al. 2014, BSHAENA & Joger 2013).

While Libya has been included in broader studies on North Africa (e.g., LE BERRE 1989, SCHLEICH et al. 1996), some comprehensive nationwide publications (ZAVATTARI 1934, 1937) mainly consist of briefly annotated lists of collected specimens. Herpetofaunal research has never been a primary focus in Libya, and no comprehensive "*Herpetology of Libya*" has been published. This remained the case until 2017 when the "*Atlas of the Reptiles of Libya*" by Bauer, DeBoer, and Taylor was published. Marsa El Brega and its surrounding areas are hardly researched from a herpetological point of view: only *Acanthodactylus pardalis* (Lichtenstein, 1823) has been reported between Darnah and Marsa El Brega (ZAVATTARI 1937).

In our region, coastal vegetation (with the dominant plant being *Niraria retusa*, a salt-tolerant coastal-desert shrub native to North Africa), shrub vegetation (primarily composed of *Lycium shawii*) (Fig. 1), sandy and rocky deserts (Fig. 2), and date palm oases (Fig. 3) alternate with each other.

The local climate is predominantly Mediterranean in character. Most rain falls within a few days between November and January. In vegetated areas, less than 100 mm of rain falls annually, while in the Saharan zones, it is less than 25 mm. Temperature reaches its maximum in July and August with a mean of about 30-33°C, while the average temperature is 10°C in January. These averages obscure the fact that temperatures can vary tremendously throughout the day. In many areas of the Sahara, 200 consecutive rainless days have been recorded annually, and the world's greatest drought has been documented with an annual rainfall of only 10 mm. The arid climate is exacerbated by the ghibli, a hot, dry wind that blows across the country from the south several times a year. Typically, a brief lull precedes the full force of the ghibli, which arrives carrying vast amounts of sand and dust, turning the sky red and reducing visibility to less than 18 meters. The wind's heat is intensified by the rapid decrease in relative humidity, which can drop dramatically within hours.

Material and methods

Predominantly in January and February 2014, we surveyed the area's reptile, marine mollusc, and insect fauna. To date, two articles have been published from these surveys (HÉRA & HARIS 2015 and SCHWENNINGER 2023). The capture of animals was conducted



Fig. 1: Semi-desert shrub vegetation; 6 out of the 7 observed species occur here



Fig. 2: Limestone rocky shoreline, a preferred habitat of *Acanthodactylus scutellatus*



Fig. 3: Date palm oasis in Brega

gently and only for a few minutes, after which all animals were released. We created photo documentation of the animals and placed in the digital photo collection of the Rippl-Rónai Museum (Kaposvár, Hungary).

The studies did not extend to recording the sizes of the animals, nor did they include determining their sex distribution or health status. We recorded their species affiliation, observation location, date, and number of individuals. Our fieldwork predominantly, but not exclusively, took place within the area defined by the following coordinates: 30°25'10.87"N, 19°37'23.47"E and 30°24'23.56"N, 19°39'32.55"E

For species identification, we used the following works: SCHLEICH et al. (1996), "*Amphibians and Reptiles of North Africa: Biology, Systematics, Field Guide*," and UETZ et al. (2022), "*The Reptile Database*." For the identification of potential centipede predators, we consulted the monograph by AKKARI et al. (2008). For examining the distribution of species, we based our work on BAUER et al. (2017), "*Atlas of the Reptiles of Libya*."

Results and discussion

Of Libya's 66 terrestrial reptile species, 25 species from the aforementioned five families occur in the province of Cyrenaica. Of these 25 species, we have successfully identified 7 species (28%) in and around the town of Marsa El Brega.

Chamaeleonidae

Chamaeleo chamaeleon (Linnaeus, 1758) (Common chameleon)

One specimen was observed around 30°25'20.10"N and 19°38'24.16"E 19.03.2013, One specimen was observed at the same location on 21.03.2013.

Comment: Sporadic in Brega, only two specimens were observed: one larger (photographed) and one smaller, among the ground vegetation. Its northernmost point of distribution is the southern coast of Spain, extending from the North African shores to Israel on the other side of the Mediterranean. In Libya, it is restricted to the coastal area, or inland, it occurs only in oases.

Gekkonidae

Tropicolotes tripolitanus Peters, 1880 (Tripoli gecko)

Three specimens were observed around 30°25'21.88"N and 19°38'24.00"E on 04. 01. 2014 (Fig. 4)

Two specimens were observed at the same location on 05. 01. 2014

Two specimens were observed at the same location on 11. 01. 2012

Comment: This small gecko species is known from Western Sahara and Northern Africa. It probably occurs everywhere in Libya, except in the very southern regions of Cyrenaica. On January 4th, while collecting in the thorny shrub association behind our camp, we overturned a metal food tray, probably abandoned during the civil war, and found several specimens underneath it, along with their potential centipede predator, *Scolopendra canidens* Newport, 1844 (Fig. 5). This centipede, with pale crossbands (resembling *S. cingulata*; however, these crossbands are very pale), is a frequent color variation of *S. canidens*. *Tropicolotes tripolitanus* is frequent in Marsa El Brega.



Fig. 4: *Tropicolotes tripolitanus* Peters, 1880 (Tripoli gecko) closeup



Fig. 5: *Scolopendra canidens* Newport, 1844 potential presator of Tripoli gecko

Phyllodactylidae***Tarentola fascicularis* (Daudin, 1802) (Moorish gecko)**

One specimen was observed around 30°25'21.88"N and 19°38'24.00"E on 11. 01. 2014.

One specimen was observed around 30°24'46.02"N and 19°36'43.81"E on 17. 02. 2014

Comment: In Libya, this species is mostly found in the northern region, with scattered records in the interior parts of the country. It is a Northern African species known from southern Tunisia to north-western Sinai. It is sporadic in Marsa El Brega. This species is frequently identified as *Tarentola mauritanica* (Linnaeus, 1758). According to BAUER et al. (2017), *T. fascicularis* and *T. mauritanica* form a species complex. Morphometric and karyotypic data distinguish the two species, and in North Africa, *T. fascicularis* is the typical species.



Fig. 6: *Tarentola fascicularis* (Daudin, 1802) (Moorish gecko) in vertical position

Lacertidae***Acanthodactylus scutellatus* (Audouin, 1827) (Nidua fringe-fingered lizard)**

Four specimens were observed around 30°25'36.33"N and 19°38'13.02"E on 05. 01. 2014 (Fig. 7)

One specimen was observed around 30°25'21.88"N and 19°38'24.00"E on 14. 01. 2014

Three specimens were observed at the same location on 15. 01. 2014

Comment: Distributed across northern Africa and the Sahara, the species is prevalent throughout Libya. It was observed as the most frequent species in Marsa El Brega.



Fig. 7: *Acanthodactylus scutellatus* (Audouin, 1827) (*Nidua* fringe-fingered lizard)

Ophisops occidentalis (Boulenger, 1887) (Western snake-eyed lizard)

One specimen was observed around 30°24'20.84"N and 19°36'18.50"E on 22. 01. 2014

Comment: It is found in Algeria, Egypt, Libya, Morocco, and Tunisia. In Libya, it is restricted to the costal area. Frequent species, but only one specimen was observed.

Scincidae

Scincus scincus (Linnaeus, 1758) (Sandfish skink)

1 carcas was observed around 30°25'17.66"N and 19°38'24.57"E on 19. 01. 2014

Comment: One carcass was observed. The species is widely distributed in northern Africa and the Sahara belt. It is sporadic in Libya, occurring in all parts of the country. Since it was a carcass, it wasn't checked for subspecific rank, though from the investigated area (Brega Bay), the nomotypical form was reported

Chalcides ocellatus (Forskal, 1775) (Ocellated skink)

One juvenile specimen was observed around 30°25'23.16"N and 19°38'28.03"E on 08. 01. 2014 (Fig. 8)

One adult specimen was observed around 30°25'0.44"N and 19°38'1.24"E on 23. 01. 2014

Comment: I found them in completely different habitats. The tiny animal burrowed in the sand and almost swam under it. The larger animal, on the other hand, was found not in the sand, but in a date palm oasis when I overturned a fallen palm trunk. Widely dis-



Fig. 8: Jung *Chalcides ocellatus* (Forskal, 1775) (Ocellated skink) is resting in the sand

tributed in Libya, although in the inner side of the country, it is mostly restricted to oases. It is popular decorative terrarium animal, in this way as a non-native species, has become established in both Arizona (USA) and Sri Lanka.

Endangering factors

The area hold valuable herpetofauna. We observed the following endangering factors:

The main direct threat factors are stray animals, such as dogs. However, domestic cats also cause significant damage to wildlife. Since this area is an industrial zone, with the presence of fertilizer production and oil refining, it is essential to pay special attention to preventing accidental chemical spills, chemical accidents, or improper chemical storage, and to avoid these situations. In these areas, which naturally have a dry climate, climate change is causing significant damage. Since the Mediterranean Sea washes all the litter towards the southern coast, the coastline was extremely littered. The proportion of discarded plastic bottles in the litter was particularly high.

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