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Spring 2017 - Herpetological trip to Ibiza (Spain)

with introduction of a new population of *Podarcis pityusensis*

MARTEN VAN DEN BERG and MIKE ZAWADZKI, May 2017.

Summary

This is already our seventh report in a series on our whereabouts while collecting data for a future revision of the present subspecific order of the endemic Balearic sisterspecies *Podarcis lilfordi* (GÜNTHER, 1874) and *Podarcis pityusensis* (BOSCA, 1883) (VAN DEN BERG & ZAWADZKI 2011 ; VAN DEN BERG et al. 2013 ; VAN DEN BERG et al. 2014a ; VAN DEN BERG et al. 2014b ; VAN DEN BERG et al. 2015 ; VAN DEN BERG et al. 2016). During this trip from the 8th until the 21st of April 2017, we were able to collect data at some mainland Ibiza locations, as well as on the following adjacent islands: Caragoler, Escull d'en Terra, Negra Norte, Vedranell, Conillera and Ses Margalides. We continue with the ventral coloration as a possible determining key as introduced in our 2014 trip report (VAN DEN BERG et al. 2014b). Images of the anal shields are presented of each lizard for purposes of illustration. Also we report on a new approach of assessing small islands, which have been considered without lizards in the past, or haven't been considered at all, for the possibility of hosting a lizard population. Investigating these "uninhabited" small islands resulted in one new to describe population of *Podarcis pityusensis*, and a proven occurrence of a lizard population on another small island.

Introduction

High on our priority list this year were some of the Es Freus islands that we have not visited yet as well as Escull Vermell and Ses Margalides. Moreover we had the intention to assess some of the islands that to our opinion have only been investigated poorly and gather additional informative images on location and possible habitat on other islands.

Funnily enough, we did not really consider visiting the island of Es Vaixell this time, firstly because this island is quite difficult to climb and that would require proper preparation, secondly, because a team of VALENTÍN PÉREZ-MELLADO has already been investigating this population since 2013, and he had already released some important data regarding our interests in the local newspaper (ROMERO 2014).

Nonetheless we were quite stunned to learn that Ex Vaixell stayed off limits to us, just because another research team was studying the lizard population on this rocky island, and interference was apparently not considered conducive. Although that meant no big deal to us, we had no intentions to start with, it remains remarkable. We thought that science is based on reproductiveness of facts and data, and in order to retain a research item exclusively for yourself, this seems to us to be in conflict with standard scientific procedures.



Image 1. Ex Vaixell; off limits.



Image 2. Es Vedrà in the background; practical impossible.

Another story about an inaccessible island is that of Es Vedrà, but that is even beyond the authority of what we consider the proper authorities, and is now in the hand of the Spanish legal system. It seems that even the staff of the park nowadays needs permission of a local judge to enter Es Vedrà as consequence of the previous eradication program of goats on the island. We hope this problem will be resolved quickly, and demonstrates that what we consider as normal practice is not automatically the same in other parts of the European Union.

The last peculiar case of government policy, which might have influenced our trip in a negative way, was the changed policy towards the people who rent kayaks. During her diner visit at our house, MARTINA GREEF told us about the problems she encountered last year. One of the things that had changed negatively, was the limited period of her license to rent kayaks. Now she only was able to perform her business from May until October. Fortunately for us there are no rules for lending things to friends for free, so she gave us the opportunity to borrow two kayaks for two days including a suitable transportation tool. That saved our intentions to visit the missing Es Freus islands, and at least gave MIKE his personal moment of glory (see image 3).

Image 3.

Our additional transport to the missing Es Freus islands. The complete set available for two days by courtesy of MARTINA GREEF.



Enough said about negative things, let's talk about what was positive, because that predominated this trip. At first the weather conditions, the best ever! Two weeks with sunny, reasonable warm and not too much wind conditions, like the better summer days in northern Europe. Secondly we replaced MICHAEL by our two personal domestic assistants, GITTA and ANGELA, which led to a huge improvement in secondary working conditions. In reality, MICHAEL KRONIGER could not experience this trip due to busy circumstances at his professional job, but we are convinced that, when seeing the results, he will make next time another consideration.



Image 4. Our assistants, during one of their rare breaks.



Image 5. GITTA preparing breakfast in the garden.



Image 6. DJI Phantom 4 test flight in the backyard of our Ibiza house in Can Pilot.

Another thing that worked out positive was our decision to try to use a drone for assessing some of the islands which were considered without lizards. Entering an island is often not easy, and the fuss of arranging the proper transportation, getting to the island and exploring it, is quite time consuming. We thought a drone might streamline the process and save us lots of time, and it did. We did some test in the backyard of our Ibiza house with the local lizard population, and after a while of hovering in one place, the lizards did not seem to pay much attention to the noisy thing that was observing them

from a distance of two meters. Also the effect on the birds we encountered on the islands that were investigated by the drone, almost exclusively *Larus michahellis*, was minimal. Only approaching their nests did make them go away, and sometimes a weak attack was performed to scare the drone. We are convinced that our personal presence on the islands is much more disturbing to them, and experienced, at the moment when hatchlings were around, even much more serious attacks by the gulls, receiving shit showers or even some punches on our heads.



Image 7. Some of the tested lizards, inside their apartments.

An extra goal, in behalf of EVA MORAGUES BOTEY, the technician in charge of monitoring the *Euphorbia margalidiana* population on Ses Margalides and Murada, was flying the drone above both islands in a more or less structured pattern, to assess the status of this endemic plant. The results of these flights are demonstrating that a drone could be a valuable tool, facilitating such assessment, which makes it much easier to perform a survey on a regular basis. By programming flight paths this could also be done in a structured way.

Results

A good number of small islands that are supposed to be without a lizard population of its own were visited by our drone, giving in most cases a good picture of the present plant species and coverage. The images on this page are just an example of two of these islands, however, the drone flew much closer, showing more details in the captured videos.

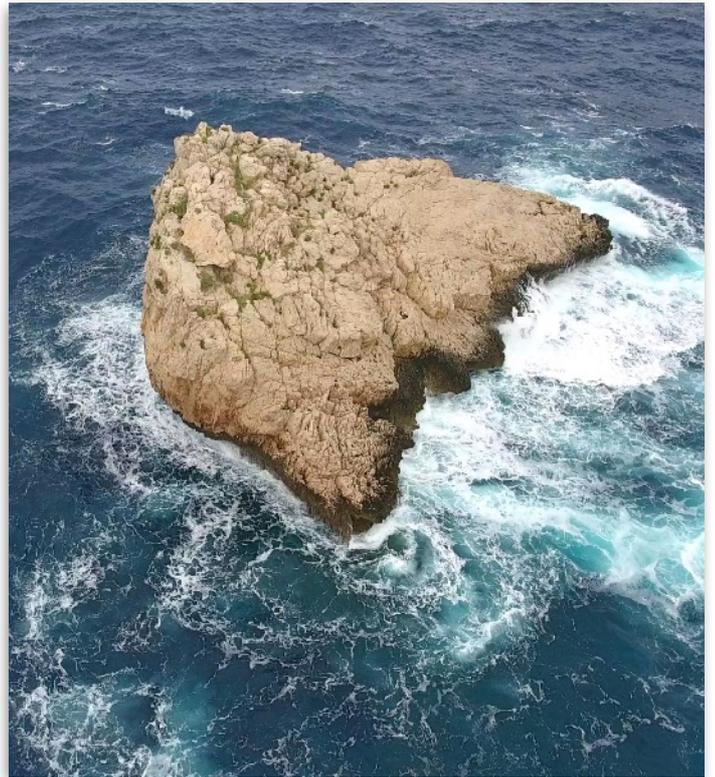


Image 8. Entrepnyes, flown from Urbanizacion Isla Blanca.

Image 9. Small island in front of Ses Margalides, flown from Restaurante Las Puertas Del Cielo.





Image 10. Male on Espartar.



Image 12. Male on Espartar.

In one case we could even identify a running lizard on the video, proving that island has its own lizard population, and maybe of an unexpected coloration. Of course this happened on the end of our trip, and the remaining days provided us a little more wind from the wrong direction, therefore we were unable to climb the island because of the waves. Investigating this new population the old fashioned way, had to be postponed.

As you can see in table 1, the result of our usual way of collecting data is not comparable to previous years, partly because there was not much more to collect, mostly because there was not enough time on the islands. The day we should have been visiting Escull Vermell, which was once again impossible to climb because of the waves, we diverged to Espartar where we decided not to collect data, and just observe the lizard population during the 90 minutes left to us. Actually this felt like being on holidays on this island; a nice different experience though.



Image 11. Foraging female on Espartar.



Image 13. Male on Espartar.



Image 14. Male on Espartar.

Date	Location	Coordinates	"subspecies"	specimens	DNA	
2017-04-08	Ibiza - Can Pilot	38.982131 1.371703	<i>P. p. pityusensis</i>	7,0,0	7	BZ
2017-04-09	Ibiza - Punta Portes	38.499040 1.243490	<i>P. p. pityusensis</i>	8,3,0	11	BZ
2017-04-09	Ibiza - Citadel	38.906129 1.435626	<i>P. p. pityusensis</i>	10,7,0	17	BZ
2017-04-11	Caragoler	39.011180 1.293330	<i>P. p. caragolensis</i>	4,2,0	6	BZ
2017-04-11	Escull d'en Terra	38.498290 1.243410	Escull d'en Terra population	1,1,0	2	BZ
2017-04-12	Ibiza - Can Pilot	38.982131 1.371703	<i>P. p. pityusensis</i>	0,0,1	0	BZ
2017-04-12	Negra Norte	38.815469 1.403997	<i>P. p. negrae</i>	1,0,0	1	Z
2017-04-12	Escull d'en Terra	38.498290 1.243410	Escull d'en Terra population	1,1,0	2	B
2017-04-13	Vedranell	38.868967 1.209569	<i>P. p. vedrae</i>	1,1,0	0	BZ
2017-04-15	Conillera	38.591290 1.126250	<i>P. p. carlkochi</i>	3,2,0	5	BZ
2017-04-18	Ses Margalides	39.049819 1.315141	<i>P. p. hedwigkammerae</i>	4,5,0	9	BZ

Table 1. Data collected on Ibiza and surrounding islands during spring 2017 (under permits CEP 02/2017 and 12/2017), by B = MARTEN VAN DEN BERG and Z = MIKE ZAWADZKI.



Saturday, the 8th of April 2017* - Ibiza: **Can Pilot** (E17)

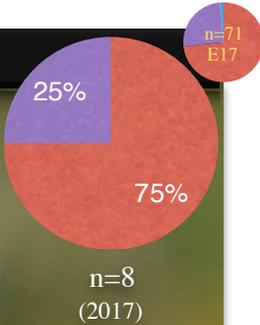


Image 15. Male at Can Pilot.



Image 16. Male at Can Pilot.

On this page we list the 7,0,0 specimens caught on Saturday the 8th of April, and the juvenile from Wednesday the 12th of April, found hiding in our kitchen. There is nothing extraordinary to be told about these lizards, also the color ratio is the same as in previous years. However, their presence seems to have decreased this year. Maybe it became to tidy around the house, or maybe the introduced snakes are showing their influence.



Image 17. Flying in the dark.

Sunday, the 9th of April 2017 - Ibiza: **Punta Portes** (E10)

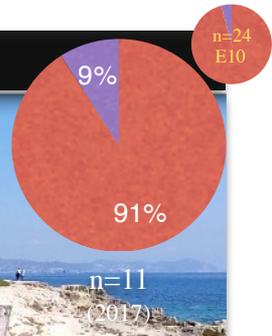


Image 18. Punta Portes.

Sunday morning we took the stroll to Punta Portes, mainly to look at the conditions around the northern Es Freus islands we still had to visit. These conditions looked promising, and the weather report promised equal conditions in the coming days. Just because we were there, we enhanced our database with 8,3,0 specimens.

Image 19.
Portraits of some of the Punta Portes lizards.

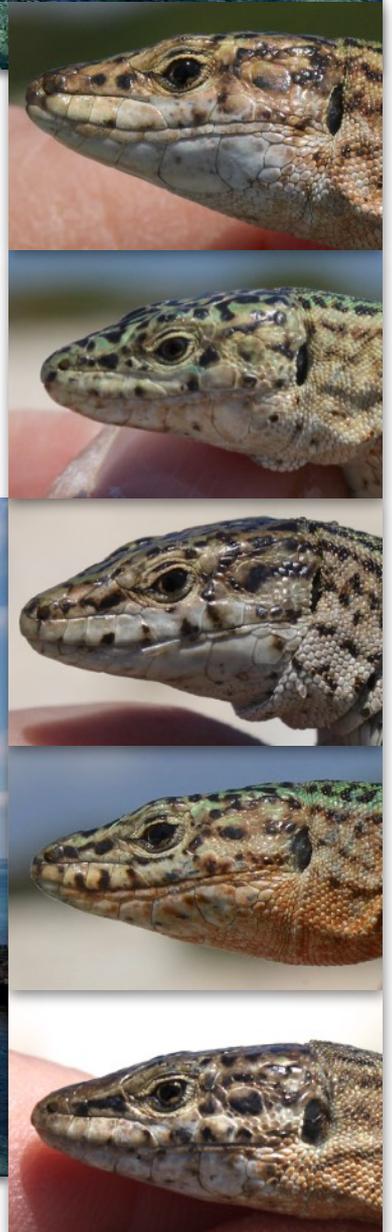


Image 20. The northern Es Freus islands seen from Punta Portes.

Monday, the 10th of April 2017 - Ibiza: **Citadel** (E11)

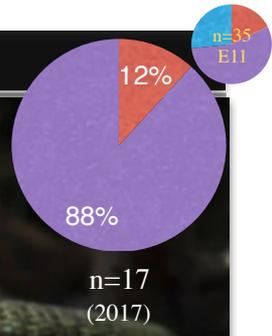


Image 19. Male lizard at the walls of the old city.

After an early morning visit to Calle de Murcia, where MARTEN met MARIANA VIÑAS TORRES who relayed the program to the Es Vedra park islands scheduled by VIRGINIA PICORELLI SASTRE, we went to one of the mainland Ibiza locations where the lizards seem to be more colorful; the walls of the old city. The traps were working like always on this spot, and we could add 10,7,0 records to our database. A pretty good result, however the working conditions were not optimal. It was warm and we had no shelter from the sun, but on the other hand we were perfectly sheltered from wind, resulting in sweaty conditions. It was also quite busy with passing tourists, therefore, time was lost with education for those interested.



Image 20. Sampling location.



Image 21. Close friends.

Ibiza: Citadel



Image 22. Colorful male.



Image 23. Portraits.



Image 24. View on the Malvin islands and Esponja.



Image 25. Habitat on Caragoler island, with view on Punta Portes.

Tuesday morning we went to the beach of Es Cavallet, where we started our comfortable kayak trip to Caragoler island, which was a first time experience for us. Caragoler has a well-varied plant cover for its small size, which provides the habitat to a small lizard population, resembling the lizards

from the largest of the North Es Freus islands: Penjats island. We stayed from 10:45 until 14:30 on the island, and were able to catch 4,2,0 lizards. Not that many for the available hours. Nevertheless we got a good impression of this population, which to our opinion is not much bigger as 20-30 specimens.

Image 26. Male on Caragoler island.



Caragoler



Image 27. The small satellite island next to Caragoler, explored by MIKE.

The small satellite island, also one of MIKE's long cherished wishes to visit, was explored as well, but as expected no lizards were found.

Image 28. Another male on Caragoler island.



Image 29. Portraits of the sampled lizards.

Tuesday and Wednesday, 11-12 April 2017 - Escull d'en Terra (EPP)

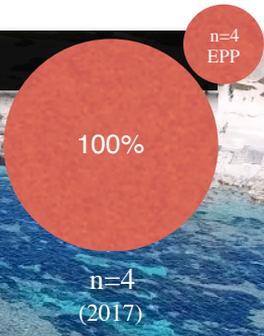


Image 30. Small lizard habitat on Escull d'en Terra.

Second stop on Monday was a first assessment of Escull d'en Terra, which was previously considered without lizards by MARTINEZ-RICA & CIRER (1982), MAYOL (2004) and SALVADOR (1986,

2009). Although the plant cover seemed promising on the drone video we took on Sunday the 9th of April, no lizards were visible. While entering the island we discussed the chances of finding some



Image 31. Female on Escull d'en Terra.



Image 33. Another male on Escull d'en Terra.



Image 32. Male on Escull d'en Terra.



Image 34. The same female on Escull d'en Terra.

Escull d'en Terra



Image 35. Part of the habitat on Escull d'en Terra.

lizards, and we agreed that such island should have its own small population. It took a while before we could confirm that fact. It was already a little late (17:00) and the traps were not effective, so we caught a male and a female specimen by hand, for sampling. The next day MARTEN reached the island a little before MIKE did, because his kayak run out of fuel, and could not complete the planned journey to Illa Negra Norte. After putting out the traps MARTEN decided to get out of the wind to become a little dry and warm again by laying down next to one of the seven samphire bushes present on the island. It was the beginning of a little siesta, which ended by an inquiry into his wellbeing by the male we caught the day before. Meanwhile the traps were also filled with 1,1,0 specimens, which was completed by the same curious male lizard. So during two days we were able to catch 5 lizards, of which the curious male was a recapture. 2,2,0 specimens were added to our database.

In total we were able to distinguish between 4 males, 6 females and 2 juveniles. Compared to the situation on the similar but larger Caragoler island, this could well be the big part of the population.

This is the first published record of a *Podarcis pityusensis* population on Escull d'en Terra. We will describe these lizards and their habitat in detail in a forthcoming article (ZAWADZKI & VAN DEN BERG in prep.).

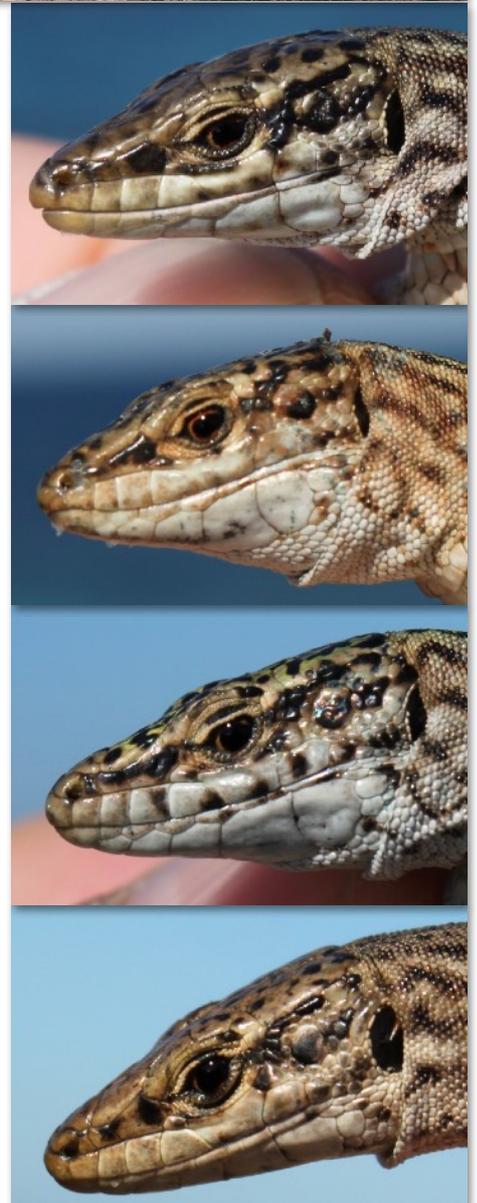


Image 36. Portraits of the sampled Escull d'en Terra lizards.

Wednesday, the 12th of April 2017 - **Negra Norte** (NgN)

n=1
NgN

100%

n=1
(2017)



Image 37. Habitat on Illa Negra Norte, with Penjats in the background.



Image 38. *Tarentola mauritanica* on Illa Negra Norte.



Image 39. Male on Illa Negra Norte.

In contrary to MARTEN, MIKE was able to reach Illa Negra Norte, and he spent most of the day on this island, previously not yet visited by us. Illa Negra Norte has a big lizard population, like the nearby, but bigger, Penjats island. Although the collecting conditions were good, maybe a little bit too much wind, the lizards were not easy to catch, partly because all the traps were on Escull d'en Terra. Most lizards were hiding inside the bushes, and even while moving outside the bushes, they were also not easy to photograph. Only one male specimen could be persuaded to approach the bate (apple) and was caught by hand, this in contrary to the local *Tarentola mauritanica*, which were much easier to catch.

Negra Norte



Image 40. Male on Illa Negra Norte.



Image 41. Another male on Illa Negra Norte.

Thursday, the 13th of April 2017 - Vedranell (Vnl)

n=4
Vnl

100%

n=2
(2017)



Image 42. MIKE on Es Vedranell.



Thursday was our first scheduled visit inside the Es Vedra Natural Reserve. We met our new skipper PACO in the harbor of Sant Antoni in the early morning, where he was trying to get the engine of the boat into the water. There seemed to be a big problem with the trim, what adversely affected the possibilities regarding getting ashore. After picking up some ornithologists from Conillera, and dropping them off at a cave on Espartar, we went as planned to Es Vedranell, trying to enhance our dataset. Unfortunately the remaining time for fieldwork was quite limited, so we were glad to catch at least 1,1,0 specimens and take some pictures, however, there was no time left to get a full dataset of these lizards.

Image 43. Portraits of the caught lizards.

Vedranell



Image 44. Explored habitat on Es Vedranell.



Image 45. Female on Es Vedranell.

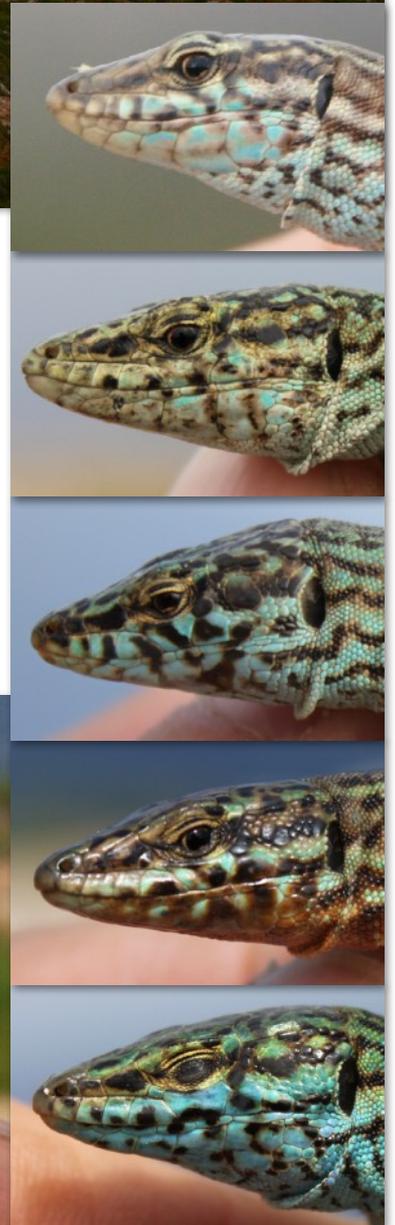


Image 46. Conillera in the mist.

The sun was shining this Saturday morning in the harbor of Sant Antoni, but not on the face of PACO, struggling with the same problem as on Thursday. After some delay we went out to sea, and encountered heavy sea fog. Our schedule should bring us to Escull Vermell, but the Bledas islands were even out of sight. Time was already short, so the best alternative would be Conillera, and hope for some better conditions soon. At least on Conillera there were also some stones to turn. Around 11:00 the fog had disappeared, and in the time left 3,2,0 specimens were added to our database.

Image 47. Red bellied female.

Image 48. Portraits.



Conillera



Image 49. Conillera around 11.00.



Image 50. More bluish male.



Image 51. Another male.



Image 52. Wrong approach.



Image 53. Drone view of Ses Margalides.

Without the engine problem, and no ornithologists to support, we had a quick start on Tuesday morning and entered Ses Margalides around 8:30. We were very pleased to have the opportunity to perform our fieldwork for at least 3 hours. After careful evaluation of the areal videos we shot the days before with our drone, we decided not to spend time on trying to get to the top of the island; too difficult. Therefore we remained in the same area as on our first visit. The traps were put out on promising places, and we started observing. One of the loose-ends remaining after our last visit to this very special population was the alleged observation of a grayish color morph. We now have to admit this must have been just a fata morgana. On the same spot we found a greenish backed female (see image 64), with a weak black pattern, resembling the grayish observation we made back in 2015 (VAN DEN BERG et al. 2015). But this was not our only second encounter. One of the first lizards out resembled also one of the lizards we caught in 2015; a greenish backed female (see image 54). In her case we did not wait for her to get into one of our traps, but decided to catch her by hand immediately, and it proved to be the same lizard indeed. In total we caught 11 specimens, of which we were able to add 4,5,0 to our database.

During our previous visit in 2015 (VAN DEN BERG et al. 2015), most lizards appeared to be in a pre-shedding condition, which blurred their coloration to some extent. During this visit, the lizards appearance was much more vivid, and also in a lot of the darker specimens, coloration and pattern was much more visible (see images 60 and 61).

Ses Margalides

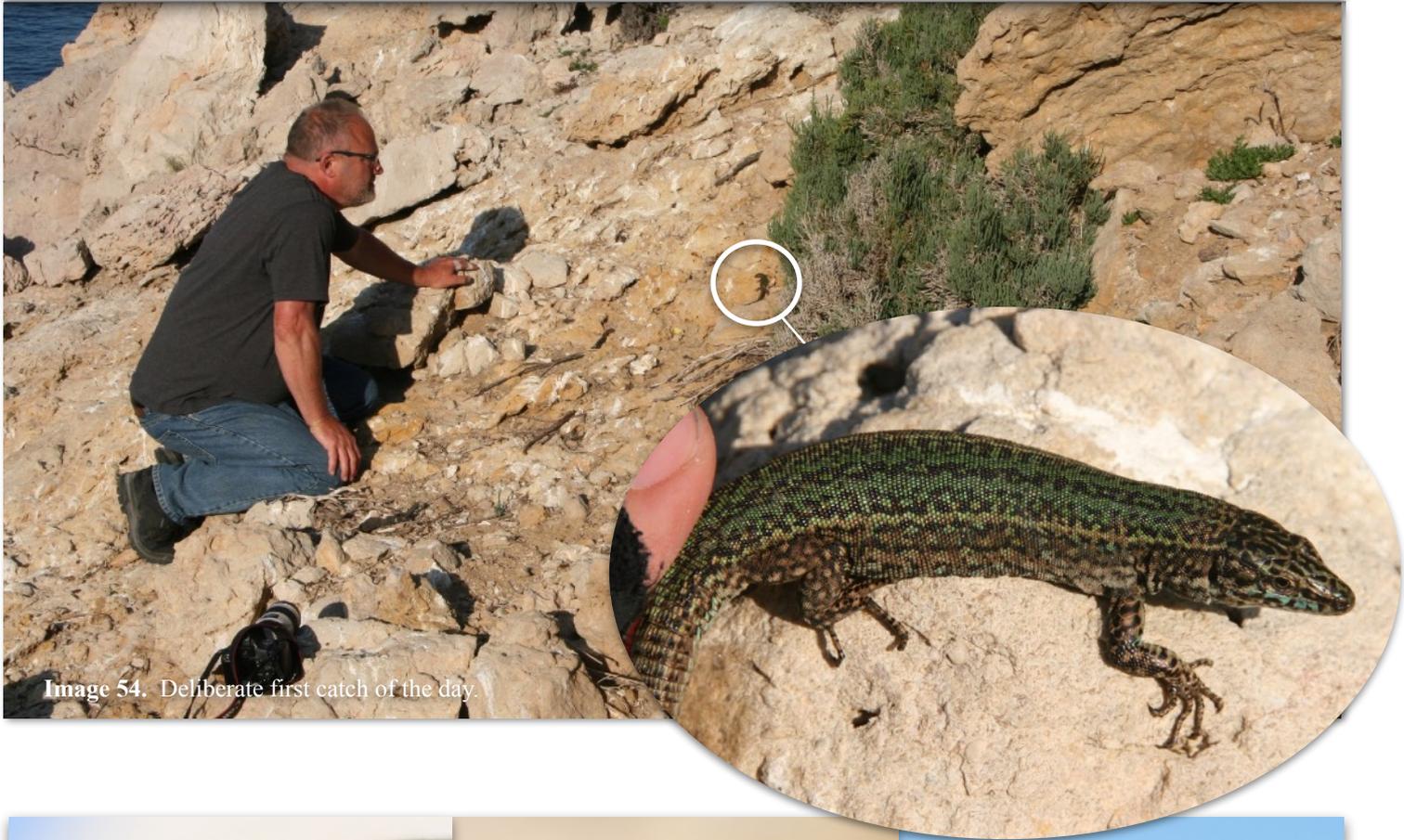


Image 54. Deliberate first catch of the day.



Image 55. Portraits of the Ses Margalides lizards.

Ses Margalides



Image 56. Our audience.



Image 57. Dark female.



Image 58. Another dark female.



Image 59. Juvenile on Ses Margalides.

Ses Margalides

The two bluish males observed in 2015 (VAN DEN BERG et al. 2015) were not retrieved during this visit, but another bluish male was caught and sampled, and another somewhat bluish male was observed, but did not enter our trap. When we compare this male lizard with one of the lizards captured during a field investigation by the team of VALENTÍN PÉREZ-MELLADO in November 2015 (ROMERO 2015), we might assume, by the pattern on the cheek, and the condition of the tail, that this the same specimen (see image 62).

PÉREZ-MELLADO's 2015 visit on Ses Margalides was part of a tissue collection effort from multiple *Podarcis pityusensis* populations, in behalf of a combined research project of the University of Salamanca and UIB (Palma de Mallorca) on the gene expression of MC1R in different populations, which should bring the first answer(s) regarding the mechanism of melanism in *Podarcis* lizards (ROMERO 2015).

Preliminary results in *Podarcis lilfordi* are suggesting that differences in gene expression of MC1R is indeed a factor in differences between melanistic and lighter colored populations (ROMERO 2015). The Ses Margalides population is the most interesting population towards future research on coloration in general, because of the different kind of color morphs present, which are almost certainly the result of natural causes within the population only, and not influenced by translocations in the past.



Image 60. Male with a somewhat different color arrangement.

Image 61. Dark male with a clear green dorsal coloration.



Ses Margalides



Image 62. Somewhat bluish male from different perspectives photographed during this visit to Ses Margalides (rectangular images) for comparison with the same specimen photographed by JOSÉ MIGUEL ROMERO (ROMERO 2015) (round inserts).

Assuming this specimen did not encounter another tail-losing event, we can observe the regeneration result (black bar) of 18 months in this particular specimen on Ses Margalides.

Image 63. The tail amputation in progress of the lizard shown in image 62 in ROMERO (2015).



Ses Margalides

The second loose-end remaining after our 2015 visit to Ses Margalides; sampled specimens with a clear red belly (see image 66), were regrettably not observed during our 2017 visit, and consequently still not sampled by us. Enough reason to revisit this population in the future.



Image 64.
Probably the “grayish” color morph encountered during our 2015 visit.

Image 65.
Another female on Ses Margalides.



Image 66.
Red bellied male photographed by JOSÉ MIGUEL ROMERO (ROMERO 2015).



Conclusion

This year's trip was quite successful and we were able to collect some more important data. A highlight was the discovery of a small *Podarcis pityusensis* population on Escull d'en Terra, on which we will report in more detail in a forthcoming article (ZAWADZKI & VAN DEN BERG, in prep.). We trust that with the publication of the results in PÉREZ-MELLADO et al. (2017), the restrictions regarding Es Vaixell will be lifted.

Acknowledgment

We are grateful to a lot of people making this trip possible:

Palma de Mallorca: IVAN RAMOS and JOAN MAYOL for cooperation and granting all permits necessary.

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Ibiza: MARTINA GREEF helping us with the kayaks.

Ibiza: CHEMA RAMON for his hospitality at his house in Can Pilot.

Bonn: DENNIS RÖDDER and URSULA BOTT in recommending us.



Image 67. PACO, our new skipper.

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