

**THE BRITISH
HERPETOLOGICAL SOCIETY
BULLETIN**



**No. 46
Winter 1993**

THE BRITISH HERPETOLOGICAL SOCIETY

c/o Zoological Society of London
Regent's Park, London NW1 4RY

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The British Herpetological Society was founded in 1947 by a group of well-known naturalists, with the broad aim of catering for all interests in reptiles and amphibians. Four particular areas of activity have developed within the Society:

The Captive Breeding Committee is actively involved in promoting the captive breeding and responsible husbandry of reptiles and amphibians. It also advises on aspects of national and international legislation affecting the keeping, breeding, farming and sustainable utilisation of reptiles and amphibians. Special meetings are held and publications produced to fulfill these aims.

The Conservation Committee is actively engaged in field study, conservation management and political lobbying with a view to improving the status and future prospects of our native British species. It is the accepted authority on reptile and amphibian conservation in the UK, works in close collaboration with the Herpetological Conservation Trust and has an advisory role to Nature Conservancy Councils (the statutory government bodies). A number of nature reserves are owned or leased, and all Society Members are encouraged to become involved in habitat management.

The Education Committee promotes all aspects of the Society through the Media, schools, lectures, field trips and displays. It also runs the junior section of the Society – THE YOUNG HERPETOLOGISTS CLUB (YHC). YHC Members receive their own newsletter and, among other activities, are invited to participate in an annual "camp" arranged in an area of outstanding herpetological interest.

The Research Committee includes professional scientists within the ranks of the Society, organises scientific meetings on amphibian and reptile biology and promotes The Herpetological Journal, the Society's scientific publication.

Meetings

A number of meetings and events take place throughout the year, covering a wide range of interests.

Publications

The BHS Bulletin, Herpetological Journal and YHC Newsletter are all produced quarterly. There are in addition a number of specialised publications available to Members and produced by the various Committees, such as notes on the care of species in captivity, books and conservation leaflets.

Subscriptions

All adult subscriptions become due on the first day of January each year. Payment by Banker's Order is much preferred.

Ordinary Members	£20	(Receive Bulletin only)
Full Members	£25	(Receive Bulletin and Journal)
Family Members	£30/£37.50	(Without/with Journal) Family members with children also receive the YHC Newsletter
Student Members	£18	(Receive Bulletin and Journal)
Institutional rates	£36	(Receive Bulletin and Journal)
YHC (Age 9-18):		
Basic Membership	£5	(Receive YHC Newsletter)
Bulletin Membership	£10	(Receive Newsletter and Bulletin)
Group Membership	-	For Schools, Youth Groups etc. Contact Education Officer (Address on inside of back cover) for details)

Correspondence, Membership applications, subscription renewals and purchase orders for publications should be addressed to the Secretary (address as at page top) EXCEPT for YHC matters. YHC Membership and renewal details are available from the Education Officer (address on inside of back cover). PLEASE INCLUDE A STAMP-ADDRESSED ENVELOPE WHEN WRITING TO THE SOCIETY.

The Society does not, as a body, hold itself responsible for statements made or opinions expressed in the Bulletin; nor does the Editorial necessarily express the official opinion of the Society.

The Bulletin is edited and produced by
Simon Townson and Neill Clark.

Contributions and correspondence arising from the Bulletin should be sent to:
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FRONT COVER

***Salamandra salamandra**, The European Salamander. See article on p.27.*

BRITISH HERPETOLOGICAL SOCIETY MEETINGS FOR 1994

The following list provides dates and, in some cases, only preliminary details of meetings scheduled for 1994. Where information is currently incomplete, further details will follow in later Bulletins closer to the events in question.

- | | |
|--------------|--|
| February 5th | Herpetofauna Recorders' Meeting (HRM) 1994.
(University of Manchester). |
| March 19th | Annual General Meeting (Birkbeck College, London)
Speakers will be:
(1) Rob Quest (<i>Heathrow Customs</i>):
"Reptile Imports"
(2) Dr Andy Smart (<i>Bristol University</i>):
"Nesting success of green turtles at Kazanlı, Turkey"

Dr S. Hugh-Jones (<i>Cambridge University</i>):
"Snakes, frogs, Indians and other herps in north-west Amazonia" |
| May 1st | Joint Conservation & Federation Committee meeting. |
| May 7th | Captive Breeding Committee Amphibian meeting
(New Denham) |
| May 15th | "Leapers & Creepers" events, organised by Surrey Wildlife Trust,
following by later (7-9pm) visit to Beam Brook* |
| July 2nd | Captive Breeding Committee Animal Husbandry workshop
(New Denham) |
| October 15th | Autumn General Meeting (Birkbeck College, London)
Speakers will be:
(1) Chris Wild (<i>Nottingham</i>):
"The montane chameleons of the Cameroon Highlands"
(2) Dr Jim Foster (<i>Durrell Institute of Conservation & Ecology</i>):
"Reptile conservation in south India"
(3) Dr Angelo Lambiris (<i>Essex</i>):
"Southern African amphibians" |
| November 5th | Captive Breeding Committee Captive Stock Sale
(New Denham) |
| December 3rd | Research Committee meeting (Birkbeck College, London) |

* For those unfamiliar with Beam Brook, this is an old nursery site with a series of small ponds near the village of Newdigate (south of Dorking) in Surrey. Since 1905 it has been home to a variety of both native and introduced species of amphibians and reptiles; it is especially renowned for its colonies of edible frogs, Italian crested newts and alpine newts. BHS Members may either turn up at 7 pm at the Beam Brook site, or go there following attendance at the "Leapers & Creepers" session that runs through the day and should finish by 5 pm. There will no charge for entry, and Members will be allowed to examine and net the various ponds during the visit (but not to take away any animals caught).

For those going directly to Beam Brook, the nursery is situated in Partridge Lane, approximately 1 mile due east of Newdigate village (Map ref. TQ 216423). It is reached from Newdigate by taking the road leading out to the north-east, which after about a mile turns south-east and becomes Partridge Lane. Beam Brook is signed on the west side of the road.

REPTILE AND AMPHIBIAN VETERINARY ADVISORY GROUP

Objectives –

To provide members of the BHS and other non-specialist veterinary surgeons with a 24hr advice line.

To offer extensive diagnostic services for members, vets and research workers, to include –

1. Mr M. Barnicoat, Dept. of Microbiology, The National Hospital for Neurology and Neurosurgery, Queen Square, London.

To provide full microbiology services to excellent standards. Facility for electron microscopy, virus isolation etc.

2. Dr C. McCormick, Dept. of Pathology, The Royal Berks. Hospital, Reading, Berks.

To provide histopathology and specialist pathological investigations. Facility for photomicrographs etc.

3. Dr P. Daszak, Parasitology Research Group, University of East London.

To provide specialist parasitology diagnostic services. Liaison with the Natural History Museum and Institute of Zoology.

4. Mr M. Geach, Amazon Veterinary Services, Henley, Oxon.

To act as founder/Chairman of the Group. To offer full medical and surgical facilities. Diagnostic services to include haematology and biochemistry (establishing an information data base on these areas), initial parasitology, radiography and radiology, Magnetic Resonance Imaging, pathology etc.

To publish an annual compilation of the years interesting cases and findings. Writing review articles, to act as referees before articles of a veterinary nature are published in the *Bulletin* and to arrange an annual seminar with invited speakers. Practical sessions for BHS members eg. basic microscopy for parasite screening, health care etc.

I am willing to allow the BHS to make use of this service. In the case of research, members of the BHS may receive free services depending on the work involved. Amazon Veterinary Services only treats reptiles, amphibians, fish and invertebrates. As I already offer a 24hr service for these species, I can allow the use of my telephone/fax numbers for members/vets in the *Bulletin*.

Reptile & Amphibian Veterinary Advisory Group,
c/o Amazon Veterinary Services, Basketmakers Cottage, 45 Gravel Hill, Henley-on-Thames, Oxon., RG9 2EF.

Tel: 0850-433606 or 0491-577328 (24hrs)

Mr Mark R Geach BVSc. M.R.C.V.S.

A POPULATION OF TURLOUGH TOADS

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INTRODUCTION

I have long envied the Irish for having turloughs, but thought that pools which fill and empty as if they had a mind of their own could only be Irish. The news that a turlough had been found near Carmel Woods, Ammanford in Wales and that it contained a common toad population came as music to my ears.

Having had a long acquaintance with the toad populations of Llandrindod and Llysdymanor in mid-Wales, I was keen to look closely at the data which Dick Davies sent me regarding the Pant-y-llyn population. A quick look at the data rapidly dispelled some of my "well known facts" about toad populations and in addition confirmed some anomalous behaviour which I had observed at Llandrindod.

OBSERVATIONS

There is very little difference in size of individuals between the populations at Pant-y-llyn and Llandrindod although the former has a smaller population size than the latter had when actively studied a decade ago.

At Llandrindod the average duration of migratory activity over a five year period was 35 days with 11-12 days within this when activity was intense. If the data collected from Pant-y-llyn in 1993 covered most of the breeding migration then it seemed to be accomplished in about a fortnight.

Probably the most interesting population parameter collected from Pant-y-llyn in 1993 relates to the observed sex ratios:

	Pant-y-llyn	Llandrindod	Llysdymanor
	m : f	m : f	m : f
breeding	1 : 1.5	3 : 1	4.7 : 1
summer			2.1 : 1

The sex ratio of the Pant-y-llyn population is quite remarkable since most previous studies have found more males than females. For instance, Davies & Halliday (1977) found that, in an Oxford pond, there were six males to every female and Moore (1954) in Dorset found two males to every female. This observation alone is sufficient to merit further investigation of the population.

At Pant-y-llyn spawning was recorded when the water temperature reached 9°C and throughout the recorded migration the temperature was between 8-10°C. Threshold temperature for movement varies between populations, at Llandrindod it is about 4°C; at St. Ives, Frazer (1966) found it to be 7°C and slightly higher in an Exmouth

population. In our researches in the late 1970s and early 1980s we agreed with the established wisdom of the time that in our case migration would not begin before day 65 of the year even if there was favourable weather in February. In 1991 I had to eat my words when I observed a significant migration of all male toads at Llandrindod. They were of average length but visibly underweight. The observation at Pant-y-llyn of toads on the 11th February with a large movement on the 16th fits in with my observation. My original thought on these apparently anomalous movements was that mild winters had turned up the toads' "thermostats" too high resulting in a too rapid utilisation of fat reserves forcing them out of hibernation too early.

A turlough with such an unusual toad population – lucky Llanelli Naturalists!

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NOTES ON THE HERPETOFAUNA OF SOME OF THE CYCLADES ISLANDS, GREECE

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INTRODUCTION

The following account is a summary of the reptile and amphibian species observed during two visits to the islands of the Cyclades group, Greece. The islands were visited from 9th May to 4th June 1992, and the following year from 5th to 30th June 1993.

The Cyclades are probably the best known, herpetologically speaking, of the various island groups in Greece, though further research is still warranted as several islands are known only from old records, dating back mainly to the 1930's. Among these lesser known islands which I had the opportunity to visit can be included Folegrandos, Sikinos, Epano Koufonissi, and Schinoussa, also to a lesser extent, Kimilos. Other islands were visited because they are of particular herpetological interest. Milos, a well known locality for *Vipera lebetina schweizeri*. Santorini, where an endemic skink species, *Chalcides moseri*, has been recorded. Amorgos, which has an endemic ratsnake, *Elaphe rechingeri*, amongst its herpetofauna. Also visited was Naxos, the largest island of the Cyclades with a proportionally greater number of species than most of its neighbours. The location of these islands is shown in Figure 1.

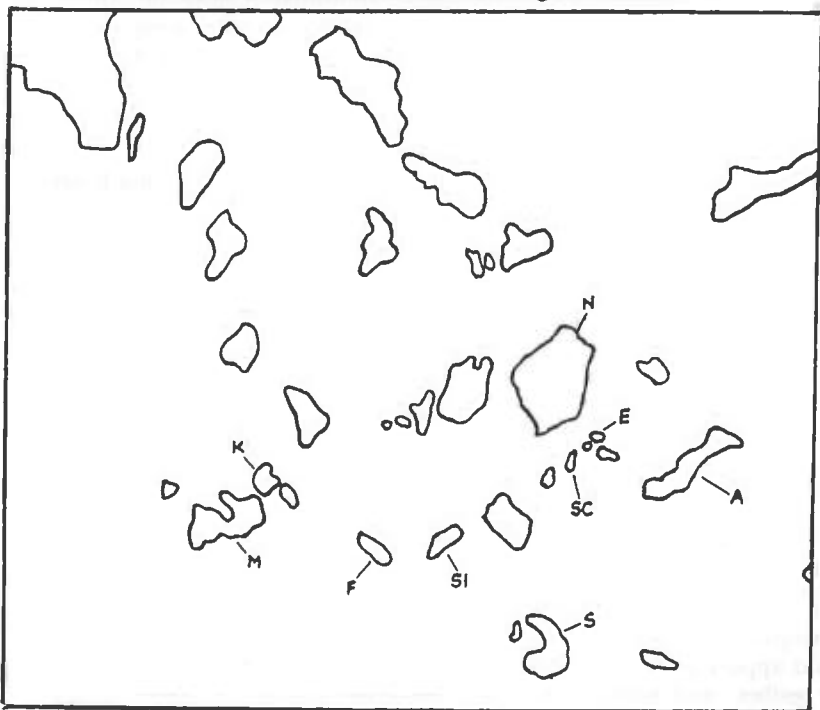


Figure 1

KEY - M Milos, K Kimilos, S Santorini, N Naxos, A Amorgos, F Folegrandos, SI Sikinos, E Epano Koufonissi, SC Schinoussa.

The majority of these islands, i.e. Folegrandos, Sikinos, Epano Koufonissi and Schinoussa, can be generally described as hilly and very barren, dominant vegetation being low phrygana with dense, spiny shrubs such as *Calicotome villosa*. Natural water courses on these islands are virtually non-existent. Milos and Kimilos have seasonal gullies and valleys which are important habitats for species such as *Vipera lebetina*. Santorini is a volcanic island virtually devoid of natural vegetation, much of the island given over to vineyards. Naxos has much more diverse habitats with small mountains rising to almost 1,000 metres and, in contrast to most other islands, has significant areas of green and fertile land. Amorgos is less fertile being hilly and rugged with valleys holding seasonal water courses, and having large areas of olive groves and orchards. Nevertheless, even on the latter two islands, phrygana covered hillsides are still the dominant habitats.

Climate is typically southern Mediterranean, characterized by hot, dry, sunny summers, and moist warm winters (only one day of heavy rain was experienced during my two trips). An important climatic feature, especially relevant to herpetological surveys, are the frequent and very strong winds. Several days during my visits were frustratingly windy with subsequent reduced reptile activity, on one occasion being so severe as to cause cancellation of ferry sailings.

MILOS (9th-12th, 18th May 1992; 5th-8th June 1993)

Tenuidactylus kotschy saronicus (Gekkonidae)

Very abundant. This diurnal gecko, formerly placed in the genus *Cyrtodactylus*, was the most frequently seen reptile on the island. Usually on dry stone walls and rockpiles, in some areas found under almost every large rock turned.

Hemidactylus turcicus turcicus (Gekkonidae)

Not particularly common, only six specimens found. Unlike the above species not seen active during daylight hours.

Ablepharus kitaibelii kitaibelii (Scincidae)

Seven adults found under ground cover.

Lacerta trilineata hansschweizeri (Lacertidae)

Occasional. Ten adults seen on walls or near gullies with adjoining bushes. Variable, both brownish and green coloured individuals seen.

Podarcis milensis milensis (Lacertidae)

Very common, more so in cultivated areas, e.g. open fields with dry stone walls, than in phrygana type habitats.

Elaphe situla (Colubridae)

One blotched adult of 86cm total length caught, near Adamas, after being seen active at 0915 hours in a dry stone wall between corn fields and olives.

Natrix natrix schweizeri (Colubridae)

A complete sloughed skin found in dry scrub next to dry stone wall, southeast of Adamas. Appeared uniform with no markings, colouration of this snake on Milos being either all black, grey with large black spots, or black with light yellow markings (Dimitropoulos, 1992).

Telescopus fallax fallax (Colubridae)

Would appear to be common. Six specimens found under rocks in dry scrub areas, near gullies, and next to dry stone walls in cultivated areas. Little variation in appearance, grey or light fawn ground colour with prominent, regular, dark brown dorsal blotches, and alternating narrow blotches on flanks. Ranged in size from 25 to 80cm total length.

Vipera lebetina schweizeri (Viperidae)

Adult male of 55cm approx. found under large rock on top of dead scrub pile next to deep, dry gully 4km southeast of Adamas. Gray ground colour with distinct, brown, transverse dorsal blotches. Two adult females, of 70 and 79cm total length, found dead on road next to corn fields near Zefiria and Provatas. A juvenile of 27cm total length was found in rockpiles bordering corn field, 4km east of Adamas. Light gray ground colour, brown crossbars on dorsal alternating with bars on flanks, tail tip light greenish yellow, venter dark gray with darker speckling. Most of the seasonal gullies favoured by this viper were seen in the west of the island, which has been recommended as a biogenetic reserve (Stubbs 1985, Corbett 1989, Mook 1986). Threatened by habitat loss through open cast mining, also by the indifferent attitude of the local authorities towards illegal collecting.

Other species occurring on Milos include *Eryx jaculus*, which is known from records dating back to the 1930's (Chondropoulos, 1989).

KIMILOS (13th-17th May 1992)

Tenuidactylus kotachyi saronicus (Gekkonidae)

Extremely abundant.

Hemidactylus turcicus turcicus (Gekkonidae)

Five specimens found at Elinika, Aliki and Klima in the south of the island. Not previously mentioned in literature for Kimilos (Chondropoulos, 1986).

Lacerta trilineata hansschweizeri (Lacertidae)

Only three specimens seen. An adult male and female were observed basking together at the same refuge in a dry stone wall with thick bushes.

Podarcis milensis milensis (Lacertidae)

Common. Like *Vipera lebetina schweizeri* this species has a limited distribution, occurring on just a few of the Cyclades islands.

Telescopus fallax fallax (Colubridae)

Two specimens found under rocks near dry stone walls bordering fields.

Vipera lebetina schweizeri (Viperidae)

An adult female of 63cm total length caught when found under large rock in dry valley stream bed with *Myrtus communis* bushes. Dark gray with indistinct markings. Normally a placid snake, flattened its head and struck vigorously while being caught. Four other adults found dead, two dead on road and two of which had obviously been killed by locals. Two of the dead specimens were found near water troughs, this species probably being attracted to water like other vipers such as *V. xanthina*.

Also recorded on the island are *Eryx jaculus*, *Elaphe stiula* and *Natrix natrix schweizeri* (Chondropoulos, 1989).

SANTORINI (19th-21st May 1992)

Tenuidactylus kotschy solerii x *T. k. saronicus* (Gekkonidae)

Found to be uncommon, only a few specimens being seen on agricultural outbuildings east of Karterados. Its occurrence on Santorini was regarded as doubtful by Frör & Beutler (1978), since when it has been recorded by Tiedemann & Häupl (1982) and also mentioned by Hingley & Castle (1991).

Hemidactylus turcicus turcicus (Gekkonidae)

Fairly common in dry stone walls and rockpiles.

Podarcis erhardii (Lacertidae)

Extremely common and widespread. A versatile lizard, equally at home on the ground in open fields or on dry stone walls. Subspecific status controversial, considered belonging to either *P. e. naxensis* or *P. e. mykonensis* (Chondropoulos, 1986).

Telescopus fallax pallidus (Colubridae)

One adult found under ground cover in a vine field. Indistinct and pale markings, superficially resembling a nominate specimen in a pre-slough condition. Usually a docile species, gave a single, innocuous bite when picked up, only the second of the nine specimens caught to do so.

An attempt was made to find the endemic skink species. *Chalcides moseri*, which was only known from a single recorded specimen (Ahl, 1937). The locality given, between Gonia and Kamari, was carefully and extensively searched with a lot of ground cover turned, resulting in no skink species being found. The species has never been recorded by other researchers since its discovery and its presence on Santorini should now be regarded as doubtful. A further unusual recording was recently made by Hingley & Castle (1991), who found a robust gecko resembling *Eublepharis* spp. the single example found was considered to be possibly an introduced specimen from the Middle East or North Africa. The only other species definitely present is *Elaphe situla* (Clark 1972, Frör & Beutler 1978). The records of *Coluber jugularis caspius* and *Elaphe quatuorlineata* (Clark, 1968) on the basis of sloughs require confirmation.

NAXOS (22nd May 1992; 18th-20th June 1993)

Mauremys caspica rivulata (Emydidae)

Two adults found active in partly dry, valley stream.

Tenuidactylus kotschy saronicus (Gekkonidae)

Common in both cultivated areas on dry stone walls and in more natural rocky areas. Eggs laid in pairs and singly found under large rocks.

Agama stellio daani (Agamidae)

A common species on dry stone walls; all of the concrete outbuildings in cultivated areas investigated were inhabited by at least one adult specimen. A very timid species, difficult to approach closely.

Lacerta trilineata trilineata (Lacertidae)

Several seen during May though no specimens were seen in June. Clark (1989) states that in summer this lizard becomes especially shy, secretive and difficult to observe. It was generally found in habitats with dense vegetation and bushes bordering cultivated areas.

Podarcis erhardii naxensis (Lacertidae)

Very common. Probably as a result of the richer vegetation on this island, compared to most others investigated, this lizard showed an increased tendency to be bright green dorsally with only a few brown coloured adult males seen.

Eryx jaculus turcicus (Boidae)

One adult found under rock in rock scree on dry, scrub covered hillside south of Naxos town.

Elaphe quatuorlineata muenteri (Colubridae)

A distinctly blotched juvenile of 35cm approx. was seen at the base of thick bushes next to agricultural outbuilding. Active at 1000 hours, temp. 23°C.

Vipera ammodytes meridionalis (Viperidae)

One 42cm adult female caught when seen active at midday on same hillside as *E. jaculus*. Other species which are present, not found, include *Hemidactylus turcicus*,

Ablepharus kitaibelii, *Typhlops vermicularis*, and *Natrix natrix persa* x *N. n. schweizeri* (Chondropoulos, 1986, 1989). Also there is a rather doubtful old record (Werner, 1938) of *Ophisaurus apodus*, the only record of this species on the Cycladean islands.

AMORGOS (23rd May – 2nd June 1992; 21st-24th June 1993)

Bufo viridis (Bufonidae)

Several adults found under rocks in valleys with small pools, in irrigated fields and in a dry stream bed. Large specimens up to 8cm total length found.

Rana ridibunda (Ranidae)

About a dozen individuals present at each of the small remaining pools in gullies of hillside valleys. Found in both May and June. This and the above species on Amorgos, were the only amphibians found on the two trips.

Tenuidactylus kotschy solerii x *T. k. saronicus* (Gekkonidae)

Extremely common, the most frequently seen reptile on the island. A few uniform gray specimens seen, the vast majority typically marked with dark gray crossbands.

Hemidactylus turcicus turcicus (Gekkonidae)

Very common. Sympatric with *T. kotschy* and *Podarcis erhardii*.

Ablepharus kitaibelii kitaibelii (Scincidae)

Common, particularly so in leaf litter of shady orchards and olive groves.

Podarcis erhardii amorgensis (Lacertidae)

Very common. Ventral surface of captured adult males variable, greenish to bright yellow, pale to bluish green, a few specimens bright orange, the majority being greenish white. Dorsal colouration also variable, uniform green upper and brown lower dorsal with light dorsolateral stripes, or darkly reticulated.

Eryx jaculus turcicus (Boidae)

Found to be very common and widespread during May with twenty individuals being found, usually under large rocks. In June only one specimen found, most of the rocks turned being too hot underneath to be used by snakes as cover. Largest specimen found 58cm total length, average total length of adults found being 42cm. Extremely docile. During two cloudy days in May several specimens were found active during midday. Although predominantly nocturnal, diurnal activity in this species has also been noted by Clark (1986b).

Elaphe quatuorlineata (Colubridae)

One adult of 107cm total length caught while active at 1745 hours, temp. 21°C, light cloud, in olive field adjoining well vegetated gully. In contrast to the mainland *E. quatuorlineata* I have caught this snake was very aggressive, flattening the head, hissing and striking repeatedly. Longitudinal stripes darker and more prominent than in typical Cycladean *E. q. muenteri* adults, Clark (1990) has suggested that Amorgos specimens may warrant subspecific status.

Also on record for Amorgos is *Telescopus f. fallax* (Werner, 1938), and the endemic ratsnake *Elaphe rechingeri*. This snake differs markedly from *E. quatuorlineata* in lacking the distinctive striping and in having a lower subcaudal count (see Clark, 1971, 1990). Originally described as a distinct species by Werner in 1932, this snake continues to be erroneously referred to in present day literature as a subspecies of either *E. quatuorlineata* or *E. longissima*.

FOLEGRANDOS (9th-12th June 1993)

Tenuidactylus kotschy (Gekkonidae)

Would appear to be uncommon, only five adults being seen in dry stone walls and on concrete outbuildings. Not previously recorded on Folegrandos (Chondropoulos, 1986).

Podarcis erhardii naxensis (Lacertidae)

Very common and widespread.

Eryx jaculus turcicus (Boidae)

Two specimens found under rocks in olive fields.

No other species have been recorded on the island.

SIKINOS (13th-17th June 1993)

Tenuidactylus kotschy saronicus (Gekkonidae)

Fairly common and widespread.

Hemidactylus turcicus turcicus (Gekkonidae)

Common in dry stone walls, rockpiles. Eggs visible in oviducts of captured females.

Podarcis erhardii naxensis (Lacertidae)

Very common. As on most islands investigated, variable in appearance. The majority of adult males were green on upper dorsal, brown on lower dorsal with prominent dorsolateral stripes. Females usually uniform brown with light dorsolateral stripes.

Vipera ammodytes meridionalis (Viperidae)

Would appear to be fairly common, seven specimens found. Cycladean specimens tend to be much smaller than mainland specimens, the largest adult caught on Sikinos being only 37cm total length. Five had the typical 'zig-zag' pattern, one specimen seen had a straight edged dorsal stripe as is illustrated for Sikinos specimens in Bruno (1985) and Dimitropoulos (1992). The other specimen found being intermediate between 'striped' and 'typical'. Often found on rocky hillsides with *Pistacia lentiscus* bushes.

The only other species recorded on Sikinos is *Eryx jaculus* (Chondropoulos, 1989).

EPANO KOUFONISSI (25th-28th June 1992)

Tenuidactylus kotschy solerii x *T. k. saronicus* (Gekkonidae)

Common and widespread.

Hemidactylus turcicus turcicus (Gekkonidae)

Common in dry stone walls and rockpiles.

Podarcis erhardii amorgensis (Lacertidae)

Common and widespread, the majority of adult males being uniform brown dorsally.

Vipera ammodytes meridionalis (Viperidae)

Would appear fairly common, five specimens being found, mainly on rocky hillsides in the north of the island. During capture an adult, found under a large rock, showed signs of 'thermal shock' shortly after being moved onto the sunbaked open ground, going into convulsions and soon appearing limp and lifeless. It was quickly lifted back into shade and water poured over it to reduce body temperature, whereupon it soon recovered. Temperature under the rock was 16°C approx. the open ground substrate temperature being in excess of 35°C.

Also recorded on Epano Koufonissi are *Ablepharus k. kitaibelii* and *Eryx jaculus* (both species referred by Lotze, 1973).



Plate 1. – Juvenile *Vipera lebetina schweizeri*. Milos



Plate 2. – *Podarcis erhardii naxensis*. Folegrandos

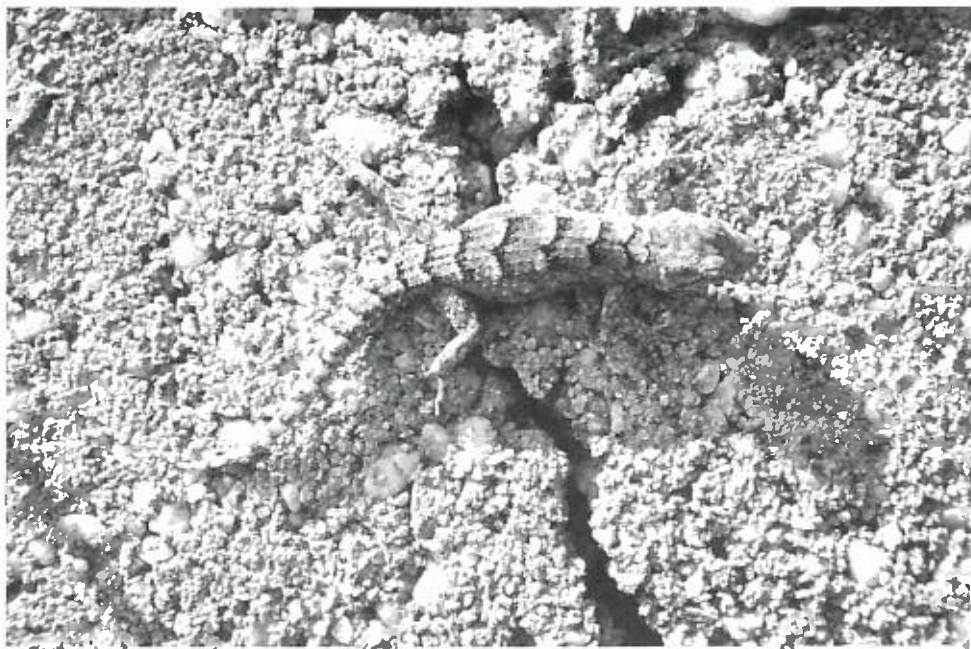


Plate 3. – *Tenuidactylus kotschy*. Folegrandos



Plate 4. – *Eryx jaculus turcicus*. Naxos

SCHINOUSSA (29th-30th June 1993)

Tenuidactylus kotschy solerii x *T. k. saronicus* (Gekkonidae)

Very common and widespread.

Hemidactylus turcicus turcicus (Gekkonidae)

Several specimens found, presumably fairly common.

Podarcis erhardii naxensis (Lacertidae)

Common, though less so than other islands with *P. erhardii* investigated.

Other species on record for Schinoussa include *Eryx jaculus* (Lotze, 1973), which according to locals I spoke to is very common. Lotze (1973) also listed *Elaphe quatuorlineata* amongst the islands species, based on local information. However, the locals I spoke to seemed unfamiliar with this snake and, though its occurrence is certainly possible, it is likely to be uncommon.

NOTE: Subspecific status of *Tenuidactylus kotschy* and *Podarcis erhardii* is as given by Chondropoulos (1986) though, as Chondropoulos points out, the subspecific status of these taxa is often controversial and in need of review.

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PSAMMODROMUS MICRODACTYLUS IS NOT EXTINCT

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The genus *Psammodromus* includes four species which live in Southwest Europe and Northwest Africa (Arnold 1989):

- *Psammodromus algirus*, the most widespread species, is found all over Mediterranean Maghreb (Tunisia, Algeria and Morocco), in most of Iberia, in Western Southern France (Languedoc and Roussillon) and in some mediterranean islands (particularly Conigli, near Lampedusa (Bohme 1981), Galita, Tunisia (Lanza and Bruzzone 1960), Isla Grossa, near Cartagena (pers. obs.) and Medes Islands, Spain (Pascual 1984)).
- *P. hispanicus*, a european species which inhabits the whole of Iberia and the south of France (Languedoc, Roussillon and Provence) (Salvador 1981).
- *P. blanci* is a Maghreban endemic, found only in the Hauts- Plateaux and the Atlas Tellien, from Northeast Morocco to Tunisia (Bons 1967, Welch 1982).
- *P. microdactylus*, endemic of Morocco, is very similar to *P. blanci*. It was known from a few localities in the Tingitan peninsula, Middle Atlas and Western High Atlas. The systematic relationships of these last two have often been questioned. Some authors have suggested that they could be conspecific (Doumergue 1901, Werner 1929, Mellado and Dakki 1988) or belong to the same super-species (Pasteur and Bons 1960).
- *P. microdactylus* is distinguished from *P. blanci* by minor differences of scalation, less contrasted pale lateral lines, and, especially, by the green colouration of the dorsal parts of the adults, a character which is not found in any other species of *Psammodromus* (see Plate 1).
- *P. microdactylus* was first described by Boettger in 1881 (*terra typica*: between Tanger and Tetouan (loc. 1). Since then, there have been few reliable records of this lizard (see Fig. 1).
- Tanger - Vaucher coll. in Boulenger 1889 (loc. 2).
- Tanger, 1902 - Mr. Buchet coll., collections of the Museum National d'Histoire Naturelle de Paris (loc. 2).
- Jbel Zalagh, near Fes - Werner 1931 (loc. 4)
- Sefrou - Werner 1931 (loc. 6).
- Taza - Werner 1931 (loc. 5).
- Azrou, (Middle Atlas), 1200m a.s.l. - Werner 1931 (loc. 9).
- Tadlest, 2250m a.s.l. (High Atlas) - Werner 1931 (loc. 12).

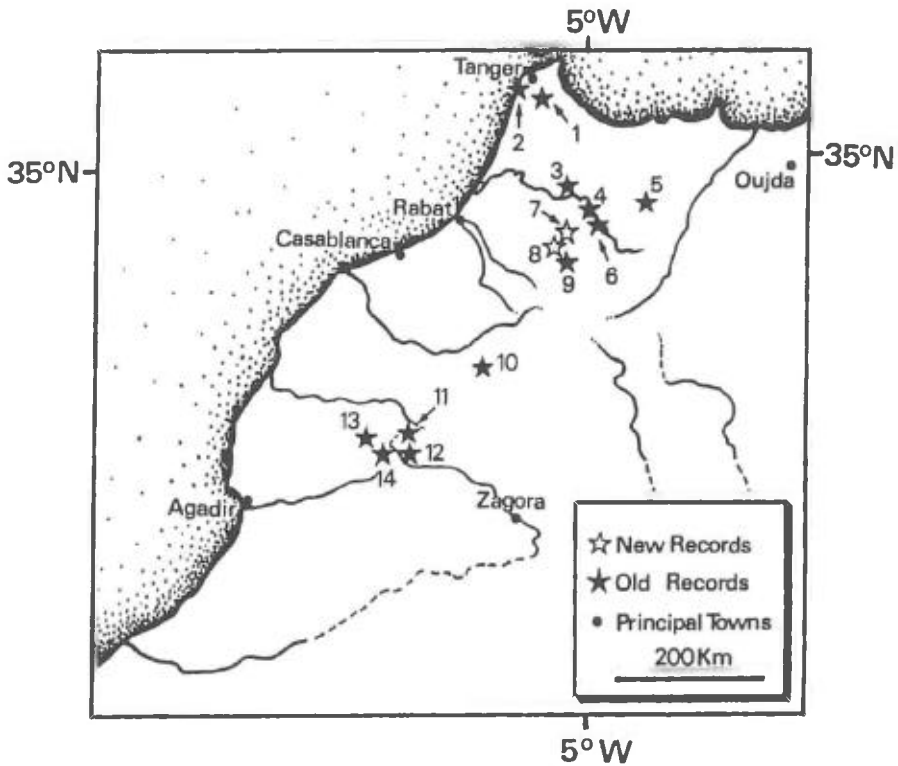


Fig. 1: Reliable published records of *Psammodromus microdactylus*. Localities listed in the text.

- Aremd (=Around), 1900m a.s.l. (High Atlas) – Werner 1931 (loc. 13).
- Jbel Tichka (High Atlas) – Werner 1931 (loc. 11).
- Western part of the Toubkal (High Atlas) – Lepiney 1938 (loc. 14).
- Between Afourer and Bin el Ouidane (High Atlas), circ. 1964 – Bons 1967 (loc. 10).
- Karia ba Mohammed, circ. 1964 – BONS 1967 (loc. 3).
- Balcon d'Ito, 1964 – Bons 1967 (Plate 1) (loc. 8).
- Photograph taken by Dr. Perret, without any indication of the locality, in Grzimek 1971.

Moreover, the observation by one of us (PG) of a specimen 5 km north of Dayet Ifrah was published earlier (Geniez et al. 1991), although the determination was considered as doubtful.

There had been no proven sightings since, despite active prospection (I. De Lay Riva, M. Geniez, Ph. Geniez, L. F. Lopez-Jurado, J.A. Mateo, J. Mellado, J.A. Valverde verbally). Consequently, the species has been supposed to be extinct (G. Pasteur verbally).

On 3rd October 1992, we caught and photographed 3 young specimens and saw an adult at the Balcon d'Ito (loc. 8), where we had already searched for this species in previous years, following the indications of J. Bons, but without success. All four

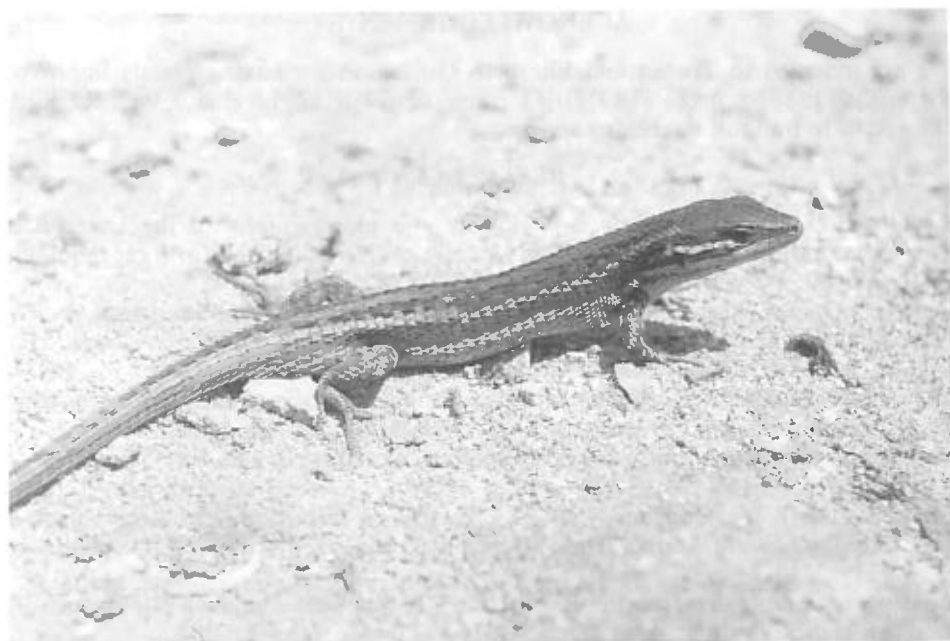


Plate 1: *Psammodromus microdactylus*, adult male, Balcon d'Ito (loc. 8), 1964. Photo Jacques Bons.

specimens were found sunning between 8 and 9 G.M.T., among tufts of Palmetto scrub (*Chamaerops humilis*) on stony calcareous slopes overgrazed by cattle, just east of the road P21 between Azrou and El Hajeb. The species seemed to be scarce at the time we were looking for it since we all three searched between 7 and 11 G.M.T. but found only four animals. The landscape was a plateau with few cultivated fields and large areas of short grass. This habitat in Morocco is called "erme" (cultivated erme) (Ionesco and Sauvage 1962).

The only other lacertid species found alongside *P. microdactylus* was *Acanthodactylus erythrurus atlanticus*. Other reptiles included *Agama bibroni*, *Macroprotodon cucullatus brevis*, *Coluber hippocrepis* and *Malpolon monspessulanus monspessulanus*. On the other side of the road, on a flat area with more grass and still a few *Chamaerops humilis*, we found *P. algirus*.

The same day, we saw another young *P. microdactylus* in a new location, along the road S310, 3 km north of El Hajeb (loc. 7). The habitat was a steep earthy slope with a dense cover of *Chamaerops humilis* on a small calcareous hill. *P. algirus* was found alongside.

Consequently, *P. microdactylus* should be searched for all over the plateau between Azrou, Fès and Immouzer du Kandari, specially among tufts of *Chamaerops humilis*, as well as in any area in Morocco where this plant grows. It may also be found in uniform areas of short plants (erme) (J. Bons verbally).

At present, we considered this species as rare and feel that, although it is not officially protected, it should not be collected except in very limited numbers for proper scientific studies. The first measure of protection that should be adopted is habitat conservation: preservation of areas of *Chamaerops humilis* against ploughing and overgrazing, but we must keep in mind that grazing is probably necessary to maintain the habitat as it is and give the best chance of survival to this rare endemic.

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TECHNIQUES AND PRINCIPLES OF HERPTILE PHOTOGRAPHY

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INTRODUCTION

Since its invention, photography has been an important tool in all branches of science. I specialise in wildlife photography, of which herptile photography is a particularly rewarding field. Herptiles represent a rich range of wild subjects, sufficiently unique to demand a specific approach and exact techniques. There are many levels at which the subject can be tackled; this Bulletin being quite a technical publication, a fairly advanced knowledge of herpetology has been assumed but the photographic aspects are covered from the basics.

CAMERAS

The first consideration to be made is the camera body itself. Cameras are classified by their film format, 35mm being the size most commonly used although there are 'roll-film' and 'sheet-film' cameras which take larger sizes and 'disc' and 'cartridge' cameras which use smaller film. Most professional photographers accept the 35mm camera as offering the best compromise between image quality and ease of use. There are two broad categories into which all 35mm cameras fall – compact and single lens reflex (SLR). Satisfactory results can be achieved with the simpler compact and nowadays there are some quite sophisticated models available. However, with an SLR, what you see through the viewfinder is nearly 100% what you get. With a compact there is more of a difference. This effect, known as parallax error, is accentuated in close-up work, which forms the majority of herptile photography. At a more advanced level, SLRs are really the only alternative but, since they are rather bulky, I always keep a small, pocketable compact on me in case an unexpected opportunity arises. Neither the make nor the model of your camera particularly matter although those best known and higher in the price range are likely to be better – you get what you pay for.

LENSES

Of more importance than your choice of camera body is your choice of lens – the lens is the image. With a compact you are restricted to the standard option (albeit with macro mode on some of the better models). However, with SLRs the choice available is much greater. Lenses differ in what is termed their 'focal length'. Fixed focal length lenses are reputed to be of higher quality than zoom lenses which offer a spread of focal lengths although, due to recent advances, the difference is now minimal. I personally prefer zooms for the assistance they provide in placing your subject within the frame. However, zooms are only made for the popular ranges and it is rare to find a zoom for some of the specialist groups of lenses. For herptile photography your primary lens should be a macro as it will enable you to photograph at up to life-size reproduction ratios, which is imperative for the smaller species. These vary in focal length from 50mm to 200mm. Macros around 50mm require an extremely close approach to the subject, entailing obvious problems, but they are compact and offer completely natural perspective. Macros around 200mm permit one to be a fair distance away but are difficult to handle and have a noticeable effect of flattening perspective. I favour a 100mm lens for a good compromise although



Plate 1. – Grass Snake *Natrix natrix*



Plate 2. – Green Lizard *Lacerta viridis*



Plate 3. – Marbled Newt *Triturus marmoratus*



Plate 4. – Midwife Toad *Alytes obstetricans*

I do have both a 50mm and a 200mm to cover me for all eventualities. As a second lens, a telephoto (between 80mm and 300mm) is useful for the more timid species or those in physically inaccessible locations. Extreme telephotos (from 300mm to 600mm and beyond) are even more useful in this respect although often prohibitively expensive. After a telephoto, a third lens for your set could be a wide-angle (between 20mm and 35mm) which gives you the same view of the world that most herptiles have, although at the wider end of the scale distortion creeps in and can be misleading. So-called 'standard' lenses (from 35mm to 80mm) have no place in herptile photography other than to record colonies or for general habitat-shots.

FLASH

Light is the medium of photography, and being able to control it is as important as a brush is to a painter. Basically, if your camera has no built-in flash (professional ones usually don't) then buy the best you can afford. They are invaluable for freezing subject movement, enhancing clarity and contrast and for promoting correct colour rendition. With many cameras, several flashes can be connected simultaneously, enabling perfect night shots, of mating toads, for example. Specialist flashes are also available, such as ring flashes, which fit directly onto the end of a macro lens, thus providing absolutely even frontal light coverage and eliminating unsightly shadows (especially if equipped with modelling lamps). They also create an attractive catch-light in the eyes of the animal, particularly those with big, round pupils; this can really bring a picture to life. As the perfect partner to my macro lenses, I find one near essential.

SUPPORTS

The last items of hardware to be addressed are supports. There are many types available but they all have the same aim – to keep the camera motionless and thus eliminate camera shake. There are a few hand-held supports but the majority of supports are static; the most stable of all being the tripod. These come in a vast array of different designs. It is important to pick a tripod which offers you the best compromise between stability and weight. Once this has been decided, then attention can be turned to other gadgets such as built-in spirit levels. For low subjects, which often includes herptiles, a tripod with a reversible centre column is ideal or, if mobility is important, a small 'table-top' tripod or ground spike. With these lower supports, a right angle viewfinder attachment will save you having to stoop down. Personally, I have one large tripod (2m) in a case slung under my camera bag and a 30cm table tripod folded up in a side pocket but, with so many choices, the main thing is to pick a support that best suits your requirements.

FILM

The essence of the photographic process is, of course, the film. Nature is above all colourful. This limits the use of black-and-white film to subjects which have extremely strong pattern or texture or to publications such as newspapers which work mainly in monochrome. With colour, there are two basic types of film – negative (also known as print) and positive (also known as slide, transparency or reversal). Positive films undoubtedly produce better quality images than print films, both in tonal rendition and general portrayal of reality. The key difference between all films is their speed. These go from about ISO (International Standards Organisation) 25/15° to 1600/33°, but as the film becomes faster (tends to 1600/33°) image resolution is lost and this becomes noticeable above 200/24°. It is best to use slower films unless lighting conditions restrict you to faster ones. I use Kodachrome 25 for amphibians in daylight, Fujichrome Velvia 50 or Kodachrome 64 for reptiles and Ektachrome 200 or Kodachrome 200 for amphibians at night, when I don't have my full complement

of flashes with me. Negative films worth consideration are Kodacolor Gold II and the new Fujicolor Super 6, a recent breakthrough with outstanding resolution. However, as everyone perceives colours differently, it pays to experiment with others before deciding on a limited number of favourites.

EXPOSURE

Two variables go to make up a photography – exposure and focus. Exposure is a product of shutter speed and aperture value. Under any one light condition, each can be varied in indirect proportion to the other but, to produce correct exposure, the product must remain unchanged. Different films have different ‘exposure latitudes’, that is to say their tolerance of inaccurate settings. Positive films have very narrow exposure latitudes and, when using them, it is better to err on the side of underexposure as this will produce more striking colours. Focus concerns the area of the photographic image that is sharply recorded, the maximum possible with any one lens under any one pair of exposure settings being known as the depth of field. Cameras can be autofocus, manual focus or switchable between the two. Automatic systems are obviously faster but the simpler mechanisms are not always efficient as they are easily confused. However, on the top cameras autofocus is virtually perfected and I rely heavily on my camera’s constant focusing system (up to 6 times per second); it can keep track of the fastest species. Focusing is critical when a large aperture (small number) is selected because depth of field is shallow. A small aperture (large number) means a greater depth of field and less emphasis on focusing but a slower shutter speed is needed which can cause blurring, created by either camera shake or subject motion. The depth required depends on the exact circumstances and having a depth-of-field check button on your camera is useful to help gauge just enough depth whilst still allowing a sufficiently fast shutter speed; some cameras, notably Canon, even have a special mode to assist with this decision. To give you a rough indication you are unlikely to need a shutter speed faster than 1/250 second.

THE SHOOT

It should be obvious that the usual rules for the handling of herptiles are still applicable when photographing them. However, I have seen many photos with signs of animal abuse. Anyone interested in wildlife photography must abide by the Nature Photographer’s Code of Practice, published by the Nature Group of the Royal Photographic Society. ‘The welfare of the subject and its surroundings is more important than the photograph’. As wildlife photography becomes increasingly more commercial, I am concerned that there may be a tendency for some to forget this most vital philosophy. Both the public and the media generalise and we mustn’t let individuals corrupt the profession as a whole. The best method of photographing herptiles is without any physical contact whatsoever. However, if capture is necessary, the stress to which the specimen is subjected must be kept at a minimum. With reptiles, I place them in a container with a soft, dry substratum and leave them in a dark, quiet place. When the specimen has cooled, I take it out and photograph it as it warms up. A cold reptile is easier to handle but a warm one looks more lively so I aim for the best compromise by photographing it until it becomes too warm to control. I then release it in the exact same spot it came from. Temperature makes little difference to amphibians and they are generally more docile anyway. I usually stalk them and only capture one if I need to move it to an area of ground with less obstructions to the lens. It is important to ensure that the background chosen is as completely natural as possible; an obviously artificial set-up can ruin a photograph. It is also important to consider composition carefully. The main point here is to avoid central placement of the subject which can be very dull. A good guide to

this is the 'law of thirds'. In your head, divide the scene, with lines, into thirds, both horizontally and vertically, and try to place your key subject at one of the four intersections.

CONCLUSION

So why photograph? I can think of four good reasons. For me, the main reason is the power my camera gives me to raise public awareness of wildlife, fostering interest in the species with whom we share this planet, to effect a change in people's attitudes. All of this helps to present conservation efforts. Secondly, photographs provide accurate scientific records of species which may be facing imminent extinction or give proof of newly discovered species or behaviour. High-speed photography can show, frame by frame, in perfect detail, events too fast for the naked eye to register, for example a chameleon catching a fly on its tongue. Thirdly, photography is the only method of conducting systematic research, totally without bias, for example a survey of head scale variation in lizards. Finally, photography can add a fascinating and absorbing new dimension to herpetology, an interest which we all share whether as a profession or as a hobby.

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Also wanted contact with anyone keeping *Triturus dobrogicus*, *T. karelinii* or *T. italicus*. Tel: Pat Wisniewski 0704 895097 (evenings).

For sale: Captive-bred Alpine Newts, metamorphosed 1992. Simon Townson
Tel: 081-531 1378.

A SHORT NOTE ON THE BEHAVIOUR OF *CORONELLA AUSTRIACA* ON AN ATYPICAL DORSET SITE

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INTRODUCTION

Despite being brought up on the South of England, I had never looked for reptiles on heathlands and therefore had never seen either *Lacerta agilis*, the Sand Lizard, or *Coronella austriaca* the Smooth Snake in Britain. I decided to remedy this summer, and spent two weeks between 24 July and 7 August at Corfe Castle in the Isle of Purbeck, Dorset. I did not have a permit and thus had only limited access to such famous heathland reserves as Arne or Hartfield Moor. This being the case, I thought it would be interesting to explore the surrounding countryside in the manner that I would a less herpetologically famous land; examining the immediate environment on foot; peering into hedgebottoms; turning stones and scanning sunny banks.

The weather was generally overcast, cool and occasionally wet; what little sunshine there was occurred early in the morning, with the exception of the second last full day there, the fifth of August, which was warm and sunny with temperatures approaching 22 degrees centigrade.

INVESTIGATION

Apart from two sightings of *Lacerta vivipara* (Common Lizard) on the disused railway track running north from Corfe Castle, nothing worth noting occurred until the evening of Tuesday 27 July, when after a fruitless day trudging in a muggy drizzle, we were returning down the road from Arne. The hedgerows were soggy with rain, and the only apparent animals present were several large orange slugs, *Arion ater*. Suddenly I stopped in my tracks, for high up on the road bank was a classically coiled Smooth Snake, about 60 cm. long, glistening in the rain. She was very sluggish, and allowed me to stroke her for some time before slowly gliding away. The time was just after quarter past six. Behind the hedge was a rough uncultivated patch of common land which sloped down to the north bank of the River Corfe. I revisited the site the next evening, but only found a Slow Worm (*Anguis fragilis*) and a Common lizard.

On the Thursday I saw my very first English Sand Lizard, a female, at about 14.30 hours on a road bank near Hartfield Moor and another Slow Worm forty minutes later at the Smooth Snake site. The following day I found another large and interestingly marked female Sand Lizard on the other side of the road from the Smooth Snake site, basking in dead leaves in the bottom of a hedge which separated the road from a cow field, some considerable distance from the nearest scrap of heathery heath.

The following week, on Wednesday 4 August I again passed the *Coronella* site at about 17.45 hours. The weather was dull and warm, and there had been drizzle earlier. The Smooth Snake was there, in exactly the same place that she had been before, still very sluggish, and remained there until 16.35 hours. After first spotting her and before seeing her make her final exit, I walked a little way down the road and found a dank and muddy lane, which passed through the wooded south bank of the River Corfe. Between it and the water was a massive pile of old bricks and stones backed with brambles, hawthorn bushes and silver birches. Under a large

piece of corrugated iron I found a neatly coiled male Adder (*Vipera berus*) and under adjacent rubble were two Slow Worms and a Common Toad (*Bufo bufo*).

Coming back the following morning with the family, we found the Smooth Snake in the same place at 11.40 hours. But unlike previous sightings, presumably because the weather was fine and warm, she was very active and alert, disappearing from view with considerable speed. We then went down the lane and lifted the sheet of corrugated iron to see whether the Adder was still there. It was not but there was an adult Smooth Snake curled up with a Slow Worm. Within the next ten minutes we had spotted two more Smooth Snakes and three Adders moving around the stones. We also saw a female Sand Lizard. One of the Smooth Snakes slowly climbed up into a bramble bush and rested with its head and neck held vertically in such a way that it was perfectly camouflaged.

We returned in the evening to find the Adder back under the corrugated iron at 18.50 hours, and yet another Smooth Snake slithering around the rubble about two metres away.

DISCUSSION

Before this summer I had only ever seen two Smooth Snakes; one in Germany and one in France. When I came to Dorset I expected to see few if any, and those on the sandy heaths which is their designated habitat. Instead I saw five Smooth Snakes, one perilously exposed on a road side bank, and the other four sharing a rubble heap in a damp tree-shaded spot with Adders, Slow worms, one Toad and a Sand Lizard.

Neither of the continental *Coronella* that I saw was found on heathland; the German specimen was on a road bank beneath a field, and the French one lived in rubble on the edge of a road bridge crossing a river. Perhaps subtle changes in the climate are enabling both Smooth Snakes and Sand Lizards to leave the environmentally safe but over-crowded Dorset heathland reserves, and colonise adjacent habitats of a kind resembling those of their European counterparts. Or perhaps the stone pile was a hibernation site to which they were returning prematurely because of the unusually cold and wet summer.

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SALAMANDRA SALAMANDRA, THE EUROPEAN SALAMANDER

Sloughing techniques of an adult and an immature compared

BERNARD GOOCH

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A captive salamander was seen to slough only twice in nearly twenty-five years, presumably because this usually happens at night. On neither occasion was the full performance witnessed, but each time it swallowed its "skin", really the outer layer of the epidermis.

However, one of its own young, when fifteen months old and three inches long, was observed literally from head to tail. A bubble of moisture on the young salamander's nose and chin suggested that something unusual was about to occur. Indeed during the next ten minutes it became increasingly clear that the little animal was trying to split the skin all around its mouth to make an opening through which it could eventually crawl. To do this it blew out its cheeks until the entire head looked swollen, it yawned and once opened its mouth far wider than the most prodigious yawn. To go through the mouth-hole it pushed the sloughed skin back over its head by rubbing it against some moss, and appropriate bending movements enabled it to pull its front legs out as from a glove. More rubbing movements worked its old garment back to the hind legs which were pulled out in the same way as the front. With only the tail to free, the young salamander then walked round and round to the right until its head overlapped the tail, but without ever touching it. Friction with the moss freed this appendage, whereupon the little animal walked away, leaving a perfect pair of tights on the ground.

As to the adult, on one occasion the end of the operation was seen as the salamander gulped down the last two or three mouthfuls of the sloughed skin. On the other everything was observed almost from the beginning except that the entire head was already freed, that is projecting through the mouth-hole. One shoulder and the front legs were then freed as described for the young salamander. The latter, got the old skin back from its front to its hind legs by rubbing against some moss. The adult, however, freed this area by rhythmic muscular, or peristaltic, movements. Waves of expansion and contraction slowly followed one another towards the tail, the skin slipping back until it reached the hind legs which were cleared in the same way as the front.

The tail at first posed a problem as the salamander tried to take the tail skin in its mouth. At last it succeeded, but the tip inch or so would not pull free. This led to a strange tug-of-war, as the animal, turning away from the tail, got the rest of the old skin across its shoulders and pulled with might and main. At last the tip of the tail came free. Immediately the animal opened its mouth wide, whereupon the sloughed skin proceeded to go down its throat, apparently of its own accord, pulled by the peristaltic movements of the throat muscles. As the last inch or two of the skin reached the salamander, it closed its mouth and gulped them down.

Shortly after the young salamander was seen changing its skin, it was found dead and the adult in convulsions exactly one day after a small Tree Frog (*Hyla arborea*) was put in with them for lack of other space. The adult recovered after being washed in running water for several minutes. Thus any chance of watching a young salamander's sloughing technique evolving into that of an adult was destroyed by the unforeseen consequences of keeping these two species together.

LETTERS TO THE EDITORS

CONSERVATION OF THE GOLDEN TOAD

The recent article on golden toads by Keith Harding, in Bulletin No. 44, made interesting reading. While I agree with much of what the author has to say, there is in my opinion reason to be a little cautious about his condemnation of scientific attitudes and the inadequacy of conservation thus far.

The case of the golden toad has certain parallels with that of the natterjack toad in Britain. Both species evidently rely on ephemeral pools, and thus appear to live permanently on the brink of disaster. Back in the 1970s, when natterjack conservation really got going, major efforts were put into doing exactly what Keith Harding recommends for golden toads: the rescue of tadpoles from desiccating ponds, and the rendering of the breeding ponds more permanent (usually, in the natterjacks' case, by deepening). It subsequently became clear not only that these measures had little beneficial effects on natterjack populations, but that in the case of pond deepening they could actually damage the toads' prospects. This is because, as we might reasonably have guessed, natterjacks have been adapted to use ephemeral ponds for millions of years. Their tadpoles cannot survive competition from species adapted to deeper, permanent ponds nor predation from the usually larger numbers of invertebrates found in such ponds. The effect of deepening was all too often the opposite of what conservationists wanted: natterjacks abandoned them, and were replaced by common frogs and toads. For all we know, similar dangers might await golden toads if their pools were also made more permanent. Species like the natterjack have evolved to suffer regular, total losses of their progeny; this is compensated for in occasional good years, when the water regime chances to be exactly right and huge numbers of toadlets emerge. One consequence of this lifestyle is that adult population size may oscillate dramatically between very low and very high numbers, a natural feature which nevertheless causes hearts to flutter among conservationists. Species like this probably are at greater risk of extinction than more stable ones; someday the nadir may go below the point from which recovery is possible.

I would not wish to sound either uncompassionate or complacent. Most people involved in natterjack conservation, including myself, still move natterjack tadpoles from drying ponds to safer places when the need arises but not in the belief that it is a significant conservation measure. It has taken a lot of research to discover what really needs to be done for natterjacks, and I wholeheartedly agree with Keith Harding that this needs to be done for golden toads too. There is no use generalising about amphibian declines; specific cases need to be properly investigated. For the golden toad, conservation measures may or may not be urgent but in a relatively pristine habitat and no evidence of human interference with the water table (as far as I know), the chances for natural recovery should be high. I would, however, also agree that a prudent measure would be to try and establish a captive-breeding population of golden toads. Even in this, though it must be realised that captive breeding can never be an option for all endangered species (there are just too many to cope with) and has various other risks (inbreeding etc.) associated with it.

Like Keith Harding, I very much hope that something can be done for the golden toad. It is, however, of crucial importance to make sure that it is the *right* thing.

Trevor Beebee

SNAKES OF THE NORTHERN ISLES?

Dear Sirs,

Let me first, declare my colours. I am not a herpetologist. In fact I possess a dislike to frogs and toads which borders on the phobic; whilst being perfectly happy with the rest of the fauna. However, I do have a son who is smitten with snakes in particular and is a member of the Young Herpetologists Club (The Junior Section of the BHS). It was while in conversation with Colin Fitzsimmons, Education Officer BHS, who runs the Y.H.C., that I let slip that our summer holidays were to be on the Isle of Skye. The might of the Y.H.C. swung into action. Very soon a private visit to the Skye Serpentarium, and meetings with the owners, Catherine and Alex Shearer, had been arranged for the first Tuesday evening of our holiday. The price for the V.I.P. treatment being an article by my son for the Y.H.C. Newsletter in Y.H.C. Newsletter Number 43, and the half promise of some words from myself to be used by the Y.H.C. to promote it's support of it's members and Herpetology in general. I am conscious that many of the articles written about Herpetological matters are learned, even erudite. This offering will not be so. All I hope to show is how the interest of two herpetologists has grown into an attraction in the Isle of Skye Tourist Industry already commanding over 10,000 visitors a year in less than two years since opening; a refuge for animals siezed by customs as part of CITES and, I feel, an object lesson to any Serpentarium, Zoo or Exhibition on how, even on a small scale fascinating, and beautiful animals can be shown to best advantage.

When Catherine and Alex moved to Skye just over two years ago, bringing their collection of lizards, snakes, dogs etc with them, it was not with the express intention of starting the Serpentarium. However, as is so often the case, chance took a hand. The combination of "where do we keep them?" and the availability of an old mill a few yards from their home provides the germ of the idea of a display. As Catherine says, their objective is to "soften attitudes" towards snakes and reptiles.

Judging from the tale of official barriers, public meetings and planning battles, there is plenty of softening needed – although happily the Serpentarium is now an accepted and valued member of the local community. However, it was not so in the beginning. The application for a Zoo licence, with notices published in local and national papers brought forth a stream of objections. A public meeting was called – and one objector actually turned up !! The planning meeting was more fruitful in terms of the crop of objectors it produced. It is a sad fact that many objections were rooted in fear and misunderstanding of snakes and included even oblique biblical references from more traditionalist stalwarts of the area. However, alls well that ends well. Permission was given – but unfortunately too late to catch the first seasons July and August holiday traffic. Enthusiasm is not enough to overcome the commercial realities and the difficulties in starting any business enterprise were compounded by the delay and the Shearers still face an uphill effort to build the visitor members sufficiently to make the Serpentarium fully economically viable.

So what today does the Skye Serpentarium have to offer it's visitors? From the outside, the old mill has that rugged, dour, appearance of much of the natural habitat and human fauna of Skye. Inside it is a revelation. The vivaria have been constructed by local craftsmen to the Shearers specification. They are light, roomy and well equipped with climbing and hiding areas for all the reptiles. Perhaps we were just lucky but on all 3 of our visits most of the animals were easily on view and happily cruising

through the branches or climbing in rocks. There is a lesson here for many a bigger establishment where the visitor is often faced with a tank, a label and an air of "oh yes! – well where is it?" About 2/3rd of the available space is now fitted out, with the remainder occupied with more mundane but still very servicable vivaria.

There are about 40 animals on display with plans to extend this to perhaps double as space, finance and time allow. The Shearers have a plentiful supply of future exhibits back in the house. I was particularly interested in the results of corn snake breeding of a double recessive female with an albino (Snow Corn) male. The hatchlings from a clutch are a mixture of Amelanistic (the Red Albino with no black pigment), Anerytheristic (the black and silver coloured black albino, no orange pigment) and full albino. This should provide a striking lesson in genetics and breeding to the many school parties and youth groups as well as families that visit the Serpentarium.

There is a strong sense of education, partly to keep the Serpentarium within Skye's overall tourist policy of avoiding the sensational or the "freak show" element but mainly because the exhibition is run and manned by enthusiasts who can speak so knowledgeably about all aspects of the Serpentarium.

So, what is on display? It is difficult not to make this read like a catalogue but here goes.

Tank One has a 10 year old Bearded Dragon and three quite rare Spiny Tailed Agamids. These have excavated their own caves, carefully ignoring the earthenware pipes fitted for their benefit and to keep them on view to the visitors.

Next, a pair of Northern Pine Snakes which have bred successfully for the last two years. These rough scaled snakes can inflate their bodies with air to produce a very loud hiss. They are a very strong and aggressive snake and would not be ideal for any beginning herpetologist.

Conversely the next tank has a very elegant display containing a Yellow Rat snake and three Black Rat snakes, one of the snakes being an albino. The other snake is heterozygous and so 25% of the offspring from the two black snakes are albino. They have bred successfully for 2 years.

Other snakes on display include three Boa Constrictors (one 10 foot, 7 year old female and two smaller snakes), a young pine snake, a very aggressive Pacific Boa and three Chinese Beauty snakes, one of which is already over 9 feet long (little is known about these snakes but they are not supposed to exceed 8 foot in length).

From America, there are Desert King snakes which are encouraged by the American farmers as they are immune to Rattle Snake venom and will prey on them. There are the pair of Corn Snakes, one a Snow Corn which are usually used for handling with prearranged parties or general visitors. This pair is the origin of the complex offspring pattern described earlier.

There is more to Herpetology and the Serpentarium than snakes.

Three very aggressive Mangrove Monitor Lizards are in the only tank with artificial foliage, they rip the real stuff to pieces. Although these have never been bred in captivity, the Shearers are hopeful, if the male can channel his aggression in a little more productive way. This year they did mate although only infertile eggs resulted.

The Green Iguana is a curiosity. A pair were displayed from the same clutch of eggs but one began to dominate and so they were separated. At one year old the more dominant has reached nearly 3 feet long but its' brother is only about 1 foot long. It is perfectly proportional, seems healthy and feeds well. It just won't grow much!

Also in the breeding plans are a pair of Madagascan Spiny Tailed Iguanids. These were wild caught but the Shearers are anxious only to have and show captive bred animals except where this is unavoidable (for example animals confiscated by customs to whom the Serpentarium is as much a Sanctuary as a Zoo).

Other reptiles include Hinge back and Pancake tortoises and White's Tree Frog and Poison Arrow Frogs.

The Sky Serpentarium is a licensed Zoo not a pet shop! But the Shearers are able to sell their surplus stock or animals bred by them and in these hard commercial times, the revenue is necessary. Last years' breeding failed to satisfy demand and so an increase in the programme is now in hand. Any interested Herpetologists should contact the Serpentarium for availability. We left the Island with one more albino black rat snake than we had when we arrived !!!

Is it worth a visit? I would say definitely - for both the enthusiast and the Tourist. The Serpentarium is conveniently located about 6 miles from the Kyle of Localsh/ Kylescakin Ferry Terminal in Broadford just off the main road. Opening times are officially Mon-Sat, 10-6 p.m. April to June and Sept-October and 7 days July and August. At other times on demand by a knock on the door or a phone call in advance (0471-822209). Hatchlings may be purchased over the phone, and will be despatched by courier, as long as the Shearers are satisfied with the competence of the purchaser to look after the animal!

The Scotsman, in an article described the Serpentarium as "One of Scotland's best top ten undiscovered gems". That's a fair statement and I hope this article puts it more firmly on the U.K.'s Herpetological Map. To those of you who speak the Gaelic:

"ONAD NATHRAICHEAN AN EILEIN SGITHEANAICH".

S.J. Parrott
Parent of a Young Herpetologist Club Member

GREAT CRESTED NEWTS

Dear Sirs,

In the paper McLee/Scaife Brit. Herpt. Soc. Bull., No. 42, (1992) p. 6-9, the authors undertook to report further monitoring results on the colonisation by Great Crested Newts (*Triturus cristatus*) of a pond treated with a piscicide to remove sticklebacks (*Gasterosteus aculeatus*).

This year (1993), some 20 Great Crested Newt larvae and numerous Smooth Newt larvae (*Triturus vulgaris*) were observed. No sticklebacks were noted and we conclude that none survived the treatment in 1992.

Yours faithfully,

Dr A G McLee

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BRITISH HERPETOLOGICAL SOCIETY CONSERVATION COMMITTEE A POLICY ON THE TRANSLOCATION OF THE COMMON FROG

The common frog (*Rana temporaria*) is the most widespread amphibian species in the British Isles and every year the Society receives many queries, especially during the spawning season, concerning excess spawn, spawn introduction etc.

In practice frogs easily colonise new ponds without human intervention, particularly if there are other frog ponds in the area.

However if it is unlikely that a new pond will be colonised naturally, for example if there are no other ponds or frog populations known in the immediate vicinity, then some frog spawn clumps from a local garden pond may be introduced. However the spawn must not be transferred from ponds with the invasive alien water weed New Zealand stonecrop (*Crassula helmsii*) or known frog diseases. For garden ponds, no more than 1-2 clumps should be introduced, as too many clumps will result in overcrowding and stunted growth of individual tadpoles.

It is also recommended that excess spawn in garden ponds be left where it is, as each pond will have its own carrying capacity and selection pressures will result in only the best adapted individuals surviving to metamorphosis.

'Spawn swaps' in the literal sense are not necessary, as ponds support discrete populations with their own gene pools. Gene flow will occur when populations are connected by wildlife corridors, e.g. within the open countryside or a network of garden ponds. If corridors exist or are provided, natural gene mixing will occur. Spawn swapping has no conservation value except when two local, but isolated frog populations, are experiencing inbreeding problems.

Tadpoles and adult frogs should not normally be moved. Also these common frog guidelines are equally applicable to the common toad (*Bufo bufo*).

The BHSCC publish informative booklets on creating Garden Ponds as Amphibian Sanctuaries and Surveying for Amphibians. For a price list please write to BHSCC, 28 Old Fort Road, Shoreham-by-Sea, Sussex BN43 5RJ, enclosing a large sae.

NATTERJACK TOADS AT CANNOCK CHASE

Natterjacks were introduced to a quarry site on Cannock Chase in 1981. The toads had a very successful breeding season this year and thousands of tadpoles were observed in many temporary ponds, which fortunately did not dry out before the toadlets emerged in July.

However, the Conservation Committee are worried that the ever-increasing scrub and tree growth in the quarry is seriously degrading the terrestrial habitat for natterjacks.

By arrangement with Staffordshire County Council, BHSCC intend to carry out scrub clearance at this important site on Sunday December 5th 1993. If this clearance is to be effective we need as many volunteers as possible to help us on the day.

If you are interested in attending this task please contact Jan Clemons (34 Montalt Road, Cheylesmore, Coventry CV3 5LU. Tel: 0203 506416 evenings only) for further details.

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