

BHS Captive Breeding Committee (CBC) Report 2013

Dr Simon Townson, Chairman

This report provides an update on CBC activities, particularly meetings and current/recent applied project work. The programme of project work was established in 1999 and has been supported largely by independently raised funds.

Amersham Meeting 2012

The annual Amersham meeting, in collaboration with the Thames and Chiltern Herpetological Group, took place on Sunday October 21 2012 and was a great success with the feedback all positive. The meeting was well attended, with excellent presentations and lively discussions, particularly with regard to the difficult issues surrounding conservation and trade. It was particularly pleasing to hear presentations/updates from Doug Bell and Richard Griffiths, having both earlier received CBC grants towards their project work.

The meeting programme was as follows:

Matthew Rendle (Zoological Society of London): 'Breeding Tree Boas in Captivity'

Richard Griffiths (Durrell Institute for Conservation and Ecology, University of Kent): 'Chameleon Trade and Conservation in Madagascar'

Doug Bell (Blue Iguana Recovery Programme, Cayman Islands): 'Blue Iguana Recovery Programme – Captive Breeding and Release of *Cyclura lewisi*'.

Tell Hicks. 'Herpetology of the Galapagos Islands'

The informal part of the meeting involved a variety of exhibitions, including captive bred live animals, herpetological books, art, posters, fieldwork photography, T-shirts etc. , and also the Thames and Chiltern Herpetological Shop (dry goods), and a BHS table for membership applications, publications, and promotional materials etc.

Amersham Meeting 2014

This took place on Saturday April 12th 2014. Speakers included:

Luke Harding (ZSL). 'Conservation and Captive Breeding of the Dominican Mountain Chicken (*Leptodactylus fallax*)'.

Matthew Rendle (ZSL). 'Royal Python Conservation Status and Trade in W. Africa'.

Emma Wombwell (DICE/IoZ). 'Chytrid in the Amphibian Trade'.

Sandra Owusu-Gyamfi "Save the Frogs Ghana".

Current Projects (2013)

Conservation and Sustainable Utilization of the Golden Mantella Survey of Breeding Sites in Mangabe, Madagascar Madagasikara Voakajy

Background:

Madagasikara Voakajy is a Malagasy organisation created in 2005 to promote the conservation and sustainable use of Malagasy ecosystems, habitats and species, by mitigating key threats through targeted actions and applied research, for the benefit of Malagasy people. Its activities are focused on endemic and threatened species, for instance the golden mantella frog, *Mantella aurantiaca*, a Critically Endangered species under the IUCN RedList.



Golden Mantella in situ , Mangabe, Madagascar
Photograph courtesy Richard Griffiths

The golden mantella frog is found only in the district of Moramanga in eastern Madagascar. Within its restricted range, the species is subject to collection for the international trade and habitat degradation due to legal and illegal mining, and conversion of breeding ponds into rice fields. A conservation strategy for the species was developed in 2010 (Randrianavelona et al. 2010), and included habitat protection, relocation of frogs at ponds affected by legal mining, captive breeding, and sustainable management of the collection. It is expected that golden mantella populations will be equitably, legally and sustainably managed.

In Mangabe area, Madagasikara Voakajy identified 50 ponds, 31 of which have confirmed golden mantella populations. Since 2012, there is a harvesting quota of 550 golden mantella frogs that Madagascar can export annually on the international trade. Yet, Madagascar has

to develop a Non-Detriment Finding, and to prove that harvests are sustainable to maintain this quota. To do so, collection sites need to be identified appropriately.

Aim and objectives:

This project aims to update the status of golden mantella breeding ponds in Mangabe. Surveys will

- (i) confirm the presence/absence of the species in the ponds,
- (ii) estimate population sizes in each pond and
- (iii) assess habitat quality.

Ultimately, this project will allow earmarking harvesting sites for the international trade quota.

Methods:

Presence/Absence

Ponds will be visited three to five times by a team of researchers from Madagasikara Voakajy and members of the local communities between November 2013 and January 2014, the peak season of *M. aurantiaca* activity. There will be an interval of at least three days between the visits. When presence of the golden mantella is confirmed, only three visits will be carried out. Population size will be estimated at each visit. We will do up to five visits for sites where golden mantella is not found to confirm absence.

Population size estimates

Golden mantellas observed in a quadrat of 5m x 5m will be counted. Each quadrat has a specific identity and will be surveyed systematically following specific direction to avoid double counting. Three to 75 quadrats will be set up according to the size of the pond. Quadrats will be distributed in the ponds and the adjacent forest. As golden mantellas are often difficult to observe but have distinctive vocalization, abundance will also be estimated based on the calls. After the direct counts, number of mantellas heard from the quadrat will also be estimated.

Habitat assessment

Habitat assessment will be done following the quadrats of 5m x 5m, the same as we mentioned to determinate the population size or the number of mantellas. Therefore, the quadrats will be selected across



Golden Mantella Breeding Site
Photograph courtesy Richard Griffiths

the topography from the ponds at the bottom, the slope area to the ridge or crest of the forest. The quality of the habitat will be assessed using the methods described by Randrianantoandro et al. (2008): the number of standing, fallen and cut trees, fern, tree fern, *Pandanus* spp., *Dracaena* spp. cow's feces will be counted; and the litter depth, diameter of tree trunk will be measured using tape measure. Using a 1 m stick marked with cm graduations, we recorded whether there was contact with ground vegetation in four height categories (0–0.24, 0.25–0.49, 0.50–0.74 and 0.75–1.0 m) every 10 cm along two 5 m lines with the perch at the centre. The percentages of plants, forest and water covers in the pond, as well as the canopy cover, litter cover, and understorey cover will be estimated using the matrix

from the method of Oldham (2000). The slope will be measured with clinometers. The quadrats will be classified as occupied or not by mantellas during the data. Variables such as temperature, humidity, pH, conductivity and luminosity will be collected especially for microhabitat, refuge or water used or not by mantellas.

Wider relevance of the project:

This project will complement existing collaborative research being carried out by Madagasikara Voakajy and the Durrell Institute of Conservation and Ecology at the University of Kent. This work is focusing on providing science-based data to inform the CITES decision-making processes in Madagascar, and is funded by the British Government's Darwin Initiative. Previous research (also supported by BHS) resulted in a new export quota for the chameleon *Furcifer campani* – a species that previously came under a trade ban. We hope that the proposed research will improve the knowledge base for a similar reassessment of the



Mantellas in situ
Photograph courtesy Richard Griffiths

quota for *Mantella aurantiaca*. To this end, DICE is committing resources to evaluate the current quota formula, carry out population viability analyses of mantellas, advice on captive breeding protocols and assist Madagasikara Voakajy with spatial modelling of mantella habitats.



Mantella Promotional Campaign
Photograph courtesy Local Conservation Group

Reptile Care, Health and Welfare (Preliminary Report July 2013)

Workshop on Reptiles held in Kenya.

Prof John Cooper and Margaret Cooper (University of Cambridge and Wildlife Health Services, UK)

A one-day Workshop on the care, health and welfare of reptiles was held at the National Museums of Kenya (NMK), Nairobi, on Wednesday 31st July 2013.

The aim of this Workshop was to broaden the knowledge of those Kenyans who already work with reptiles, to provide training to others, especially biologists, in the correct care of these animals, and to guide veterinarians in the recognition of health and diseases.

Arrival and Registration were co-ordinated by Mr Jacob Mueti, Senior Curator, NMK, assisted by interns at the Nairobi Snake Park. The number of people expected to register was 40 but, in fact, on the day, the Workshop attracted 68 participants. These were a mixture of reptile-keepers, professional herpetologists/biologists, members of the veterinary profession and university academic and technical staff.

The morning session was chaired by Professor John E Cooper (Visiting Professor, University of Nairobi). He invited all participants to introduce themselves. Professor and Mrs Cooper then presented books donated by organisations in Britain to the NMK Librarian, Ms Asha Owano, and to the Snake Park Curator.

The initial talk was by Jacob Mueti - "Introduction, Expectations, Programme, and Objectives". He acknowledged all those involved in organising the day and thanked the Director-General of the National Museums of Kenya (NMK) for both approving and hosting the Workshop. Particular tribute was paid to Sally Dowsett, in London, who had designed and produced the Course Notes and other literature. Gratitude was expressed to the British Chelonia Group (BCG) and to the Dr Robert Andrew Rutherford Trust for their generous support.

Dr Patrick Malonza (Head of Herpetology Section, Zoology Department, NMK), then provided an "Introduction to Reptiles (Chelonians, Lizards, Snakes, Crocodiles)". He described the different groups and species, with particular reference to East Africa, outlined their distribution and stressed their ecological importance.

Ms Beryl Bwong (Herpetology Section, Zoology Department, NMK), gave the second presentation, entitled "Husbandry Practices – Reptiles". She gave a thorough introduction to the management and captive-breeding of reptiles, stressing that one must have basic information on the biology of the species kept and concern for the animals' welfare.

During coffee and the usual Kenyan "bitings" (snacks) there was an opportunity for registrants to view literature provided by various organisations including the British Chelonia Group, the British Herpetological Society, the British Veterinary Zoological Society (BVZS), the British Small Animal Veterinary Association (BSAVA) – and, nearer to home, NatureKenya (The East African Natural History Society).

The next presentations covered the law relating to reptiles. Mrs Margaret Cooper (Visiting Lecturer, University of Nairobi) addressed the audience on the subject of "Legal and Ethical Aspects of Keeping Reptiles in Captivity – the International Perspective". She explained that international law requires countries to protect wildlife and their habitats in various ways that can benefit wildlife. Regional legislation also applies to reptiles - for example, the European Union Habitats Regulations and Directives and the Council of Europe Berne Convention.

Mrs Margaret Mosse (Senior Warden, Kenya Wildlife Service (KWS)) then discussed "Legal and Ethical Aspects of Keeping Reptiles in Captivity – the Kenyan Perspective". She explained the legal regime for wildlife in Kenya and noted that most species are protected under Kenya's Wildlife Act (Wildlife Conservation and Management Act 376). This means that a permit is required from KWS if such animals are to be taken into captivity or studied as part of a research programme.

Professor John Cooper then spoke about "Reptile Health". He pointed out that, in the early 1970s, substantial numbers of scientific publications about the health and diseases of reptiles had been published from Kenya, largely based on studies at the Nairobi Snake Park and at the Veterinary Research Laboratory, Kabete. He explained that the maintenance of health is important when reptiles are kept in captivity. Health can be defined as a positive state of physical and mental wellbeing, a disease - free state. The aim should always be to *prevent* disease.

The afternoon session was chaired by Dr Patrick Malonza and consisted of an extensive practical session (clinical examination, *post-mortem* examination and laboratory work) led by Professor Cooper. Reptiles in the Snake Park were handled and examined and micro-chipping was demonstrated. Registrants, particularly those with experience of reptiles, were able to participate and to contribute their knowledge.

At the end of the day, in a closing ceremony chaired by Dr Patrick Malonza, there were concluding remarks and certificates of attendance were presented.

This Workshop familiarised participants with the biology and importance of reptiles and helped them understand health and disease issues. Those who already worked with reptiles expressed pleasure at what they had learnt and said that they welcomed the opportunity to participate in the discussions and practical sessions. Attendees who had been less positive about the topic were clearly significantly swayed in their thinking and stated that they were beginning to appreciate the importance and value of Kenya's reptiles.

Dominican Mountain Chicken Project (*Leptodactylus fallax*)

During 2013 we received a request for funding from the ZSL conservation and captive breeding project for the Dominican Mountain Chicken. BHS had given some funding to this project in recent years, and so after some consideration the request for funding was forwarded to our colleagues at the Thames and Chiltern Herpetological Group. In December 2013 TCHG agreed to support this project with a £1000 grant.

Other/ongoing project updates

Conserving the Belalanda Chameleon

Richard Jenkins, Richard Griffiths (DICE)
and Madagasikara Voakajy



This project was funded thanks to a generous personal donation to BHS from Harriet Rathborn.

In September 2009 the CBC funded an application from the Durrell Institute for Conservation and Ecology (UK) and Madagasikara Voakajy (Madagascar), on the conservation of the very rare Belalanda Chameleon (*Furcifer belalandaensis*) from the SW of Madagascar. This applied project involved thorough surveys to map the distribution and conservation status of this species, and draw up a plan for its future protection, including an assessment of whether *F. belalandaensis* is (i) appropriate for captive breeding and (ii) if this is feasible in the medium term.

Dr Townson has written an introductory article on the Belalanda Chameleon project for the NatterJack (see issue 184-186, May-July 2010). During 2010 fieldworkers have spent considerable time surveying for these rare animals and found a new population in S. Madagascar, although the total number of animals recorded

still remains very small. Prof Richard Griffiths (DICE) recently visited Madagascar re plans for the ongoing conservation and management of the Belalanda Chameleon, including discussions on *ex-situ* (captive breeding) options. A press release has been published in *Science Daily*. See: (<http://www.sciencedaily.com/releases/2011/02/110228090603.htm>)

The Belalanda Chameleon - 2011 Update



Surveying for the Belalanda Chameleon at night
Photograph courtesy Richard Griffiths

In January 2011 Madagasikara Voakajy and partners held an IUCN Red List workshop that assessed the conservation status of 74 Malagasy chameleon species. The Belalanda Chameleon (*Furcifer belalandaensis*) was one of four chameleons listed as Critically Endangered. Following the workshop, the project team visited southern Madagascar to assess the status and habitats of the species. At the time, the Belalanda chameleon was only known from two villages in the area, where it occurred in disturbed habitats. These habitats include non-native trees, which are sometimes used for charcoal production. Surveying for the chameleons must be done after dark, by searching trees and bushes for roosting animals using spotlights. Frequently, the chameleons

are located in the upper branches of trees, but they can often be persuaded to climb onto a long stick. Following the site meeting, recommendations were made for further surveys, and a few days later a third population of Belalanda's chameleon was discovered in another village.

In March, Madagasikara Voakajy and partners organized a three-day workshop to establish a species conservation strategy, with input from the IUCN/SSC Chameleon Specialist Group and the IUCN/SSC Sub Committee on Species Planning. The event was attended by herpetologists, politicians, managers and NGOs and the final product was a five year strategy beginning in 2012. Because Madagasikara Voakajy was already working on the species, some of the priority activities were already underway; monthly monitoring by students from the University of Toliara and molecular studies on tissues samples. A draft manuscript was produced in July, with Dr Chris Raxworthy (American Museum of Natural History) that described the morphology and ecology of *F. belalandaensis*. Further molecular work is underway in collaboration with Dr Raxworthy and Professor Miguel Vences (University of Braunschweig) to clarify the taxonomic position of the species.

Given the precarious status of the species and the lack of knowledge about its breeding biology, captive breeding is not considered to be a priority conservation action at present.



Belalanda Chameleon (Male)
Photograph courtesy Richard Griffiths

Blue Iguana Project

This CBC project grant was awarded to the Blue Iguana Recovery Programme (BIRP) in 2007, based on Grand Cayman, in order to help with the captive breeding and conservation of the critically endangered Blue Iguana (*Cyclura lewisi*).

The main purpose of the BHS-funded project was to help design and investigate the use of artificial retreats (or *refugia*) as a means of boosting conservation objectives, as it had been noted that artificial retreats played an important role in anchoring released captive-bred iguanas in protected habitat, also providing some defence against predators.

The final retreat design has been a great success, and is now in the production and deployment stage in the QEII Botanic Park and the Salina Reserve. Dr Townson recently provided a written progress report on the project for the NatterJack (Jan 2010), and a full report has now been published in the *Herpetological Bulletin*, 114, 2011. Essentially, the research and retreat production funded by this BHS project has resulted in a significant step forward for the survival of this species. In recent years there has been very significant progress; Doug Bell gave a presentation at the 2012 Amersham meeting, informing us of the huge success of the captive breeding and release programme, including the use of artificial retreats. BIRP can be congratulated for saving this magnificent species from extinction.



Adult Male Blue Iguana



MK 7 Retreat Buried & Ready For Use



Captive bred Blue Iguana Hatchlings



Blue Iguana Yearling



MK 7 Retreat on Site

New Projects for 2014

A new project has been funded in February 2014 entitled:

‘Headstarting of Agile Frog *Rana dalmatina* tadpoles at the Durrell Wildlife Conservation Trust, Jersey’

Partners are BHS, Jersey Amphibian and Reptile Group, Amphibian and Reptile Conservation Trust, and Durrell Wildlife Conservation Trust. Full details to follow.



Agile Frogs on Jersey
Photograph courtesy of JARG

Enquiries regarding applications for CBC project grants should be addressed to Dr Simon Townson (s.townson@imperial.ac.uk).

This issue was edited by Kim Le Breuilly June 2014