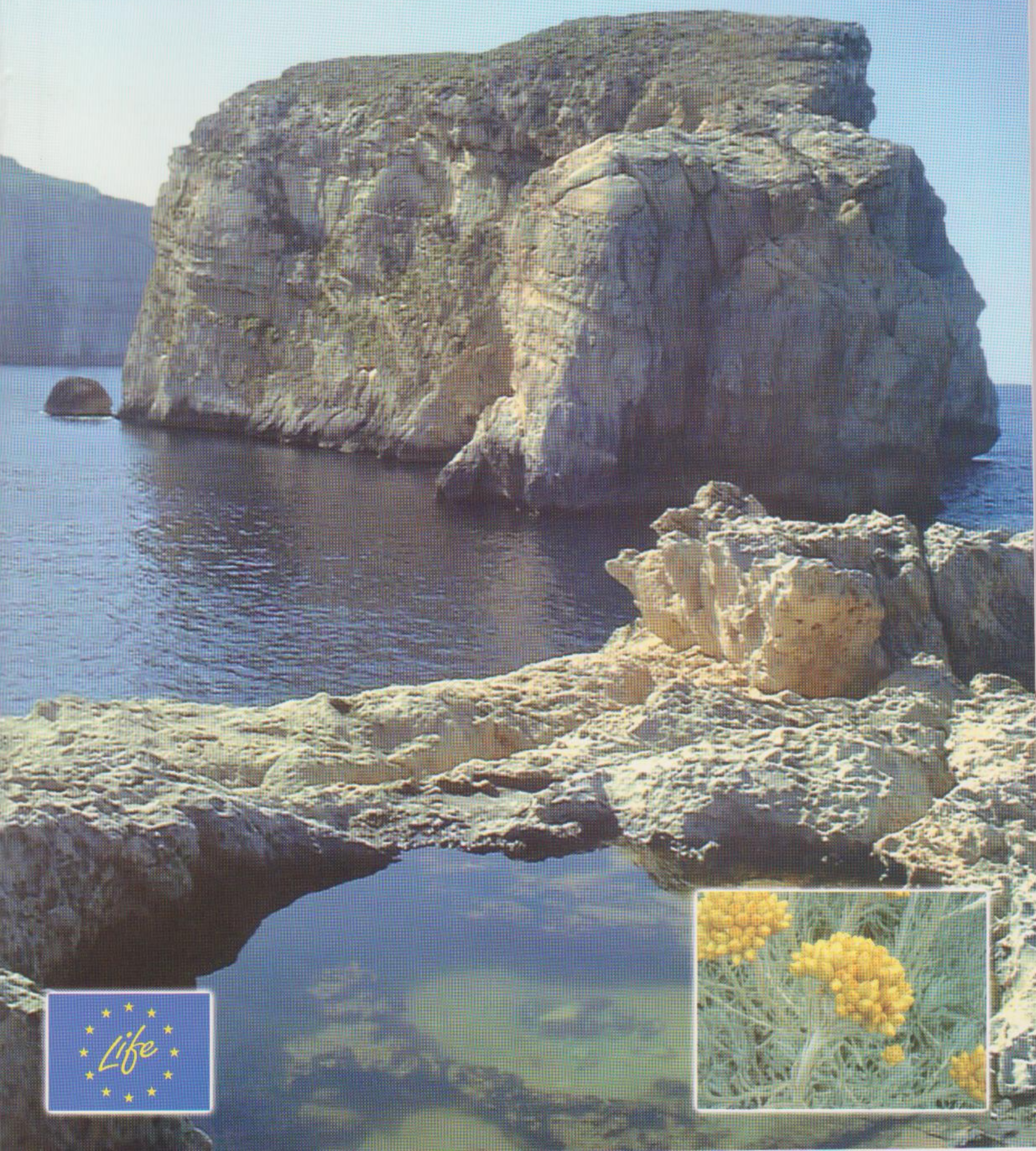


# DWEJRA HERITAGE PARK GOZO



# LIZARDS AT ID-DWEJRA

## Arnold Sciberras

Describing Dwejra is like describing a unique face of an individual because of its amazing nature sculptured geomorphological forms. It also holds unique species of flora such as the Maltese cliff orache (*Cremnophyton lanfrancoi*) which in this area is restricted only to Fungus Rock, Hyoseris (*Hyoseris frutescens*), Maltese Stocks (*Matthiola incana melitensis*) and the Maltese Everlasting (*Helichrysum melitense*) which is endemic to that area and some very rare plants such as the Large Rock Spurge (*Euphorbia characias*) (Jeffrey Sciberras, personal communication). The area also hosts a wide range of fauna species including one of the nesting sites of Cory's Shearwater (*Calonectris diomedea*) and the remarkable population of Fungus Rock lizard.



The large Rock Spurge

The herpetofauna of the Maltese Islands consists of only sixteen species, of which five are marine turtles. Two of the latter have been recorded once while the other three can be truly listed as Maltese species. The terrestrial reptile species consists of four species from the family Colubridae (snakes) (two probably introduced in the First World War with cargo ships), two species from the family Gekkonidae

(geckos), one species from the family Chamaeleontidae (chameleon) introduced between the years 1846-1865 and which has subsequently become established and has spread, one species from the family Scincidae (skinks) and one species from the family Lacertidae (lizard) four of which are endemic and are known here as subspecies. Two species from the class

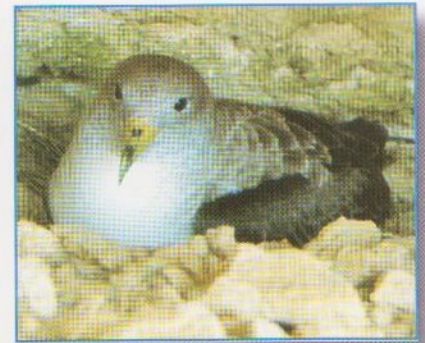


Fungus Rock Lizard

Amphibia are also known to occur here: a native frog from the family of Discoglossidae and an introduced species from the family of Ranidae introduced in the early 1990's and localised in some areas.

The Maltese Wall Lizard, *Podarcis filfolensis*, belongs to the genus *Podarcis* that consists of at least 18 species with over 195 subspecies. *P. filfolensis* is endemic to the Maltese Islands and the Pelagic Islands (Lampione and Linosa) where a fifth known subspecies occurs. *P. filfolensis* is found on all the islands and islets of the Maltese archipelago including:

Filfla Island or Filfla Rock (Filfla), Fungus Rock or General's Rock (Ġebbla tal-General), Selmunett or St. Paul's Island (Il-Gżira ta' San



Cory's Shearwater

Pawl), Malta, Manoel Island (Il-Gżira Manoel), Qawra Point or Ta' Fra Ben Area (Il-Ponta jew Ras il-Qawra), Gozo (Għawdex), Comino (Kemmuna), Cominotto (Kemmunett), Large Blue Lagoon Rock (Il-Haġra ta' Bejn il-Kmiemen il-Kbira), Small Blue Lagoon Rock (Il-Haġra ta' Bejn il-Kmiemen iż-Żgħira), Halfa Rock (Il-Ġebbla tal-Halfa), and Tač-Ċawl Rock (Il-Ġebbla tač-Ċawl). It is also found on the Pelagic Islands, i.e. Linosa and Lampione.

At present, five subspecies of *P. filfolensis* are known to occur and these were separated only on morphological grounds. These are listed below:

- Podarcis filfolensis filfolensis* (Bedriaga, 1876)
- Podarcis filfolensis generalensis* (Gulia, 1914)
- Podarcis filfolensis kieselbachi* (Fejervary, 1924)



A view of Fungus Rock

*Podarcis filfolensis laurentii-muelleri* (Fejervary, 1924)

*Podarcis filfolensis maltensis* (Mertens, 1921)

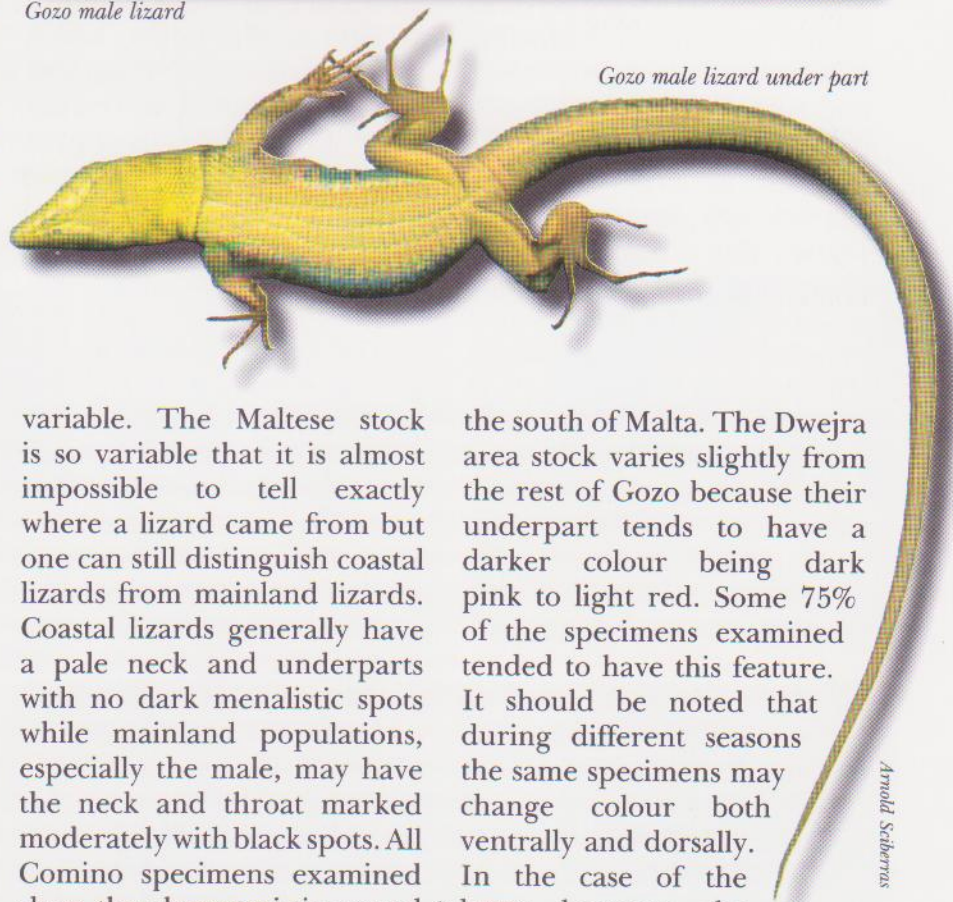
*P. filfolensis filfolensis* is confined to Filfla Island and is the largest of the subspecies with males measuring up to 9cm, 30cm including tail). *P. filfolensis generalensis*, up to 8cm long excluding tail, is found only on Fungus Rock. *P. filfolensis kieselbachi*, measuring up to 6cm excluding the tail, is confined on Selmunett island. *P. filfolensis laurentiimuelleri* is found on the Pelagic islands of Lampione and Linosa, with length up to 6cm excluding tail. *P. filfolensis maltensis* is the most widespread, being found in all the localities of the Maltese archipelago mentioned above and with length not exceeding 7-7.5cm excluding tail.

The Dwejra area holds most of the species mentioned above including two distinct populations of *P. filfolensis*, i.e. the *P. filfolensis maltensis* and the *P. filfolensis generalensis*. The *P. filfolensis maltensis* present at Dwejra is part of the whole lizard population in Gozo but since these generally vary also a little morphologically from one locality to another, on closer examination one can also detect minute differences. The population of Gozo is still numerous being found almost in every corner of the island while in Malta lizards have rapidly decreased over the years through human activity and only recently in some areas has there been a slight increase in numbers. Between the three main islands one can notice a distinct difference in the populations even though the species is highly



Arnold Scherrens

Gozo male lizard



Gozo male lizard under part

Arnold Scherrens

variable. The Maltese stock is so variable that it is almost impossible to tell exactly where a lizard came from but one can still distinguish coastal lizards from mainland lizards. Coastal lizards generally have a pale neck and underparts with no dark melanistic spots while mainland populations, especially the male, may have the neck and throat marked moderately with black spots. All Comino specimens examined show the characteristic coastal feature in that they contain no black spots ventrally.

The population of Gozo also varies distinctly so much so that 90% of the specimens examined contained a light pinkish ventral while only a handful of these were found in

the south of Malta. The Dwejra area stock varies slightly from the rest of Gozo because their underpart tends to have a darker colour being dark pink to light red. Some 75% of the specimens examined tended to have this feature. It should be noted that during different seasons the same specimens may change colour both ventrally and dorsally. In the case of the latter, however, the colour can change from green to brown but show all year round the dark melanistic pattern.

Confined to Fungus Rock, the endemic population of *P. filfolensis generalensis* is a spectacular creature to observe.



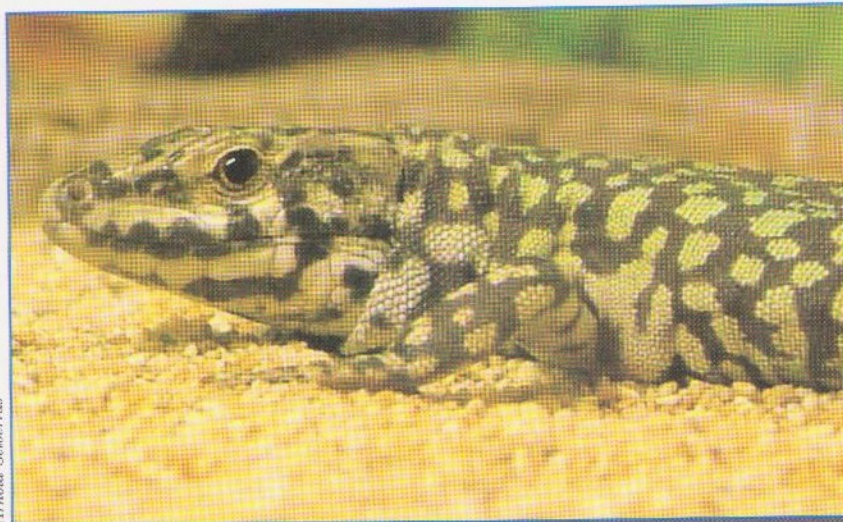
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*Dwejra male lizard*

From a first glance seeing these lizards running and crossing from one shrub to the other, one notices the dark reddish colour pigmentation in the side and underpart that is a characteristic feature of these lizards. This is obviously more prominent in the breeding season and in the male gender. Females tend to be smaller in size with a less robust head and with fewer black spot markings on both ventral and dorsal regions when compared to the male; however the red colour on the ventral is usually as strong as that of the male whereas generally in other populations

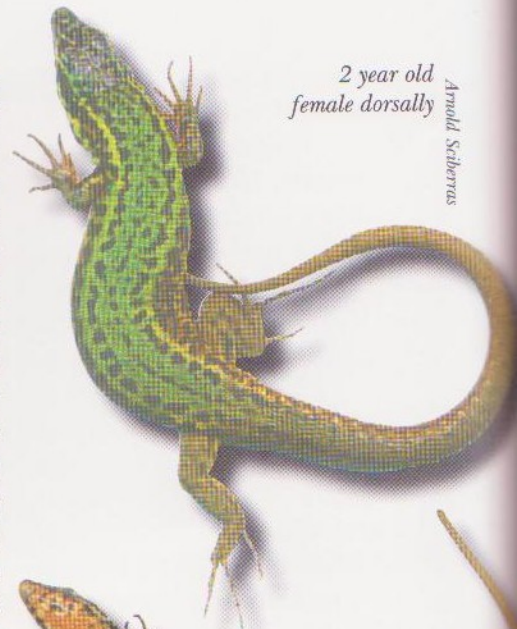
the colours of the male are more conspicuous than that of the female or juvenile. Non-breeding specimens generally have less bright colours and just before the breeding season the ventral part turns a dark pinkish colour, the same colour of breeding individuals in Gozo. As they grow older the black spots darken and the colour of these animals shows up more distinctively making them more beautiful than ever. The male's black markings on the skull from the internasal to parietals (skull plates/scales) by time continue to expand until the head (over four years) is almost entirely dark brown to black while yellowish to light green upper labials and submaxillaries (cheeks/lip scales) develop at an earlier stage in life. This is also a common characteristic feature in the population of Cominotto and small islets but with other variable coloured cheeks.

The dorsal characteristic pattern of the male *P. filfolensis generalensis* is similar to *P. filfolensis kieselbachi* but with a thicker black marking net-shaped pattern. In the mating season the inner scale is of bright green while in the non-breeding season this tends



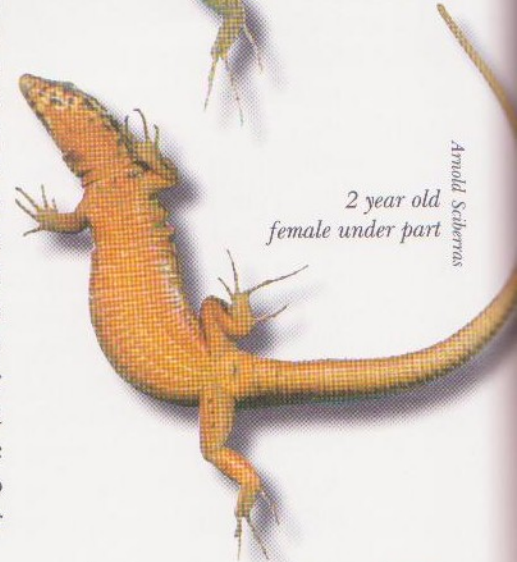
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*3 year old male portrait*



2 year old female dorsally

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2 year old female under part

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to be a pale reddish colour. Females of this population are typically similar to those of the mainland but also with thicker black markings.

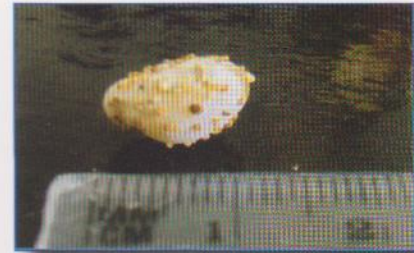
Sexual maturity in these lizards is probably reached at the same age as the mainland population i.e. about 2.5 – 3 years, depending on the individual. Sexually mature males will start to show the marking in the neck and some green to blue borders on the underpart sides. The older they get the more this border will darken in the blue colour and makes a uniform line. Some females may show this border but this never has the intensive colours that males from the same population have. One can also estimate age in lizards from this border for several populations. Lizards from mainland populations

generally show breeding colours between February/March and June/July and then colours tend to dim. In this particular population breeding colours generally last till the end of September. This could indicate that breeding may be a bit later than the rest of the populations since also juveniles in September to November are still much younger than those of the mainland. This could be a micro-environmental factor since for much of the time this rock is exposed to heavy weather; in fact in most of the visits we encountered rough winds. This is possible because of the location of the rock and the habitat in which the lizards are situated.

After all the episodes a pair of lizards have to go through (such as fighting for territory,

finding a partner and mate), and after 48-53 days of the gestation period the female will start to search for a suitable nesting site. Eggs are generally laid in batches of two, rarely three, and are placed under weathered stones in a cup-shaped nest formed by the hind legs of the female. The colour of the eggs is the same as that of the mainland lizards though some specimens, e.g. those of *P. filfolensis generalensis*, may have a tinge of light pink and in size might be slightly larger of those of the mainland.

The main diet of this population consists of all forms of migrating insects, such as the Painted Lady, but more than 30% consists of ants species while the main prey is the Blue Winged Grasshopper

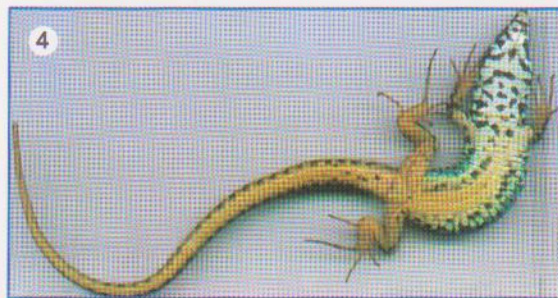
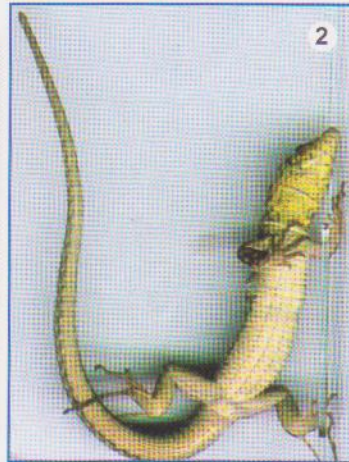


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Egg of *P. filfolensis generalensis* covered with soil particles

(*Sphingonotus coeruleans*) which is a resident on the rock. When possible larvae of insects (possibly those of beetles) are dug out from *C. diomedea* faeces.

Various folk beliefs have arisen about the Maltese lizard. The most well known is that the lizard of Filfla has the unique feature of having two tails. This is not strictly correct and there are many possible explanations of this phenomenon. The oldest saying is that about the Fungus



- 1 1 year old juvenile.
- 2 1 year old juvenile under part.
- 3 2 year old male from side.
- 4 3 year old male under part.
- 5 Over 4 years old male under part.
- 6 Female portrait.

Photos by Arnold Sciberras



Arnold Sciberras

*Malta Fungus*

Rock lizard, being recorded also in writing by Buonamico in the 1670's. The saying goes that this lizard is of an enormous size and lives by drinking the Malta fungus, *Cynomorium coccineum* (of which the largest population of the species in our islands is on Fungus Rock). Another assertion is that these lizards have a red underpart because they feed only on this plant.

It is true that at first sight these lizards seem to be feeding on the fungus but from personal observation what is really happening is that this plant attracts a lot of small insects and the lizards feed on these. It is probable that while catching insects these lizards are consuming small parts of the plant in the same way as often happens with mainland lizards that while catching

insects from flowers may tend also to consume pollen. As for the enormous size mentioned above this is simply incorrect because this stock varies from the mainland by only a few centimetres. There is also some saying that this stock may have two heads which is generally confused with the saying of the two tails of Filfla lizards.

Whether one considers the various races sufficiently distinct as to warrant separate names or not is a matter of opinion but certainly these names are useful labels to distinguish the different populations. They also have a historical value so perhaps they should be retained, at least until the various races have been sufficiently studied to decide one way or another. These populations are of great scientific interest since they throw light on one process of speciation (the formation of new species) – in our case speciation through geographical isolation – as well as on the origins of the Maltese fauna. (Schembri 1986)

So at present the sub-specific status of all the named populations is still uncertain, whereas there are micro-insular populations that, using the same criteria as have been applied to named island populations of *Podarcis filfolensis* as distinct species, should also be recognised as subspecies. Application of modern molecular techniques of genetic analysis should provide information on the degree of genetic differentiation between the various populations as well as the degree of genetic exchange between them. Such studies are in progress by a group from the Department of Biology of the University of Malta and from the Institut für Biochemie, Justus-Liebig-

Universität, Giessen, Germany.  
(Sciberras & Schembri, 2003)

The population of this rock is still stable and quite numerous. Specimens being rather shy makes it more difficult to have a precise idea of the size of the population. Despite this, a border can be proposed to show where most of the population is located on the rock. One of the features for this restriction is due to weather and within this border is the cosiest and most food abundant area of the rock (see aerial view of Fungus Rock, below). The local fauna of this rock is very vulnerable and may one day be seriously endangered because of the black rat (*Rattus rattus*) present on the island. This alien species devours anything that is edible including local flora such as the important *C.coccineum* and unless the species is controlled we might end up in a few years with the same problem there is on Selmunett Island's flora and fauna including the endemic population of *P. filfolensis kieselbachi*.

The Maltese archipelago gives the impression of being over populated and over built



The top of Fungus Rock

Arnold Sciberras

islands (which they are) but the remaining natural habitat is so rich that our visitors are amazed by its biodiversity and some regard our island as a botanical paradise while others are equally impressed by our breath-taking landscape. We should protect our unique natural heritage and the Maltese wall lizard is one of the best examples one can think of. This is of no use if these species are listed as protected and their habitats such as Dwejra are allowed to be destroyed by development.

**Note:** All photo material and handling of the lizards were done specifically in the period

of the permit issued from MEPA in 2003 for handling *Podarcis filfolensis* for strictly scientific purposes.

#### References

- Borg, J.J. & Sultana, J. (2003) The presence of the black rat *Rattus rattus* (Maltese Islands) in: *The Central Mediterranean Naturalist*, Vol 4, pt 1 pg.105-106.
- Schembri, P.J. (1986) The Maltese Wall Lizard in: *Civilization*, 27, pp 741-3.
- Sciberras, A. & Schembri P.J. (2003) Observations on the population of the Maltese Wall Lizard on Il-Gzejjer ta' Selmunett (*Podarcis filfolensis kieselbachi*). Unpublished MEPA Report.
- Sciberras, A. (2005) Observation on the endangered population of the Maltese Wall Lizard of Selmunett island (*P.filfolensis kieselbachi*). Unpublished work, presented to the Chamber of Young Scientists, 4-10 April, and to the Belgian Science Expo on 26 April to 1 May.
- Sciberras, A. (2006) Ajdut, Qlajjiet u Folklor fuq il-Gremxula ta' Malta, in: *L-Imnara*. Vol.1, pt.8-30, pg.108-112.



Aerial view of fungus rock showing the location where most *P.f generalensis* population is located.

Malta Tourism Authority

