

STUDIES ON CHELONIAN AND OTHER REPTILES IN KENYA

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Introduction

This article is based on the lecture that we gave to the British Chelonia Group (BCG) in March 2012, reporting on our work with reptiles, especially chelonians, in Kenya. Since then we have made another visit to East Africa and were able to build on the progress reported in that BCG presentation. Therefore, in order to incorporate the additions – and to update BCG members with our progress – we have compiled this article in a chronological fashion, based on our travels and activities during our latest, May 2012, time in Kenya.

We started our visit in Nairobi where we spent our first week attending and lecturing at the Scientific Conference of the Faculty of Veterinary Medicine/ Kenya Veterinary Association (celebrating the golden jubilee of the Faculty) and planning a series of future reptile workshops in collaboration with the National Museums of Kenya (NMK).

We are not new to this part of the world as we lived in Kenya in the late 1960s/early 1970s, when John was a Veterinary Research Officer based at the government laboratory at Kabete, on the outskirts of Nairobi. Both our children were born in Kenya. In more recent times we have been visiting the country regularly each year in order to teach on a voluntary basis.

From Nairobi, on a warm bright day, we travelled by bus to the Kenya coast, where this account commences.

The first few days

Our first day augured well for a two-week stay at the Coast. Overnight much-needed rains fell and we heard *Hyperolius* reed frogs beginning to chirrup. Before breakfast we were brought a chameleon, *Chamaeleo dilepis*, which had been found in the grounds of the house where we were staying. In the afternoon we had a swim from the tiny beach below the house and there saw a green turtle, *Chelonia mydas*, appearing in the waves. We had that small beach to ourselves for nearly an hour; the only other vertebrates seen were an African fish eagle, a pied kingfisher and a woolly-necked stork, all of which

flew past as we looked out towards the waves breaking on the coral reef. We often saw a crowd of ghost crabs running along the waterline or vanishing into their holes in the sand.

When we arrived at the Coast many areas were dry and dusty and it had not been possible for local people to till the ground and to plant their all-important crops. Many local zebu cattle were thin and foraging for food wherever they could, including roadside rubbish dumps. The onset of heavy rain on our arrival did nothing to daunt our spirits as we were aware of how much this was needed by local people.

Our second day at the Coast also started well. A large savannah monitor lizard, *Varanus exanthematicus*, ambled across the track as we set off by car to Kwale town. Our destination was Shamba Musa, an area of bush overlooking the Mwaluganje Elephant Sanctuary, where for some years we have held the field sessions of our workshops on various veterinary and wildlife topics.

We had not seen tortoises in this location (Shamba Musa) until November 2011 when, as we reported in our lecture at the BCG Symposium in March 2012, we had a small number of hinge-back tortoises, *Kinixys* sp, probably *belliana*, brought to us. Interestingly, these animals had been found feeding on fungi which appear in response to the rains and which local people also harvest and consider a delicacy. The liking of this species for fungi is mentioned by Spawls *et al.* (2004).

The tortoises brought to us in November were photographed, weighed, measured, given a basic health check, marked and released. This exercise provided us with an opportunity to train three local people in these important techniques (Fig. 1). The tortoises were then returned to the wild as we do not have a permit to possess hinge-backs at present. However, we are hoping to obtain such authorisation from the Kenya Wildlife Services (KWS) which would enable us to start a small project on this species in the Kwale locality.

The check on the health of these tortoises prior to release is not just of academic interest. How to achieve reintroductions (or releases/introductions or translocations) of wild species with minimal or no damage to the environment or its other wildlife has long taxed conservationists and animal welfarists and has resulted in the production of Guidelines for Reintroduction by the International Union for Conservation of Nature (IUCN, 1998). At the time of writing (2012), the IUCN Guidelines are being revised and updated. We are anxious that any projects in which we are involved, including this one on *Kinixys*, adhere as closely as possible to the Guidelines – which puts strong emphasis on health-monitoring of any species prior to its return to the wild. We are not in a position to emulate the sophisticated health-monitoring procedures used in richer parts of the world – in the USA, for example (Berry & Christopher, 2001) – but routine health checks on tortoises

in Kenya should provide some insurance against the spread of pathogens and will offer an opportunity to collate baseline data on the local species.

On the third day a trip to Diani, a resort much beloved by tourists, allowed a return visit to two small private reptile collections that we had first viewed in 2011 (Fig. 2). We made reference to these in our talk in the 2012 Symposium. Such collections are primarily orientated towards attracting fee-paying visitors, especially tourists. They are subject to inspection by the KWS but, in practical terms, the relative lack of knowledge about keeping reptiles and amphibians means that standards are not the highest. This is often noticed, and sometimes reported, by tourists.

Matters that particularly warrant attention in such collections include staff training, design of facilities and diverse welfare considerations relating both to the reptiles and to the prey items (rodents, chicks and amphibians) that are offered as food. Most of these collections house small numbers of tortoises of different species (mainly leopard and hinge-back), venomous and non-venomous snakes and lizards and usually at least one Nile crocodile, *Crocodylus niloticus*.

An important need is for regular veterinary attention and this implies having access to a veterinary surgeon who has interest in, and preferably knowledge of, reptiles – or at least a willingness to learn. There are encouraging signs; at least one vet on the South Coast has a genuine interest in exotic animals, including reptiles, and the Nairobi Snake Park, for long lacking professional advice on health and welfare, now has a service provided by two Kenyan vets from the National Museums of Kenya. Our hope is that, at some point, the Workshops about reptiles that we have been asked to organise for the NMK (see earlier) might be extended in order to provide some tuition for those working in private collections on the Coast and elsewhere.

We returned to Shamba Musa, which is an excellent location for squamate reptiles, both lizards and snakes, and were rewarded again by finding another *C. dilepis* chameleon that was crossing the road.

Our second week

We also have links with two establishments on the North Coast of Kenya, the other side of Mombasa, nearly one hundred miles from Kwale, at Watamu – a small coastal tourist resort which boasts both the Watamu Turtle Watch (WTW) (Fig. 3) and a reptile collection (Snake Farm) run by Bio-Ken.

A component of WTW is the Marine Turtle Rehabilitation Centre which, in addition to monitoring nests and hatchlings, receives and collects sick, injured and displaced turtles and provides care and treatment with a view to returning them to the wild. The animals are housed in purpose-built pools where strict attention is paid to hygiene and water quality (Fig. 4).



Fig. 1. Three local people learn how to handle tortoises. (Photos by Margaret E. Cooper)



Fig. 2. The guide at a private reptile collection demonstrates his prowess in snake handling.



Fig. 3. The entrance to Watamu Turtle Watch.



Fig. 4. Participants in the Workshop discuss water quality.

We first visited the Trust In 2010 when the Trustee and Coordinator of the Centre, Nicky Parazzi, kindly invited us to stay at the Centre and to give the staff a talk about our work with leatherback turtles, *Dermochelys coriacea*, in Trinidad and Tobago when we were living there between 2002 and 2009. The audience on that occasion consisted of Centre staff, three expatriate volunteers from the UK and Australia (all biologists or environmental scientists) and Dr Faraj Feisal, a local veterinary practitioner who advises the Centre on health matters and who makes his veterinary visits on a specially-equipped motorbike (Fig. 5). Our lecture, entitled "Studies on the health of sea-turtles", described research on unhatched eggs and dead hatchlings of the leatherback turtle (*Dermochelys coriacea*), opportunistic investigation of live or dead turtles and collaboration with other projects. Pathological studies on eggs and hatchlings in Trinidad yielded data that are helping to throw light on causes of neonatal mortality and collaboration with other projects permitted a veterinary input into conservation biology. Although the Watamu Centre sees relatively few leatherbacks, the health-monitoring and research methods that we described are applicable to other species of sea turtle and we were anxious to promote that concept, for reasons that are explained above.

In May 2011, as a follow-up to our 2010 Seminar, we helped to organise a sea turtle workshop at WTW which not only provided training for the Centre's staff but also attracted participants from other turtle watch groups, veterinary personnel and other interested parties.

We started with PowerPoint and interactive lectures on biology, law, health and welfare; these were supplemented with a display of laminated articles about turtles and other reptiles and literature, generously donated by the British Chelonia Group (BCG) and other organisations, was distributed to all registrants. Copies of BCG publications, including *Testudo*, were presented to the Library of WTW and, later, to Bio-Ken (Fig. 6).

The lectures progressed to practical sessions that taught handling of live animals – starting with tortoises, because they are easier to deal with, and progressing to the turtles held by WTW (Fig. 7). A system for basic health-monitoring of chelonians was demonstrated and then groups were given the opportunity to practise the procedure on tortoises (Fig. 8). After lunch *post-mortem* examination of a dead turtle was demonstrated after which the veterinary participants carried out a second necropsy and showed the other participants relevant anatomy and pathological lesions (Fig. 9). The clinical and *post-mortem* examinations provided an opportunity to demonstrate the collection of samples, such as blood, urine and faeces. The samples were then processed and fixed on slides, again with opportunities for the participants to practise this. Then the slides were examined, using microscopes adapted for use in the field, under the guidance of the veterinary participants (Fig. 10).



Fig. 5. Dr Faraj demonstrates the adaptability of his motorbike, used to visit patients and owners, to John Cooper.



Fig. 6. Margaret Cooper presents BCG literature to Sanda Ashe.

Fig. 7. Handling and examination of a sick green turtle.



Fig. 8. Training in health assessment using tortoises.



Fig. 9. Veterinary participants demonstrate necropsy of a turtle.



Fig. 10. Dr Faraj demonstrates the use of a mirror-operated microscope.



Fig. 11. Participants examine the slough of a large African rock python.



Fig. 12. Presentation of certificates.

Bio-Ken Snake Farm was the site of the second day of our Workshop in 2011 and some of our activities (health-monitoring of tortoises) this May. Bio-Ken was established some years ago by the late James Ashe, known to many in Britain and elsewhere for his encyclopaedic knowledge of reptiles and his practical experience of catching, handling and managing these animals. Still run by Sanda Ashe, Bio-Ken is not just a collection of reptiles, open to the public (important in itself as an educational resource), but also a laboratory and research centre, with particular reference to the extraction and medical use of snake venoms.

The second day at Bio-Ken enabled participants to see the collection of reptiles (which includes tortoises and terrapins), to handle animals if they wished and to examine them for lesions and parasites. Most people actually touched a snake and all were willing to hold and examine shed skins (Fig. 11) – this takes courage in a country where poisonous species present a constant danger, especially in rural areas. At the end of the Workshop each participant received a signed certificate (Fig. 12).

Return to Nairobi

After two weeks, divided between the North and South Coasts, it was time to return to Nairobi. There a visit to an ostrich farm provided an interesting and welcome interlude before we boarded our 'plane to return to Britain.

The visit had proved successful in reviewing our chelonian activities and organising future training programmes. There is the strong possibility of workshops on reptiles and amphibians in 2013, in collaboration with the National Museums of Kenya. We therefore have much to plan and to report to those who have supported and encouraged us. Kenya faces many challenges, especially with the prospect of a general election next year, but we remain confident that the growing interest in wildlife conservation and concerns about the health and welfare of captive animals will continue. Reptiles are not always popular in East Africa but attitudes are changing and chelonians in particular, because they present no threat or challenge to humans, are ideal subjects for educational and research initiatives.

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