Observations on the Egyptian Grass-loving Lizard, *Philochortus zolii* (Lacertidae)

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Photos by the author unless indicated otherwise.

Figure 1. Young specimen *Philochortus zolii.*

Photo: Philippe Geniez

INTRODUCTION

The North African genus *Philochortus* Matschie, 1893 currently comprises seven species, each of which has only modestly been published about. I was therefore pleased to be invited on a field trip concentrating on various lacertids in Northern Egypt, and looked forward to collecting *Philochortus zolii* Scortecci, 1934. My main hope was to learn more about the lizard's reproduction, ethologically, especially its courtship behaviour, as well as its reproductive capacity (number of clutches, number of eggs per clutch and per individual). As we spent three days in the lizard´s habitat and actually stayed the night in our sleeping bags, we did get a cursory impression of the general behaviour of the species in the field.

MATERIAL AND FIELD NOTES

My five specimens of *Philochortus zolii* were collected in Wadi Natrun (Egypt), 30°.425.33 N/ 30°.286.53 E, April 21-23, 2006 by hand and by using a sling.
The animals only tongue-flicked inquisitively at the sling but were quite wary when approached by hand.

We explored the location (fig. 2) for several days, starting as early as 7:00h when it was still fairly chilly that early in the year and sometimes cloudy, and finally found the species on the third day after 10 am. The three specimens that were initially found, were smaller subadults while all later finds were larger

Figure 2. The habitat with clumps of Halfa grass near Wadi Natrun.

Figure 3. A more general view of the surroundings.

animals. All five lizards that were collected, were first noticed at the base of tussocks of Halfa grass (*Desmostachya bipinnata*) or in the more open but prickly growth of *Fagonia* cf. *aegyptia*. *Desmostachya bipinnata* has a wide distribution and is native to north-east and west tropical, and northern Africa, countries in the Middle East, and temperate and tropical Asia. It varies in height from 30 to 150 cm. The stems are much branched, tufted and profusely rooted, and it branches from the rootstock, sending out rhizomes in all directions (POWO, 2020). Although not seen in or at the base of *Tamarix* bushes, the lizards might well be using those as well. *P. zolii* seems to avoid the more salty areas (recognisable to us by their white crusts).

One lizard with part of the tail missing was noticed in a neighbouring, considerably less vegetated, piece of land (fig. 3). All animals were found alone, dozens of metres apart. When disturbed, the lizards repeatedly ran very quickly for at least 5-10 m to hide again in the bushes or bask at the base thereof. While basking on the ground, the *Philochortus* made some sideways movements. We have not seen them higher up in the Halfa, but presumably they are quite able to clamber the stalks using their very long tail in the way one lizard showed on the collecting rod after being caught with the sling at its end (fig. 4).

This early in the year few invertebrates suitable as food for the lizards were noticed. Most common were ants, some flies, large spiders and various Odonata resting in the grass.
Other herps that were seen in the area: during daytime only *Acanthodactylus* cf. *boskianus* was found when the *Philochortus* were also active; at night *Spalerosophis diadema*, *Tropiocolotes tripolitanus*, *Sclerophis regularis*, *Bufotes boulengeri*, and somewhat further afield *Cerastes vipera*, a common viper in Northern Africa.

A short, quasi-aggressive interaction with the *Acanthodactylus* was observed: they approached each other but at a distance of 30-40 cm dashed in opposite directions. Who fled from whom was unclear.

We visited other seemingly suitable areas in Wadi Natrun as well, but did not find any *Philochortus*. It might be that many of these localities were too salty (as exemplified by the white crusts on the earth), or too disturbed in every sense of the word.

WADI NATRUN

As the name implies Wadi el Natrun was and is a source of hydrated sodium carbonate, already exploited by the ancient Egyptians who used that in the mummification process. Not so long ago, fresh water aquifers — probably

Figure 4. How *Philochortus zolii* uses its tail around the stick with sling; in a more pronounced fashion as when moving through the grass clumps.

fed subterraneously by the Nile — were discovered which stimulated a multitude of small-scale, apparently frequently unsuccessful agricultural attempts. Although understandable with an annual population growth of near a million persons/year in Egypt, most parts of Wadi Natrun were and are consequently massively messed up (fig. 5). The soil is a mixture of clay and sand, mainly sandy in the habitat of *P. zolii*. One of the crops that was attempted in the area of the *Philochortus* habitat, sunflowers, hardly developed seeds and were not even harvested which left behind a ruined area.

Figure 5. Wadi Natrun is definitely not an undisturbed area.

HOUSING AND FOOD

The lizards were initially housed in two different vivaria: three specimens in a 45x45x115 cm glass vivarium, and two in a 30x30x40 cm vivarium. After two years all were housed together in the larger one. Both containers had peat dust and coarse sand as floor covering, with some stones, branches and stiff grass or reeds added to imitate the Halfa in Wadi Natrun. Light and heat was provided by 25-60 W incandescent bulbs, three in the larger terrarium that also received sun in the afternoon, and a lower wattage of 25-40 W in the smaller one. Of course, during summer the bigger container was partly shaded to prevent over-heating. In the cooler months the lower lamp-wattage was used. They were fed with locally collected Dutch invertebrates, crickets (*Acheta domestica*), mealworms (*Tenebrio molitor*) and Lesser mealworms (*Alphitobius diaperinus*), all dusted with a mineral preparation (Gistocal). Drinking water with added water-soluble 20.000 i.u. vitamin A and 40.000 i.u. vitamin D_3/l was available ad libitum. The larger animals seemed to prefer mealworms, the smaller ones crickets. In summertime various invertebrates (flies, grasshoppers, spiders, butterflies and their larvae) were actively hunted when released into their housing – where it became clear how fast they could move.
Substrate temperatures of maximally 50°C were reached under the 25-60W incandescent spotlights. Ambient temperatures varied between 18-30°C. Plastic boxes (13x17x6 cm) filled with moist potting soil provided a medium for oviposition.

FAECAL PELLETS

Analysis of the four faecal pellets collected from the animals while in transit provided no great surprises. Each pellet contained pieces of small Coleoptera, three included tiny ants (remarkably mostly heads), and two showed parts of little spiders. Only one pellet contained some grains of sand (< 5% volume), which seems an amazingly small quantity considering the habitat.

ECOLOGY

Philochortus zolii inhabits semi-deserts near oases with some clumps of grass and sparse bushes like *Tamarix* and sparse stands of *Alhagi graecorum,* commonly known as manna tree. It will also use the leftovers of nearby attempts to grain-growing. Various other smaller and less prominent plants can be found in the habitat. Several patches seem to be devoid of vegetation, at least at the time when the lizards were collected.

HABITS

We spent three days near Wadi Natrun, also taking stock of other possible *Philochortus* habitats there. On the last day, together with Sherif Baha el Din, we found several specimens. Six lizards (presumably four more or less adult specimens, and two subadults) were caught. One adult female went with Sherif who released her in the garden of his new home, which was reminiscent of the original habitat, hoping that she would be the foundress of a new population.

The five other animals were transferred to Leiden; Sherif thought a breeding program would be a good idea since their habitat disappears rapidly because of poor recent agricultural practice. Naturally, I was interested in learning more about their reproductive behaviour so a partnership was begun.

BEHAVIOUR

When caught with a sling, the animals quickly spiralled their tail around the string and/or catching stick (in this case a thin part of a fishing rod) in a way very much reminiscent of a picture in ARNOLD's (1989) paper on various African lacertids where fig. 12 showed a *Podarcis muralis* curling its tail in a less extreme manner. Remarkably enough, all the animals we spotted, were at the base of the tufts of grass (fig. 2), not ín it as you would expect from this behavioural pattern and their general morphology. Further, on a flat surface (=quarantine vivarium), they performed a peculiar walk: it looks as if they put their heels first on the surface, then the foot sole and toes follow and with the legs held widely apart (cf. ARNOLD, 1998).

There does not seem to occur a seasonal colour change during the year, although older specimens seemed to show less contrast dorsally and the tail turns to a beige.

In the vivarium the spotlights were switched on from 9:30-15:00h in the summer months. The *Philochortus* emerged, and became active, about an hour later, after basking. They disappeared usually 1-2 hrs. later. Only in the beginning of March the lizards remained active longer, up to 15:00h, but then disappeared even when the sun still shone in their vivarium as it did usually during less cloudy days, in the afternoon. Later in the summer season they were sometimes active up to 17 o'clock. This is in contrast to the majority of *Lacerta* s.l., *Podarcis*, *Psammodromus* and other Western Palearctic lacertids I have cared for over the years. While basking they intermittingly opened their mouth for just a few seconds. A way of cooling down the head while the rest of the body still 'needs' some heat? Since there was no indication of any sickness, shortness of breath was ruled out. Towards the end of November most specimens hardly showed themselves anymore, they began to appear more regularly near the end of February, but only in March/April did activity increase somewhat. This may well be related to the more sunny conditions outside in The Netherlands. In February they appeared more regularly, but mainly between 10-11h, in March until 15:00h. In Nov-Dec only one specimen (female?) was clearly visible, although another lizard could sometimes be discerned under the dead grass where the vivarium was closest to the radiator in the living room. This practice remained somewhat the same over the years. When exactly they prefer to drink was unclear until one early morning an animal crept out from under a stone and immediately headed for the drinking nap. One may interpret this as logical since in the desert some water in the form of dew may only be available in the early morning.

Figure 6. Head portrait of adult *Philochortus zolii.*

It is common for lacertids in my vivaria to jump up to the gauze top covering and hang on belly-up. However, the *Philochortus* seemed to prefer to have their back up and their belly towards the floor (fig. 7). They can even run quickly without any awkward movements that way, potentially because their long legs easily spread out (see Discussion and photos). Additionally, they showed a peculiar kind of walk in 'normal' locomotion, with their heels touching the substrate first and with a rolling movement the rest of the foot is put down. The whole gait appeared rather spread out, which certainly seems fitting when moving in the grass.

At the end of July 2008 I observed for the first time three 2-3” long bites in the tail of another

Figure 7. How *Philochortus zolii* walks along the with mosquito gauze covered top of the vivarium, with its back upward.

specimen. To me this seemed like an introduction to courtship as I experienced such in many other lacertid species. However, no follow-up occurred and they parted without any other actions. On 5 and 12 July 2009 I saw two very 'emaciated' specimens with flattened bellies, presumably females and consequently searched the whole terrarium but did not find any eggs.

Early morning July 10, 2009 I noticed a small hole in the vivarium substrate very near a piece of bark, which next appeared to be closed by early afternoon and during the night. One of the smaller specimens was responsible for this first hole. The closing occurred from the inside by pushing substrate outside with the tip of the snout and the front legs. A larger specimen seemed to have taken up residence under a large stone. There the potential opening and closing was hard to observe because the vivarium is in the corner of the room near the window. In the field I did not see this opening and closing, but when chased did see them using these initially inconspicuous burrows as an escape route (fig. 8).

Although they walked around after basking for a while in the vivarium, it is difficult to say the *Philochortus* really often actively hunted for food. In contrast to many lacertids, they seemed to be fond of mealworm pupae, but then again they may cross these repeatedly without noticing that as a food item and only when given by tweezers (often the same pupa!) and held in front of them, was it grabbed and eaten. I rarely saw them running after any of the insects or spiders presented. They surely must do so in the wild? The lizards dug enthusiastically, even so much that smaller stones became displaced. They often remained subterraneous for longer periods, with a predilection for warmer spots in their housing. In December and January the *P. zolii* showed themselves even more rarely and I switched off the light sometimes for several days as in their natural habitat temperatures may then fall well below 10°C and some kind of hibernation could be likely. In that period most lizards remained hidden, although on close observation one or two were spotted among the dried grass tussocks.

Even after having kept them for several years,

Figure 8. Holes in the desert soil dug by *Philochortus zolii.*

none of the specimens had an even slightly swollen tail-base, often seen in male lizards, and none of the femoral pores exuded the waxy rods so characteristic of reproductive males. Only in one or two, the largest lizards, the diameter of the femoral pores grew a bit larger.

Suddenly a first death happened 24 May 2010, probably a female. Later that year, and into 2011 all the animals died. After consultation and autopsy and discussion by veterinarians at the University of Utrecht, it became clear that the cause was a spoiled vitamin D_3 preparation. Unbeknownst to me this had been stored in the deep freeze by the apothecary who prepared the vitamin supplement. This was extremely disappointing. Possibly the effect of the absence of the vitamin took hold relatively fast in *Philochortus* as one can presume desert lizards normally receive a large dose of UV which helps in forming vitamin D_3 under natural circumstances.

THREATS

Apart from the obvious disastrous human influence (fig. 5), it is to be feared that the many botched attempts at agriculture in Wadi Natrun will seriously hamper the survival of the only known Egyptian population of *P. zolii*. This lizard no doubt is prey to some birds, and to the night-active snake *Spalerosophis diadema* found in the area, that is especially fond of lizards. I am, however, unsure if the snake captures them in their burrows (fig. 8), or out in the open during dawn and dusk. From my own experience *S. diadema* is rarely if ever active in daytime during the warmer months.

DISCUSSION

The genus *Philochortus* has not recently been reviewed. Especially the curious ostensible absence of any members of the genus between the occurrences of *P. zolii* in Egypt and Libya is remarkable, as is the over 1000 km in distance. Other members of the genus are found in Algeria, Djibouti, Eritrea, Ethiopia, Kenya, Mali, Niger, Saudi Arabia, Somalia and Yemen. As BAHA EL DIN (2006) and KAMAL et al. (1966) provisionally treated the Egyptian specimens as *P. zolii,* for now it seems best to follow suit. And indeed, as the nearest species, *P. intermedius* (a name previously used for the Egyptian species) lives much to the south (Djibouti, Eritrea, Ethiopia) and as such being an unlikely candidate for the Egyptian form. The curious gap of around 1000 km between the Egyptian locality Wadi Natrun and the Libyan one near “Ajdabja” (= Ajdabiyah?), with no *Philochortus* records in-between, was already mentioned by MARX (1986). By the way, SCORTECCI (1934) reported a find in the oasis Elbarkat (Libya) in March. No up-to-date work on the genus exists, although BAHA EL DIN (2006) fairly recently discussed *P. zolii* Scortecci, 1934 and *Philochortus intermedius* Boulenger, 1917. It may well be that more thorough investigations will noticeably change the summary of species or fill in the distance between the two North African localities.

One specimen concerns *Philochortus zolii* Scortecci, 1934 (MCZ 46850) which according to MARX (1968: 19) says "35 miles west of Ajedabja, 10 miles south of Libyan coast". This is ridiculed by SCHLEICH et al. (1996) "as the Mediterranean lies 15 km W of Ajedabia". In my opinion this was a simple typo, as Marx was prone to these (Van Wallach, pers. comm. 21 Nov 2007), with ten miles being approximately 15 km, thus no need to be so scornful. As the city Agedabia is variously spelled as Adzjedabia, Agedabia or Egdabya, and it lies 12 km from the coast, this most likely indeed is the locality of the collected specimen. Moreover, Van Wallach checked the handwritten labels in the collection for me and mentioned that “in Loveridge's script this reads as follows”: (46850) "35 miles west of Agedabia, which is 10 miles south of coast of Libya/Cyrenaica" (Van Wallach, pers. comm. 21 Nov 2007).

The daily rhythm in the vivarium, certainly in the first year, was understandably comparable to what we noticed in the wild, although that was just a few days in early Spring. Still, this certainly was not my first acquaintance with lizards in a desert-like area, having been to various areas in the Middle East and Morocco, and having spent some time in a field lab in the Sinai at various times later in the year. It is obvious that great summer heat is avoided, as well as the early mornings when day-active lizards cannot quickly reach their activity temperature. Similarly they are less active in the cooler winter months of say

Figure 9. *Philochortus zolii* subadult.

November-February. The grass-loving aspect was never clearly demonstrated in captivity. The main attraction seemed the need for a cooler or warmer spot, be that grass, bark or a piece of stone.

Predation pressure seemed to be relatively low since, of the specimens observed, only two showed a partly damaged tail. It took almost four months before the tail of the single lizard, which lost a part of its tail while being caught, started to regenerate. Remarkably, the regenerated part was just as brightly vermilion-orange as the original tail; in several Eurasian forms that is not always the case, with the newer part ordinarily being brownish or grey. At the end of July 2006, just 12 mm had regrown, in November regeneration reached 55 mm, then remained at a standstill.

Unsurprisingly, as several animals were judged subadults when caught, the lizards grew in weight and size (tables 1-3): from an average of 4.07 g (2.34-6.81 g) in May 2006, to 6.24 g (5.12-7.98 g in January 2010), and 55 mm head-body to 61 mm. Because of slight measuring inaccuracies (the animals do not always keep still) mistakes of a few mm may occur. Tail-lengths also increased, but as partial tail loss was seen (due to interactions? but not witnessed) will not show an ideal growth curve. A maximum of 190 mm was noted. Also, as sexes were very hard to discern in my sample, a male-female distinction could not be confirmed. BAHA EL DIN (2006) gave a snout-vent length of 73 mm, slightly larger than the maximum of 69 mm which I measured in a fully relaxed animal. The dorsal body striping fades somewhat over the years to a less contrasted pattern in which beige dominates, but does not disappear (see figs. 1, 6 and 9). Especially the younger animals show an amazing colour pattern of longitudinal stripes of almost white and black, with a vermilion tail. The bright vermilion to orange tail colour also becomes less bright, but this may also be the result of a lack of ultraviolet in the vivarium. SCORTECCI's (1934) specimen measured head-body 47 mm; a subadult compared to the data presented here (assuming Libyan and Egyptian *Philochortus* are the same species). MARX (1969) gave as snout-vent length 52-73 mm and the tail length of six specimens with complete tails 149-215 mm; maxima not reached by my sample. The

Table 1. Data on length, weight, and colour of the five wild-caught *Philochortus zolii* May 2006. (HB+tail = head-body length + tail length; * tail partly regenerated; ** lost when captured. Ventral colour = snout tip-cloaca, dorsal colour = snout tip-above cloaca dorsally as well as laterally, tail colour both ventrally as dorsally = … . Pores: - underdeveloped without waxy rods protruding; ± developed but without waxy rods protruding; + developed, waxy rods protruding.)

Specimen	HB+tail (mm)	Weight (g)	Femoral pores	Ventral colour	Dorsal colour	Tail colour	Remarks
1	50+150	3.00	-	white	1)	orange	4)
2	54+166	3.87	-	white	1) but slightly brighter	orange, base slightly less intense	4)
3	48+51+…**	2.34	-	white	1)	orange	4)
4	68+155*	6.81	-	white	2)	light beige with slight orangey hue	4)
5	57+166	4.36	-	white	3)	pale orange	4)

1) Dorsal band dark brown, flanked by thin dark-beige lines that fuse on the dorsal part of the base. Lateral bands very dark-brown, almost black, ventrally bordered by slightly broader stripes (than the dark-beige ones as described above) of light crème. The lateral band starts to show a blocked pattern (light brown alternated with very dark brown. This band is edged by an almost as wide very light coloured one. Thereunder a very thin, somewhat irregular light-brown band. The belly is snow white.
2) Bands as in 1), but lighter pale beige. Lateral band still clearly showing a blocked pattern.
3) Bands as in 1), darker than in 2) but clearly paler.
4) Hands, feet, fingers and toes, and legs anteriorly, show a reddish tinge which colour is more pronounced on the posterior limbs.

Table 2. Data on length, weight, and colour of the five wild-caught *Philochortus zolii* in March 2007. (Legends as in table 1.)

Specimen	HB+tail (mm)	Weight (g)	Femoral pores	Ventral colour	Dorsal colour	Tail colour	Remarks
1	53+165	3.34	-	white	2)	orange	4)
2	60+176	5.17	-	white	2)	distally very faint orange, rest almost beige	4)
3	52+54+55*	3.01	-	white	1)	very faint orange, almost beige	4) but pale
4	69+160*	7.10	-	white	2) though hardly chequered, and quite pale	greyish-brown	4) but pale
5	57+178	5.38	- but larger diameter	white	2)	grey-beige	4) pale

Table 3. Data on length, weight, and colour of the five wild-caught *Philochortus zolii*, measured January 2010. (Legends as in table 1.)

Specimen	HB+tail (mm)	Weight (g)	Femoral pores	Ventral colour	Dorsal colour	Tail colour	Remarks
1	67+157	5.62	-	white	1)	light orange	4) sunken flanks
2	60+180	7.13	-	white	3)	greyish-pinkish orange	4)
3	58+100 +48*	5.35	-	white	2)	very faint orange dorsally, pinkish-orange ventrally	grey-beige
4	64+190	7.98	slightly enlarged	white	2) though hardly chequered, and quite pale	beige-greyish dorsally, greyish ventrally	4) only thighs pale yellowish
5	58+172*	5.12	-	white	2) though hardly chequered, and quite pale	beige-greyish dorsally, greyish ventrally	4) very pale beige

* partly regenerated

dark dorsal striping changed from almost black to brownish/dark-beige, the initially light beige stripes to a duller version, in a certain light sometimes looking greyish. The tail colour remains more or less the same orange.

One wonders if the quite brightly coloured vermilion tail helps to distract possible predators from attacking the body like ARNOLD (1984, 1988) proposed for the bright blue as in hatchling and juvenile lacertids while running around more in the open when searching for prey. An alternative, but probably too far-fetched, explanation could be that the colour lures prey insects as in the grass the orange rather disrupts camouflage to avoid predation (see cover photo). Then again, the clearly visible tail may distract potential enemies and leads an attack to a more expendable, and regenerable!, body part while hunting in the more open areas. An explanation as sometimes proposed for, e.g., snakes that may twitch their differently coloured tail tip to lure prey, was never seen. Apart from some slight up-and-down movements of the front legs, with a clear sideways shuffling component of the body, the lizards hardly react to each other in the terrarium, and the first aspect mainly occurred when I was the disturbing factor, while, e.g., providing fresh water and food. Even when walking over another specimen they do so as if it were twigs. The single vague indications to courtship behaviour with short tail-biting was in July 2008. The timing of this could be related to a recent oviposition as this correlation in European lacertids is well-known to me. As mentioned, on July 5, 2009 and July 12, 2009 two animals appeared to have laid eggs; flanks sunken and they quickly accepted food, but no eggs were found. On the latter date the largest specimen (male?) had emptied most of the moist earth from the container meant for oviposition. Was a possible clutch been consumed by him/her? Sadly, no further overtures were ever witnessed. Especially unfortunate, as one of my priorities was to describe the reproduction in this species, in the hope of a further understanding, and possibly contributing the native population size by controlled captive breeding.

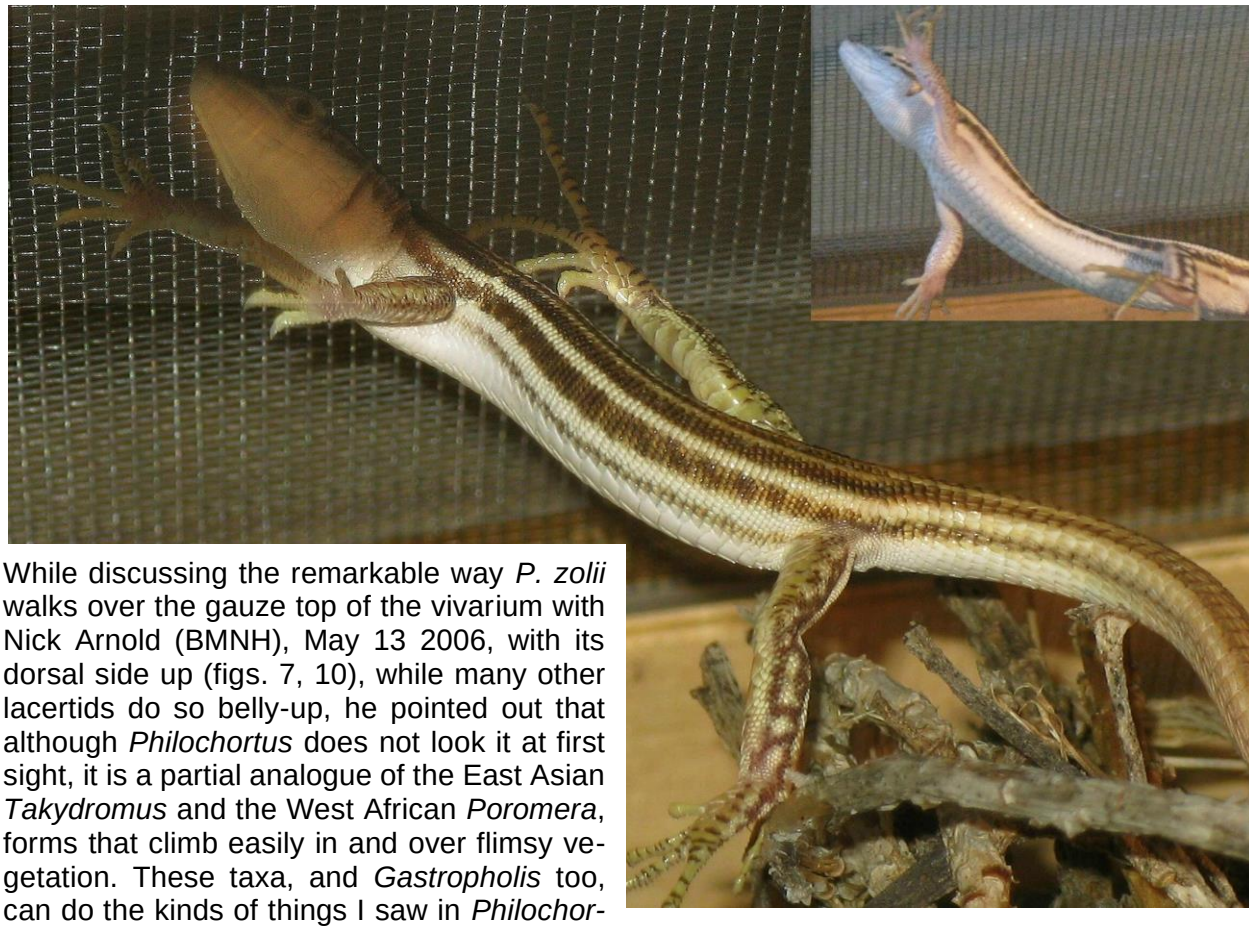

Figure 10.How *Philochortus zolii* walks along the with mosquito gauze covered top of the vivarium, with its back upward. Also seen in the first phase in the smaller photo with less contrast.

While discussing the remarkable way *P. zolii* walks over the gauze top of the vivarium with Nick Arnold (BMNH), May 13 2006, with its dorsal side up (figs. 7, 10), while many other lacertids do so belly-up, he pointed out that although *Philochortus* does not look it at first sight, it is a partial analogue of the East Asian *Takydromus* and the West African *Poromera*, forms that climb easily in and over flimsy vegetation. These taxa, and *Gastropholis* too, can do the kinds of things I saw in *Philochortus*. The behaviour is associated with anatomical features that enhance function including blade-like expansion of the neural spines on the vertebrae that increase the areas for muscle insertion and origin, permitting the lizard to stiffen its body when crossing gaps in the vegetation, and spiral its tail etc. (ARNOLD, 1997, 2004).

We also covered the rather funny walk *Philochortus* has, and the digging behaviour. Most lacertids dig a burrow by first clawing earth with each fore foot and then shoving it back with the hind foot on that side, especially once they have got a little distance into the soil. But about 15 years previously, Nick noticed that captive *Heliobolus lugubris* from Namibia did something quite different (cf. ARNOLD, 1998). They dig entirely with the forelimbs and then go into the burrow, turn round and use the same limbs to push the soil out of the hole. Nick later heard Sherif Baha el Din describe the same behaviour in *Philochortus* in addition to the more common backwards movement of front and hind legs, and later again also in *Pseuderemias*. This compares nicely with the way I described the opening and closing of apparent overnight burrows. It is probably a synapomorphy for these three genera and is not found in other rather similar lacertids like *Latastia* and *Nucras*, or anywhere else in the Lacertidae that we know about.

SUMMARY

Field notes and vivarium observations on *Philochortus zolii* are given as contribution to the biology of this little-known genus of lacertids. These concern the activity rhythm, food preferences, weights and sizes and colouration of the five captive specimens. The largest specimen had a maximum snout-vent length of 61 mm, a tail length of 190 mm and weighted 6.24 g. Unhappily no reproduction was recorded, which very well may have been caused by a lack of adult males. Possible oviposition occurred in the vivarium in July 2009. The annual activity was lowest in November to February; in the warmer months the daily activity peaked with the start focused around

10-12 o'clock, in later years this shifted to 14-17 o'clock because of the position of the vivarium when the lizards could profit from the sunshine coming from the south-west. The curious way the *Philochortus* walk with the dorsal side up on the gauze cover of their cage, is described and discussed, as is their locomotion in the vivarium.

SAMENVATTING

Waarnemingen vroeg in het voorjaar in het veld in 2006, zowel als later in het terrarium over gedrag van vijf *Philochortus zolii* gedurende vier jaar, betreffen het activiteitsritme, voedselvoorkeuren, kleuren en afmetingen. De maximaal bereikte kop-romplengte was 61 mm, staart 190 mm, en het hoogste gewicht bedroeg 6,24 g. Helaas plantten de dieren zich niet voort in het terrarium, wellicht te wijten aan het ontbreken van volwassen mannetjes. Mogelijke eileg wordt gepostuleerd voor juli 2009. De activiteit over het jaar in het terrarium is het laagst van november tot februari. In de warmere maanden ligt de meeste dagactiviteit tussen 10 en 12 uur, hetgeen in later jaren verschoof naar tussen 14 en 17 uur, eenvoudigweg omdat de zon dan in de bak scheen. De opmerkelijke manier waarop deze hagedissen over het gazen deksel lopen, met de rug omhoog, wordt beschreven, evenals hoe ze zich verder voortbewegen, met name over de bodem en in het gras.

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