



THE NATTERJACK



Newsletter of the British Herpetological Society

Established 1947

Roger Meek: A new fellow for the British Herpetological Society



Roger Meek, a member of the BHS since 1972, has been elected as a Fellow of the Society. This recognises his substantial contribution to both the Herpetological Bulletin and Herpetological Journal. In 2016, while editor of the Bulletin, the journal ran into a management crisis and Roger stepped in for the year to guide it to calmer waters before handing over responsibility to Rachel Antwis. He is the only member to have edited both publications simultaneously – a remarkable workload and very significant service to the BHS. He stepped down as Editor of the Bulletin in March 2020. This accolade puts him among eight other notable BHS members (see Herp Bulletin inside cover for a full listing of fellows).

Roger has had a lifelong interest in herpetology and pursued a career of teaching related to his passion for reptiles at the University of Leeds and Huddersfield Technical College (now Kirklees College). He has made herpetological expeditions far and wide and found time to author over eighty scientific publications. But he is still at it, he currently resides in western France where he studies the local herps, using a bicycle (and recently electric assist bicycle) that he uses to count road kill; this gives data from which he can estimate population changes among other things (see Herp Journal 30 (1)). He is also collaborates with herpetological colleagues in Europe, pooling and analysing data. All done from the beauty of the French countryside.



Studies on the health and welfare of reptiles in Kenya

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We first lived in Kenya fifty years ago, from 1969-1973. We have retained close links with that country, even when based elsewhere in East Africa, Arabia, the West Indies and Britain. Since 2002, we have been returning to Kenya two or three times a year to provide teaching and training on subjects ranging from domestic livestock to birds of prey and primates, but our focus has been reptiles. In all our activities in Kenya over nearly twenty years we have laid particular emphasis on working with and training local people, ranging from veterinary surgeons and students to reptile keepers, technicians and attendants. We are largely self-funded – we cover our own flights and much of our in-country expenses - but have been able to expand our work on chelonians thanks to the generosity of the British Chelonia Group (BCG) and the Dr Robert Andrew Rutherford Trust (see, for example, Cooper and Cooper, 2012, 2014), and a kind donation from Dr John Ballany.



Figure 1. Tortoises are handled by staff for examination.



Figure 2. Nicholas Muinde with one of the local plants that he uses to supplement the tortoises' diet.

Our visit to Kenya in February/March this year (2020) focused on training. For five years we have worked with a collection in Mombasa, where there are adult and sub-adult tortoises, mainly leopard, *Stigmochelys pardalis*, and approximately 20 babies – all hatched on the site.

We carried out our work on two separate days. On each it was hot (mid-30s Celsius), and humid, typical of the Kenya Coast in February-March and relevant to the practicalities of caring for reptiles.

On our first visit we met staff afresh. Formalities and etiquette are very important in East Africa, especially on the Coast. We did a preliminary check of the tortoises and their enclosure (“boma”) and drew up a list of tasks that needed attention. In particular, the tortoises’ accommodation had suffered structural damage during the prolonged rains in 2019; young tortoises had become immersed in water and a few had drowned. It was clear that local knowledge was needed and we made arrangements to invite a colleague from further up the Coast, Mr Shadrack Kombe, who is a senior and experienced Kenyan African herpetologist from the National Museums of Kenya reptile collection at Gedi, on the North Coast, to join us and advise.

A week later we organised a practical, interactive, training seminar that we entitled “Tortoise Health – and an Update”.

A group of people, including an older woman and several men, standing outdoors in front of a building. One man in the foreground is wearing a Reebok polo shirt.

Work on the young tortoises followed the same approach as for the adults, above, but in addition the shells were palpated for signs of softness, usually an indication of "metabolic bone dis-

ease” (MBD), caused by a calcium-phosphorus imbalance. The vital role of calcium in preventing MBD was emphasised afresh; it is usually provided in the form of powdered cuttlefish but an alternative inexpensive approach is to use heat-treated crushed shells of hens’ eggs. The value and drawbacks of supplementing the tortoises’ diet and saving money by feeding local wild plants was discussed.

We provided lunch and refreshments, which offered an opportunity for discussion, debate and net-working. Literature, including some from the British Herpetological Society (BHS), was displayed and distributed.

The second part of our visit took place at the Kenya Snakebite Research and Intervention Centre (KSRIC), which is based at the Institute of Primate Research (IPR) near Nairobi. With Kenyan colleagues we organised a practically-orientated seminar entitled “Reptiles and Snakebite”.



Figure 8. Geoffrey Kepha leads a tour of the Herpetarium),

The morning started with a tour of the KSRIC Herpetarium, led by Mr Geoffrey Kephah, an experienced snake-handler and herpetologist (who for some years regularly attended our reptile workshops and is now able to serve as a tutor in his own right. The snakes are kept for venom production and research. They are housed in temperature- and light-controlled rooms, with shelves of labelled plastic box cages. Each cage contains a water dish and an upturned cut-out bowl as a refuge. Each day, staff check each snake’s weight, skin condition, and look for any evidence of parasites or ill-health and behaviour.



Figure 9 and 10. Geoffrey Kepha demonstrates management practices, including safety).

The second part of the programme took place in the new IPR Conference Hall, which was full to capacity with staff and visitors. Before the formal presentations, Margaret Cooper announced that we had just returned from Baringo, where we met



Figure 11. John Cooper addresses the audience and introduces the speakers (photo courtesy of Geoffrey Kepha).

our old friend Jonathan Leakey, now in his 80th year. Jonathan is the eldest son of Dr Louis (L S B) Leakey, the founder of the IPR, and was the first Curator of the Nairobi Snake Park. Jonathan had sent good wishes to the seminar and he expressed his

pleasure that so many young Kenyans were now interested in reptiles.

Several short lectures were given, covering topics ranging from health, diseases and legal considerations when keeping reptiles



Figure 12. John Cooper (left) and Jessicah Kurere (right), two generations of veterinary surgeons working - fifty years apart - with reptiles at the Nairobi Snake Park and elsewhere in Kenya

in captivity to the use of snake venoms in the treatment of humans and animals. One presentation that attracted considerable interest amongst the audience was that given by Dr Jessicah Kurere who studied veterinary medicine at the University of Nairobi and graduated last year. During her 5th (final) year, Jessicah was part of a small group of enterprising students (they call themselves "The Snake Charmers") that work with the Nairobi Snake Park studying and promoting the health and welfare of the animals housed there – snakes, crocodiles, chelonians, monitor lizards and chameleons) as well as frogs, fish and mice). Jessicah offered to be the Park's veterinary surgeon volunteer and has been working in that role for several months. She spoke about some of the cases she has treated and described her work at the Snake Park as "a great learning experience".

The various presentations led to a discussion session, at which the different speakers answered questions put to them by the audience. Topics covered included the diagnosis of disease in reptiles, "emerging" pathogens, stress and welfare, legislation and codes of practice, human safety and anti-venom production. The proceedings were summarised by Dr Atunga Nyachio, Chief of Research at IPR after which the seminar was formally drawn to a close by the Director, Dr Hastings Ozwara. Participants then mingled and talked over Kenyan bitings" (refreshments - nothing to do with reptiles!). More information about the seminar can be found in the report by Dr Valerie

Jefferies:

<https://thefrightenedfaceofnature.com/2020/03/25/charming-snakes-by-dr-valerie-jeffries/>

For us, the seminar on "Reptiles and Snakebite" was not only a stimulating reminder of the excellent scientific work that is now being performed by many Kenyans but also, more specifically, the encouraging advances that have made in that country in respect of herpetological medicine. Fifty years ago, when we first went to live in Kenya, John served for four years as honorary veterinary surgeon to the Nairobi Snake Park. Based on that work and his research at Jonathan Leakey's snake farm at Baringo, he wrote many scientific papers (see, for example Cooper, 1971a,b, 1974a,b; Cooper and Nares, 1971; Cooper and Leakey, 1976) and subsequently co-edited one of the first textbooks on diseases of reptiles (Cooper and Jackson, 1981). However, despite John's studies and the knowledge gained in the early 1970s – arguably establishing Kenya as one of the birthplaces of herpetological medicine - for many years no regular veterinary work was carried out at the Nairobi Snake Park. The arrival on the scene of "The Snake Charmers" – and, in particular, the whole-hearted and energetic involvement of Dr Jessicah Kurere - was therefore an historic step forward. It promises to give Kenya a strong start once again in this specialised field of veterinary science.

We had four busy, but productive and most enjoyable, weeks in Kenya. We write this during the Covid-19 "lockdown" in 2020. We remain well and we consider ourselves lucky, compared with so many, in disparate parts of the world, to be isolated together in a small cottage in Norfolk, England. We returned from Kenya many weeks ago. Now we can hardly believe the time we had there – the heat and bright light, interesting work, good friends and spectacular countryside. The people of Kenya were apprehensive, not only about the coronavirus - it arrived just after we left – but also the menace from the north, swarms of locusts munching through the crops. We fear for the effects of these two pestilences on people in Kenya and their fragile health services and food supplies. Despite the many challenges that face Kenya, as ever at a cost to ordinary citizens, the future may not – we hope - be as bleak as some fear. Once the Covid-19 pandemic is over, the country will recover. Increasing numbers of Kenyans realise that their wildlife and natural resources are a national asset that will serve them well in the future. It is good to be able to report that this thinking increasingly extends to the conservation and care of reptiles.

References and further reading

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Catastrophic oil spill in Mauritius



Photo credit: Durrell Wildlife

Sadly, this year has seen trying times all over the world with the Covid-19 pandemic but to have other serious impacts in addition to this has certainly been testing. Mauritius is home to some of the rarest and most unique species of birds, reptiles and plants including the Telfair skink *Leiolopisma telfairii*, Bojer's skinks *Gongylomorphus bojerii*, Guenther's gecko *Phelsuma guentheri* but to name a few. This is definitely personal for myself having worked in Mauritius, with the Durrell reptile team and living on Ile Aux Aigrettes island. I have seen the work up close and the amount of effort that has gone into the conservation of these reptiles over the years on the islets. What has been achieved is incredible. When I joined as a research assistant in 2007, I took part in monitoring the first translocated population of Telfair skinks on Ile Aux Aigrettes. In the spring, we were searching for juveniles in the hope that they established meaning Telfair populations were not just isolated to Round Island. The work being carried out would result in the

safety of the species.

In March this year, just two kilometres offshore from Ile Aux Aigrettes island, a freighter (MV Wakashio) ran aground in the shallow waters. The oil spill (approximately 760 tonnes) from this has caused catastrophic effects on the long running conservation work that has been carried out by Durrell and the Mauritian Wildlife Foundation. Many animals have been rescued by the Durrell reptile team led by Dr Nik Cole and they are removing groups of individuals to be housed separately to ensure they have enough individuals to save the species if high numbers are lost due to this environmental catastrophe.

A fund has been running for people to donate well needed funds to aid the rescue work and can be located on their website with further details of the work being carried out. To donate: <https://www.durrell.org/wildlife/mauritius-oil-spill/>.

Written by Suzie Simpson

The mysterious Salamanders of King François 1: mediaeval myth, or genuine creature?

Written by Martin Johnson

Introduction

King François 1 of France (1515 - 1547) chose as his personal emblem the mythical Salamander. This creature was fearsome, believed to be fireproof and its poison was the deadliest known to man.¹



Figure 1. Chateau de Chambord © Martin Johnson

Two of his Loire Valley palaces, the Chateau de Chambord (Fig. 1) and Chateau Royal de Blois between them have hundreds of Salamander images represented in various sculptures and paintings (Fig. 2).



Figure 2. Salamander carving, Chambord, interior © Martin Johnson

Many of the sculptures have been heavily restored changing shape in the process, but there are enough unrestored ones to see that they may all derive from a common prototype. Is it possible after 500 years to identify that prototype? Is it a product of mediaeval mythology, or could it be based on a real creature?

Firstly, the images do not resemble any known salamander, or salamanders of contemporary mediaeval art (Fig. 3). The

word salamander is itself derived from ancient Greek, and the conceptual source for the mythical salamanders is undoubtedly Pliny the Elder, who attributes them in turn to Aristotle (4th Century BC). The Salamander images of King François appear more reptilian due to having five claws on each foot (four pointing forward), scutellations running down their backs and long neck and tails (Figs. 2,10).



Figure 3. Mediaeval Salamander: (courtesy, Corpus Christi College Cambridge: Isidore of Seville ms022 fl65r)

Dragons?

Could they have been based on mediaeval dragon imagery? There are many contemporary dragon images in European art, but all are distinctly different from the Salamanders of King François.



Figure 4. Dragon, St David's Cathedral, 15th/16th C © Martin Johnson

This dragon from St David's Cathedral, Pembrokeshire UK (Fig. 4) is like many others from the period. The wings could be loosely based on butterflies, the ears from cattle, while the feet are like those of a duck. Mediaeval dragons usually have wings, and most have ears. The lack of external ears on the Salamanders of King François is enough to show that they have no obvious precedent in European art, and with their long necks they resemble no known European reptile.

Away from Europe, however, there is one family of long-necked reptiles, the monitor lizards in the genus *Varanus*. The various species cover a vast area, occurring through Africa, the Indian Subcontinent, to China, down Southeast Asia to Thailand, Brunei, Indonesia, the Philippines, New Guinea, Australia and islands of the Indian Ocean, and the South China Sea.

Monitor mythology

If our identification of members of the Varanidae as possible candidates for the Salamander image is correct, we must first ask, why choose one of these?

King François was seeking an image to reflect his sense of prestige, so the big monitor lizards (when rebranded as Salamanders) would have served his purpose well. They were reputed to be both ferocious and venomous, could climb trees, and could swim, which helped them fit into the European legends neatly (the mythical animals are often pictured in trees or down wells). Their fire-resistance (or lack of it) was about the only mythical aspect which would need to be assumed or glossed over. Daniel Bennett writes about indigenious beliefs concerning the large monitors:

"...they would have been feared and thought to bring bad luck... In Borneo they are sometimes depicted on the shields of warriors in order to strike dread into the hearts of opponents ... In parts of Pakistan it was considered essential to keep your mouth tightly closed in the presence of a monitor lizard; one glimpse of the teeth and the reptiles' spirit could infect your soul."

Anyone making pictures of them would have been aware of this reputation, which would add to their exotic appeal. This leads to the next puzzle, how could specimens or images of an animal known in the regions from Africa, across South Asia to Australasia have found their way to the Loire Valley soon after 1500 AD?

Chinese Connections

One possibility is the trade routes known as the Silk Roads, between Europe and China. Trade between India, China, and Europe had taken place at least since the time of the Roman Empire if not long before, but this had regularly been disrupted by events such as wars. Following the 13th Century Mongol conquest of central Asia and China, Khubilai Khan, the Mongol ruler, operated a policy of bringing in people from outside China to help him rule, and he promoted many people from the Near East and Central Asia to prominent government positions, thereby facilitating the re-opening of trade links. Marco Polo, a Venetian, served under Khubilai Khan for 20 years before returning home, where he wrote a book about his experiences, "Description of the World". This triggered widespread European interest in China, and its fabulous wealth, products, and technologies. In Marco Polo's time the Chinese invaded most of Southeast Asia including Sumatra and Java, and he spent five months in Sumatra. He described many birds and mammals, but not

snakes, crocodiles, or monitors, indicating that Marco Polo himself is unlikely to have been the source or channel for the Salamander image.

The species of large Varanidae known in this region include the black roughneck monitor lizard, *Varanus rudicollis*, which may grow up to 1.5 metres long, and is found across Southeast Asia. Its venom is reputed to be powerful enough to kill an elephant, but is highly secretive, therefore an unlikely candidate.

Three other Asian monitor species have features that seem to rule them out.

Komodo Dragons *Varanus komodoensis* - have rounded snouts and are overall much chunkier.

Clouded Monitors *Varanus nebulosis* - have nostrils halfway between eye and snout and more slender heads.

Rasmussen's Water Monitor *Varanus rasmusseni* (Fig. 4) is only known from the Southern Philippines islands (Tawi-tawi Jolo and Bitinan) and is much smaller (up to 1.2 metre length), though its resemblance to the Salamanders is striking.



Figure 5. Rasmussen's Water Monitor *Varanus rasmusseni* © Ng Bee Choo

The Perentie Lizard *Varanus giganteus* from Australia can grow to 2.5 metres long (Fig. 6) and has the shallow lower jaw of the Salamanders. It shows a skin pattern and colouration reminiscent of the vase painting at Figure 7, but is restricted to arid regions of Australia.



Figure 6. Perentie Lizard *Varanus giganteus*



Figure 7. Blois Salamander painted on vase © Martin Johnson

The Asian water monitor *Varanus salvator*, on the other hand, is the most common species of monitor lizard, occurring all through the southeast from India and Sri Lanka to Malaysia, Indonesia, Borneo and the Philippines - the widest range of any species. These are the second largest species of monitor after the Komodo Dragons and often attain a length of 3 metres, and a weight of more than 25 kg. They have five claws on each foot, heads with snouts that taper towards the nose, and jaws that hinge behind the eye sockets with pointed teeth. They all sense with their tongues which flick in and out, so the flames coming out of the mouth of some Salamander sculptures (Figs. 1, 7) could be an embellishment of the monitors' forked tongue giving the impression of flames (Fig. 8), especially if seen when covered in blood after a kill.



Figure 8. Asian Water Monitor *Varanus salvator* showing tongue (courtesy, Ecology Asia, <http://ecologyasia.com/>)

Chinese Records

The 16th Century bestiary of [Yi yu tu zhi](#) describes travels far from China and records many races of people and types of animal from around the world, including a zebra and a lama, showing that Chinese explorers had reached Africa and the Americas, making China a very plausible source for the image that ended up being presented as the Salamanders of King François.



Figure 9. Asian Water Monitor *Varanus salvator* (courtesy, The Conversation, <https://theconversation.com>)



Figure 10. Salamander, Chateau Royal de Blois (exterior) © Martin Johnson

Closer to France, however, are the two monitor species found in Northern Africa, the Nile Monitor Lizard, *V. niloticus*, and the Savannah or Bosc Monitor Lizard, *V. exanthematicus* (named after French scientist Louis Bosc 1759-1828). Nile Monitors are usually seen up to around 2 metres in length, but may grow to 2.44 metres. The Savannah or Bosc Monitor normally grows to around 1 metre, but can reach 1.5 metres. The former is largely aquatic and the latter terrestrial. Both are venomous to small animals but not usually dangerous to humans and both could easily have been held in French collections of African animals even in the 16th century AD. *V. exanthematicus* has a short snout compared to *V. salvator* or *V. niloticus*, making it a less likely prototype. The prominence of ridges above the eyes in the carvings varies, so Figure 10 more closely resembles the head of *V. salvator* in Figure 9, while the head of *V. niloticus* (Fig. 11) more closely resembles the head of the vase painting in Figure 7. Both these species have been seen with a wide degree of variation in markings and colouration.



Figure 11. Nile Monitor *Varanus niloticus*

Conclusions

We have seen that the Salamanders of King François 1 do not resemble any known living or mythological animals from mediaeval Europe, ruling out a European source. The Salamander images are plausibly derived either from the Asian water Monitor, *Varanus salvator* (Fig 10 & 11) or the Nile Monitor, *Varanus niloticus* because of physical resemblance, proliferation in regions known to be well-travelled from Mediaeval times, and reputational match.

The images could easily have originated with Chinese travellers in Southeast Asia and been moved west via trade channels to one of the main Italian trading centres (Venice, Genoa), and thence to the sculptors in France who carved the Salamanders. King François was closely connected with the whole of the Italian field of art and literature and he installed prominent artists including the Italian sculptors Benvenuto Cellini and Francesco Primaticcio at his court. They would have been well-placed to have access to images of exotic animals from the Far East via Genoa and Venice. It is, however, more probable that the prototype was *V. niloticus*, one or more examples of which could have been kept for a while in France after being caught and transported from northern Africa. It may even be that the legendary reputation of the creatures from further east was linked to a specimen from Africa. The fact that the carvings are made from a variety of different angles and poses suggests that the sculptors had a live specimen at the beginning of their work. The variations in the quality and accuracy even of the

earlier sculptures suggests that if there were a live specimen, it did not survive long.

We cannot completely rule out other candidates as prototypes, but while *V. salvator* is a plausible contender the balance of probability favours the Nile Monitor *V. niloticus*.

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3. Pliny the Elder, *The History of Nature*, Salamanders are in Book 10, Chapter 86 and Book 29, Chapter 23. tr. H.Rackham and W.H.S.Jones 1961 (Loeb edition) at: http://www.attalus.org/info/pliny_hn.html (viewed 1 November 2018).
4. Bestiary manuscripts reviewed were: **Corpus Christi College Cambridge**: Peterborough Psalter and Bestiary ms053; Isidore of Seville ms022. **Cambridge University**: Yi yu tu Zhi. **British Library**: Add ms11283; Add ms28260; Add ms62925; Arundel 157; Bartholomaeus Anglicus ms8785; Harley 3244; Harley 4751; Royal 2 B vii; Royal 12C xix; Royal 12F xiii; Stowe ms1067. **Bodleian Library**: Ashmole 1511; Bodleian 602; Bodleian 764; Douce 88; Douce 151; Douce 167; Laud misc 247; Laud Greek 86.
5. A concise summary of the locations of members of the Varanidae species may be found at: <https://animaldiversity.org/accounts/Varanidae/> (Viewed 1 February 2019).
6. Daniel Bennett. 1995. *A Little Book of Monitor Lizards*. Viper Press U.K This extract from an article 'The Monitor in Folklore and Art' at: https://biocyclopedia.com/index/monitor_lizards/the_monitor_in_folklore_and_art.php (Viewed 11 Jan 2019)
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8. Marco Polo *The Description of the World*, translators. A.C. Moule & Paul Pelliot 1938 London G. Routledge. Giant serpent report: p. 278
9. Yi yu tu zhi, zebra p. 189, lama p. 190. <https://cudl.lib.cam.ac.uk/view/MS-FC-00246-00005/25> (viewed 19 October 2018)
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12. Personal correspondence with ornitho-Egyptologist John Wyatt 11-15 July 2020 from his experience of African monitor lizards during 40 years of field work.
13. A brief history of François' reign may be found at: <http://www.luminarium.org/encyclopedia/francis1.htm> (Viewed 1 February 2019)

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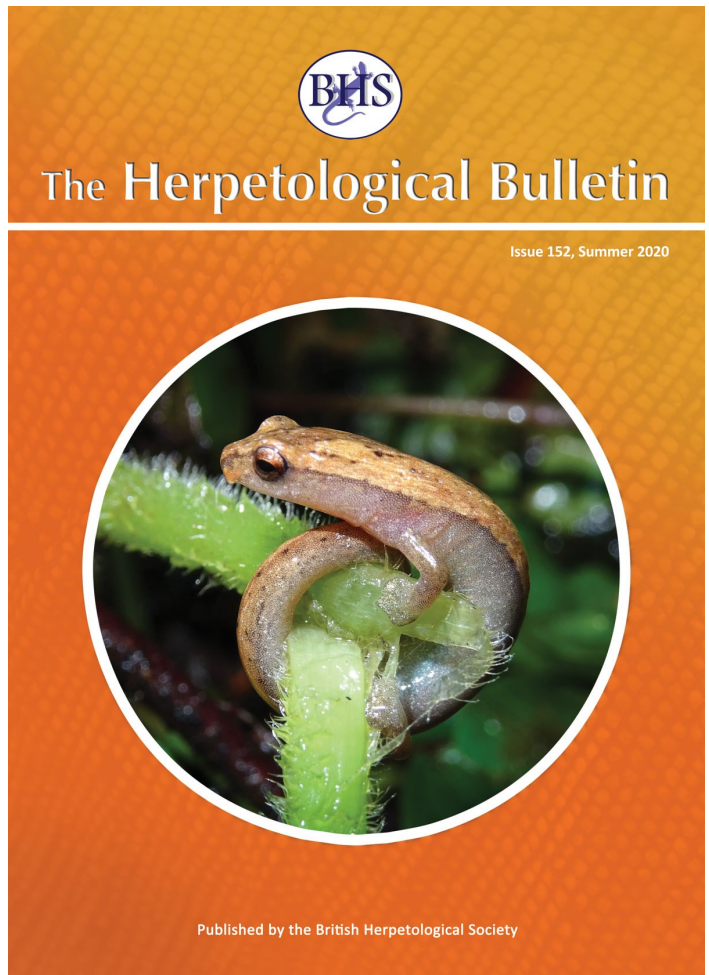
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THE NATTERJACK



Newsletter of the British Herpetological Society *Established 1948*

To our BHS members,

We are always interested in hearing from you. Please feel free to contact me if you would like to share anything regarding herps. We would love to hear about your animals, your experiences, their care and husbandry, ideas, training, research and more.

It is important to us that you have that opportunity to share with the wider community, as we all benefit from sharing knowledge and experience.

Kind regards,

Suzie Simpson

Email: natterjack@thebhs.org

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