



Wildlife Middle East



Anthia duodecimguttata (Dr. Martin Hauser)

Wildlife Middle East News is published quarterly. It contains papers, reports, letters and announcements submitted by veterinarians, biologists, conservationists, educators, and other animal care professionals working with captive and free-living wildlife in the Middle East region. Contributions are not refereed, although every effort is made to ensure the information contained within the newsletter is correct, the editors cannot be held responsible for the accuracy of contributions. Opinions expressed within are those of the individual and are not necessarily shared by the editors. Guidelines for authors can be downloaded from www.wmenews.com

NEWS

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EDITORIAL

Welcome to the latest issue of WME news coming to you at the end of a long, hot summer! This issue sees a variety of topics covered by contributions from across the Middle East and hopefully there will be something of interest here for all readers. In past editorials we have tried to highlight the issues faced by the regions' environment that range from unsustainable development to plastic bag pollution. While these problems should still be in the forefront of public awareness, an article by David Stanton in this issue touches on the global illegal trade in endangered species. While this issue may not affect the lives of many in the Middle East there is no escaping the fact that the region is a global hub of the trade and those involved in the care of animals in the region will no doubt have encountered species that have fallen victim to profiteers and misinformed or uneducated end stage consumers.

Interpol estimates that the global trade in wildlife and their parts, which are used in medicines or for decoration, totals about US\$20 billion (Dh73.4bn) each year. It is the world's third largest criminal activity after drugs and firearms.

There are many reasons for the trade in wildlife (<http://www.traffic.org>) and these vary from country to country and species to species. While Yemen was considered one of the main consumers of rhino horn for ornamental daggers, richer countries may covet wildlife for medicinal reasons or more likely in the Middle East, as additions to private wildlife collections.

While many countries are signed up to CITES (Convention on the International Trade in Endangered species), legislation is only part of the solution. Enforcement of such legislation is governed by a willingness or ability to act on the part of the governments that have signed up to it. It is one of life's great tragedies that many of the countries most blessed with a rich natural heritage are often those most affected by poverty and so easily exploited by the demands of wealthier countries. While it is difficult to blame the poachers/trappers trying to scrape a living for their families it is easier to point the finger at the end user creating demand. Were it not for the unquenchable thirst for pangolin meat in South East Asia, rhino horn in Yemen or exotic animals for collections in the Gulf States then this demand would not exist. As always the solution lies in education.

Recent articles in UAE newspapers (<http://www.gulfnews.com/nation/Environment/10275308.html>) have highlighted the wildlife trade issue in the region and the authorities in Dubai are to be commended on their efforts to tackle the trade but as anyone on the coalface will know, a lot more needs to be done. This feeling was supported by a recent comment by Steven Broad

executive director of Traffic International, an NGO which monitors global trade in wildlife; *"There are anecdotal reports that the number of animals in trade is rising in the Middle East, but regulation of this trade requires a co-ordinated response across the region. The levels of wildlife trade through the Middle East region is an issue of concern that is sure to be thrown under the international spotlight with the forthcoming meeting of CITES, scheduled in Qatar"*

However, this issue is not all doom and gloom. Nancy Papatathanasopoulou gives us a progress report on the outstanding work of the Kuwait Turtle Conservation Project while attempts at conservation and education go on in Iraq with the environmental group "Nature Iraq". Declan O'Donovan reviews a listing of arthropod fauna in the UAE, a vital work in documenting biodiversity in the country. It is through projects like these that we must draw our inspiration and continue to work towards helping what is a remarkable and often overlooked part of the world in terms of natural history.

NEWSLETTER EDITORIAL TEAM

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WILDLIFE MIDDLE EAST NEWS OBJECTIVES

- Raising awareness of environmental and conservation issues affecting wildlife in the Middle East.
- Distributing information to enable better management healthcare and welfare of wildlife.
- Providing a central contact point for practical advice and information on wildlife management in the region.

KUWAIT TURTLE CONSERVATION PROJECT: TOWARDS KNOWLEDGE AND PROTECTION

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Introduction

Kuwait is a small country situated in the northwestern shore of the Arabian Gulf. Mainly an oil-producing country, it is not known for its soft, sandy beaches and a thriving coral reef, or for its sea turtle populations that live and reproduce there. And yet, all this exists, rendering its small offshore islets very important for marine biodiversity in the area. A closely intertwined relationship has always existed between the land and the sea. Pearlring and fishing traditionally dominated Kuwait's maritime activities. Today, some seventy trawlers catch what are amongst the most important shrimp catches in the world, exporting many tons all over the world. Land reclamation projects and development have modified the marine environment of the mainland, and home-grown yacht tourism has reclaimed the islet of Kubbar, which once provided nesting grounds for turtles (Meakins and Al-Mohanna, 2004), today only hosting nesting swift tern populations. Despite this, turtles are still observed swimming around Kubbar. In the last forty years, the population in the country has increased tremendously, and in Kuwait Bay alone, more than 10 square kilometres of intertidal habitat has been filled in for power generation stations, port development projects, recreation and commercial concerns to meet the needs of a developing society with over 60% of its population under 24 years of age (Al-Yamani et al, 2004).

In the framework of the Kuwait Turtle Conservation Project, sponsored by the TOTAL Foundation and TOTAL Kuwait and with the cooperation of the Voluntary Work Center Kuwait and The Scientific Center, researchers are now attempting to unravel the mysteries of sea turtle presence in the area. Population assessment, species assessment, nesting seasons and public awareness are some of the project's challenges.

What has been known for years was that Hawksbill (*Eretmochelys imbricata*) and Green turtles (*Chelonia mydas*) have been spotted nesting on offshore, uninhabited atolls like Umm Al-Maradim and Qaru (Meakins and Al-Mohanna, 2004). A beach in the Mina as Zour area has been hosting Hawksbill nesting grounds for several years as well, while the occasional Loggerhead (*Caretta caretta*) had been caught in fishermen's nets or a Leatherback's carcass (*Dermochelys coriacea*) found on beaches. Given the difficulty of access to the offshore islands most times of the year, mainly due to unpredictable weather conditions, the Kuwait Turtle Conservation Project took up the challenge to try and access the Islands by all means and monitor, as much as possible, in most months of the year. In cooperation with the Coast Guard, which mans the stations of Umm Al-Maradim and Qaru year-round, some results have arisen.

After almost one year of project life, the number of turtles nesting on each island every year is still unknown, but as research progresses it is hoped that this uncertainty shall be lifted. In July and August 2008, researchers on Qaru Island found 36 Green turtle pits. In November 2008, 50 pits in total were seen on Qaru, two of which were too small to be Green turtle nests. Could Hawksbills have nested here too?

Only Greens were observed nesting in Qaru in July and August 2008. Likely prompted by scorching sand temperatures of 48 Celsius, they dig enormous body chambers and lay their eggs. Due to the notorious Sarayyat winds in September and October, the team was unable to go to the island in search of hatching activity. The Coast Guard, however, spotted several green turtle hatchlings in the last day of August and photographed them, as did a team of divers who were friends of the Voluntary Work Center. No other reports for hatchlings were given in 2008.



Fig1. Qaru Island, July 2009. Rescuing a "stuck" turtle (Husain Al-Qallaf/KTCP).



Fig2. Nesting turtle tracks, Qaru Island (Husain Al-Qallaf/KTCP).

In Umm Al-Maradim, where both Green and Hawksbill turtles nested before the construction of the new Coast Guard marina, nesting season had not started by March 2009 and it certainly seemed long over in July 2008. Seven potential nests were observed on Umm Al-Maradim in July 2008. A hatchling's track, which did not seem to reach the sea, was observed as well, a fact that is not surprising given the massive bridled terns (*Sterna anaethetus*) colony which is nesting in the bushes right by the turtle nesting grounds. Bridled terns remain in search of food all night especially in view of a protein-rich hatchling to feed nesting and incubating parents at that time of the year.

The KTCP team's objectives for 2009 include:

- Population assessments.
- Species per island and per season to be determined.
- Interactions with predators and weather to be studied.
- Further investigation of coral reef.
- Satellite tracking.
- Nest monitoring with the aid of i-button* technology.
- Environmental education and press material.

The project will be ongoing until at least July 2011 and hopes to provide regular updates about its results and observations in Kubbar, Qaru and Umm Al-Maradim.

* i-buttons are small electronic devices inserted into turtles' nests

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CLINICAL FLUOROSIS IN CAPTIVE GERENUK AND BONGO ANTELOPE

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A persistent acute lameness with swellings of the metacarpal and metatarsal were noticed in 2 adult female bongos (*Tragelaphus eurycerus eurycerus*) from a herd of 2 males and 4 females. Similar swellings were subsequently observed on the legs and ribs of one adult male bongo in the same enclosure and multiple adult gerenuk (*Litocranius walleri*) throughout the farm. Body condition scores dropped and the animals were observed to spend less time standing, feeding and suckling their calves. All animals were fed a locally produced browser pellet together with fresh browse, alfalfa hay, locally grown grass, a mineral lick and water with added mineral and vitamin supplement. The animals had been receiving the pellet for 3 months at the time clinical signs manifested. Clinical examination of bongo under sedation revealed hard, warm, bilateral swellings on the mandible, ribs, metatarsus and metacarpal. Dental examination was normal. Radiography of the distal metacarpus showed marked periosteal proliferation. Blood samples showed a mild anaemia with a normal leukocyte count and increased tissue enzymes.

A surplus male gerenuk exhibiting clinical signs was euthanased. Post mortem revealed a marked proliferative periosteal hyperostosis of the metatarsals and metacarpal bones (Figure 1 and 2). Histological samples (International Zoo Veterinary Group Pathology department, Leeds, UK) confirmed the presence of marked periosteal proliferation while the kidneys and parathyroid glands were normal. A working diagnosis of fluorosis was made and samples of tissue, water, feed and supplements were collected for analysis. Turnaround times were 3 weeks for feed samples and 3 months for tissue samples. The results of bone and feed analysis are summarized in Table 1. It was recommended to change all feed sources during this time period. Unfortunately while all grasses and browse sources were changed the concentrate pellet was fed at lower levels due to poor availability of an alternative concentrate source. In addition to dietary changes, clinically affected animals were treated with boron and non steroidal anti inflammatories. Despite treatment and dietary changes one female bongo died. The carcass was submitted to another veterinary surgeon for a second opinion; however, metacarpal bone samples were obtained by the author for fluoride quantification. Once a diagnosis had been made to the satisfaction of zoo management the pelleted diet was removed. The animals' lameness improved rapidly over 7 days with subsequent weight gain and increased activity levels.

There are few reports of fluorosis in free ranging non domestic species (Clarke 2006, Schultz 1998) and none affecting zoological animals. Radiographic, haematological and histological findings in both species were consistent with those described in other animals (Thompson 2007, Suttie 1972, Bharti 2007, Hoogstratten 1965). Bone biopsy and urine fluoride levels could have been used to aid diagnosis in this case, however, lack of local lab facilities made their use impractical. Histopathology and clinical findings led to a presumptive diagnosis which was confirmed on receipt of feed analysis and finally tissue analysis. Unfortunately satisfactory dietary changes were not made in line with advice and the animals' condition deteriorated. Treatments such as the use of boron in the diet had no major effects on clinical condition. This is unsurprising given the severity of the clinical signs and the levels of fluoride in the diet which were 6 times higher than those fed experimentally to buffalo calves on boron treatments (Bharti 2007)

Levels of fluoride in bone samples analysed were extremely high. Normal values for cattle are considered to be 400—1200 ppm while levels in cattle affected by chronic fluorosis are 3000- 5000 ppm. Factors that affect the levels of fluoride required to produce toxicity include the amount of fluoride ingested, duration of exposure, bioavailability of fluoride, species, age and diet of species concerned (Thompson 2007). Fluoride absorption from the digestive tract is dictated in part by the chemical form in which it is ingested. Sodium fluoride has traditionally been used in toxicity studies and is up to 5 times more biologically available than fluoride compounds commonly found in feed or environmental sources. Traditionally most toxicity studies have used sodium fluoride and suggested that in cattle, levels above 10ppm in the diet can lead to subtle dental changes (Suttie 1980) while levels over 50ppm can lead to gross periosteal hyperostosis. While it is not known which fluoride compound was present in the browser pellet it is clear that levels of 730ppm greatly exceeded safe levels of even the least

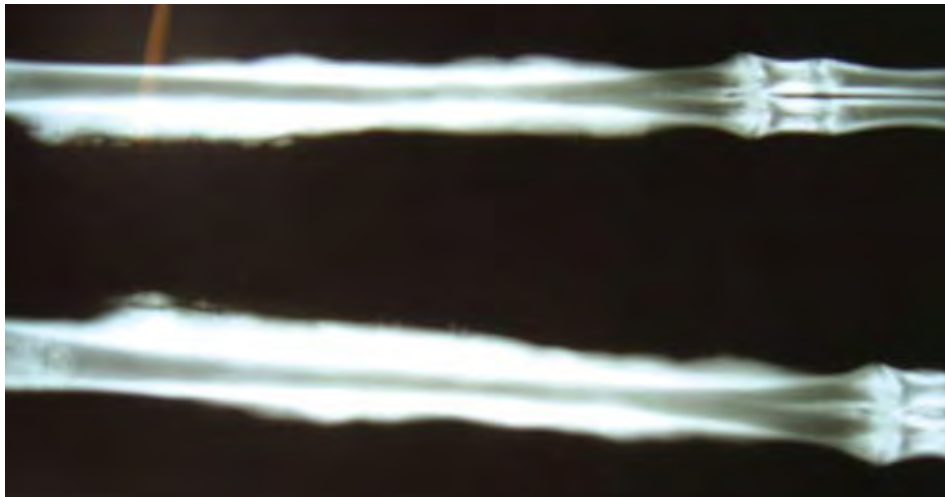


Fig1. Dorso-ventral radiograph of metacarpus from a gerenuk (*Litocranius walleri*) antelope showing periosteal proliferation



Fig2. Post mortem appearance of metacarpus from a gerenuk (*Litocranius walleri*) antelope showing periosteal proliferation

biologically available compound. Sources of excess fluorine in processed foods normally result from contaminated raw materials (D. Salmon, Mazuri foods, pers comm.) or vitamin and mineral premixes that may be contaminated or added in the wrong proportions.

This case highlights the importance of quality control in the production of pelleted foods for animal consumption.

Acknowledgements

Thanks to John Edwards from the Veterinary Laboratories agency for his help in facilitating the fluoride analysis on bone samples and Dave Salmon from Mazuri foods for his insights into food manufacturing.

References

Full references are available on the website www.womenews.com

Table 1: Summary of results for fluorine levels in diet and bones of gerenuk and bongo affected by suspected clinical fluorosis.

Sample	Fluoride levels ppm Dry matter
Browser pellet ¹	730
Bongo metacarpus ²	6000
Gerenuk Metacarpus ²	8900
Gerenuk Mandible ²	7500

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NATURE IRAQ HOSTED FIELD ORNITHOLOGY AND BOTANY COURSE WITH BIRDLIFE INTERNATIONAL AND THE ROYAL BOTANIC GARDENS EDINBURGH IN IRAQI KURDISTAN.

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A 10 day training course, hosted by the Iraqi Environmental group, Nature Iraq, was conducted from the 14th to 23rd of April in Iraqi Kurdistan for over 20 bird and botany field biologists. This double course focused on bird and botany identification in the field, survey methodology and assessment of conservation issues. Trainees from various facilities and institutes all over Iraq attended this course, which included extensive field visits to areas in the Kurdistan governorate of Sulaimani.

Instruction for the ornithology portion of the course was provided by Richard Porter, an expert on the birds of the Middle East with BirdLife International and an advisor to the Nature Iraq Biodiversity Program. This was the first time that Richard had visited Iraq and it was a very exciting experience for Iraqi bird experts and enthusiasts. This was their first chance to have a "face to face" and exchange valuable information on bird identification and conservation with one of the top bird specialists in the world. The presence of Richard had special importance because it showcased Nature Iraq's role in protecting and conserving Iraq's environment - especially those areas and habitats that are important for birds. It may also be an indication of a future when opportunities increase for outside birdwatchers to visit Iraq and see its unique bird populations and ecosystems.

For the botany portion of the course, the instructors were Tony Miller and Sophie Neale from the Royal Botanic Gardens in Edinburgh, Scotland. This was their first visit to Iraq. Their presence and training was significant because Nature Iraq has initiated with other Iraqi government and university stakeholders, a project to complete a modern Flora of Iraq. This will be a massive, multi-year project that will involve extensive surveying of Iraq's botanical resources and new methodologies are needed to complete this work. Their course focused on innovative field collection techniques, taxonomy and habitat conservation assessments. They provided a lot of advice that will be reflected in changes to the up-coming Key Biodiversity Areas survey that Nature Iraq conducts twice a year throughout the country.

During the course a number of diverse mountain, wadi and riverine habitats were visited including Homer Qawm, Zewe and Peramagroon, Kobi Qara Dag, Chami Rezan, Darbendikhan Lake, De Lezha, Chamchamal, Ahmed Awa, Waraz, and Mawat. The information collected will be included in Nature Iraq's extensive database on Iraq's flora and fauna.

In terms of bird observations the training team found a wide spectrum of breeding birds in these areas that are listed as globally threatened or near threatened species by the International Union of Conservation on Nature (IUCN) or are species of conservation concern. These included: Egyptian Vulture (*Neophron percnopterus*) – Breeding population of over 30 pairs; Asian Imperial Eagle (*Aquila heliaca*) – on migration; Lesser Kestrel (*Falco naumanni*) - several breeding pairs and flocks of up to 75 on migration; Cinereous Bunting (*Emberiza cineracea*) – on territory at three sites; Pygmy Cormorant (*Phalacrocorax pygmaeus*) – on migration; Semi-collared Flycatcher (*Ficedula semitorquata*) – 10 pairs located and probably breeding, and European Roller (*Coracias garrulus*) – possibly breeding. As a result the known breeding range was extended for over 30 species.



Fig1. Tony Miller with students (A. Bachmann)



Fig2. Training in Kurdistan (R F Porter)

From a botanical point of view the areas visited during the course were lush and green (Iraq has been facing a drought over the past two years but recent rains had covered the Kurdish mountain in grasses and herbs). Tony Miller of the RBGE stated, "When we got down to looking at the vegetation in detail we found it to be rich in species, on a par I would say, with some of the richest areas I have visited in the Middle East. In particular, I was impressed by the changes in species composition across fairly small distances as we changed altitude or moved, for instance, from limestone to serpentine soils."

Though the course was short and scheduled at the best time for botany work, the overwhelming impression was that Iraq would have many novelties and new plants to be found. Although there are signs in many areas of deforestation (usually attributed to Saddam's policies) there were also signs of woodland management practices, such as the extensive coppicing of oak woodlands.

As a result of the course, many additional trainees have been identified with a solid baseline of skills in field ornithology and botany and Nature Iraq intends to tap into these new recruits for its up-coming Key Biodiversity Areas (KBA) summer survey. In addition, with many Iraqi and international partners, Nature Iraq is involved in a new effort to complete a modern Flora of Iraq and many of the methodologies presented in the course will be implemented during this effort. It is also hoped that such trainings in Iraq will become a permanent fixture of the spring Nature Iraq training program and we hope to repeat these and other field courses in the spring of 2010.



Fig3. THomer Qawm (A. Bachmann)

RAT CONTROL IN SENSITIVE WILDLIFE ENVIRONMENTS

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In Imperial Chinese culture, the rat is the first of the twelve animals of the Chinese zodiac, while in Indian tradition rats are recognized as the vehicle of Lord Ganesh and a rat's statue is always found in a temple of Ganesh. In most Western cultures, however, the rat is almost always associated as a pest or vermin.

The two most common rat species within the Middle East are the brown rat (*Rattus norvegicus*) and the black rat (*Rattus rattus*) which was responsible for the Black Plague in Europe during the Middle Ages. As a species, these animals adapt and reproduce very quickly when adequate resources are available. Within zoological collections they are particularly good at utilizing the water, shelter and food that is always available. The control of these pests is of critical importance due to their ability to act as vectors and reservoirs of disease that can affect both the animals and people (zoonosis). Health issues aside, rats can cause huge economic damage to facilities through soiling of foods, damage to property, risk of fire through eating electric cables and aesthetic/visual affects within displays, to name but a few.

Any control of rats, however, needs to be done through an Integrated Pest Management (IPM) system. Within zoological collections this is particularly important to avoid any secondary poisoning or nontarget concerns. Although many organisations rely on in-house control, it is always better to utilise the services of reputable and proven professional pest control companies. National Pest Control (NPC), Dubai was requested to design an IPM for a multi species animal collection which was having severe rat infestation problems throughout the whole of their facility.

Having carried out a thorough survey of the property they found both rat species (*R. rattus* and *R. norvegicus*) nesting and active in and around approximately 90% of the animal enclosures examined as well as the main feed stores, workshops and associated facilities. It was conservatively estimated, based on the number of burrows, nests and other activities that the infestation was severe and probably in the hundreds within the treatment area. The high abundance was attributed to free availability of food sources, refuge locations directly in and around the enclosures and easy access into the buildings. It was also found that there were previous historic attempts at control, using different trapping techniques. These were successful in trapping high numbers in specific areas but were ultimately unsuccessful as it allowed the re-colonisation of the areas by rats from neighbouring enclosures which were not controlled.



Fig1. While biological control should be encouraged, the correct poison is imperative to avoid secondary non-target poisoning.



Fig2. Rat damaged electric wire (Dinesh, NPC)

Based on these findings, a detailed IPM was designed and forwarded to the client. This was based on four main themes. Firstly, rodent proofing of the enclosures. Secondly, eliminate available refuges, which meant removing stored equipment, timber and plants being used by the rats for nesting and shelter. Thirdly, food availability was reduced or removed by making alterations to the way some animals were fed and housed. Fourthly, destroy the rats by a mass simultaneous intensive treatment program to all areas over a 6 week period. This included the use of hundreds of rat traps as well as poison which was placed inside fixed tamper proof rat bait stations.

As there was a genuine concern of secondary and nontarget poisoning with standard rodent poisons such as brodifacoum, special arrangements were made to import the rodenticide known as Fastrac from Bell Laboratories. The active ingredient of Fastrac (0.01% Bromethalin) has been designed to eliminate the risk of accidental non target secondary poisoning while at the same time providing high levels of palatability and effective control to rats.

Following some revisions to the treatment protocol over the 6 weeks of intensive treatment, it was estimated that the program had an overall 95% control level throughout the facility. As part of the IPM it is essential that vigilance is maintained and control through trap maintenance is continued. Technical evaluation is also regularly carried out by the NPC technicians in order to determine areas of concern and provide remedial action plans and fine tune treatment regimes as required.

National Pest Control is a leading public health pest control service company based in Dubai, United Arab Emirates. It's a member of the British Pest Control Association, National Pest Management Association USA, is ISO 9001 200, and also represents some of the world's top pest control industry manufactures. For further information you can contact Mr. Sean Baker: seanbaker@natpest.com.

RED FOXES IN THE MIDDLE EAST; A CALL FOR SAMPLES.

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Introduction

The red fox (*Vulpes vulpes*) is the most widely distributed terrestrial carnivore in the world, occurring throughout most of Asia, Europe, North Africa and North America in habitat conditions ranging from arctic tundra to temperate deserts (Larivière and Pasitschniak-Arts 1996). The most common coat colour is a red-brown with a distinct white tip at the end of the tail, and black on the back of the ears and on the lower legs. Red foxes in the Middle East are typically a lighter colour, which likely results in lower heat absorbance and possibly better camouflage (MacDonald et al. 1999). The Middle Eastern red fox is also considerably smaller when compared to its more northerly relatives and this may reflect lower food availability in more barren desert environments (MacDonald et al. 1999). Although the red fox is one of the most common carnivores in the region it is relatively little studied. The Canid Diversity and Conservation Group, based at the University of California at Davis (<http://www.vgl.ucdavis.edu/cdcg/home.php>) is working on a project looking at the relationship between red fox populations in many locations around the world. We are seeking red fox samples from the Middle East to aid in this.

The Project

We use red fox samples (tissue, blood, hair etc) to uncover the genetic relationship of red fox populations in different locations. Our results so far have allowed us to identify three distinct lineages of red fox in North America (Aubry et al. in press). These lineages were isolated in disjunct forest refugia during the last glacial period. One of these lineages, mainly found in Alaska and Western Canada, is more closely related to populations in Eastern Siberia than to other North American populations. This is best explained by the fact that during the last glacial maximum the red fox population in Alaska was separated from the rest of North America by an ice sheet. While at the same time the sea level was lower, allowing the formation of a land bridge between Alaska and Eastern Siberia, facilitating animal movement between the two areas. Results such as these can aid in understanding the evolutionary relationship between populations and how past climactic events have impacted modern populations.

Our genetic analysis will answer many important conservation questions such as;

- Is a population genetically distinct?
 - If so does it require additional conservation effort?
- Is a population relatively inbred/outbred.
 - This will give an indication of the genetic health of the population.
- How are populations between two areas related?
 - This can highlight areas of gene flow (animal movement) or barriers to gene flow that might not be otherwise apparent.

We are seeking red fox samples (tissue, blood, hair etc) from throughout the Middle East. Please contact Mark Statham (statham@ucdavis.edu) for further information. Any people/organizations we receive samples from will be appropriately acknowledged in resulting publications.

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Fig1. Red fox pup.



Fig2. Common marmosets (*Callithrix jacchus*) were found to be particularly susceptible to encephalomyocarditis virus

ENCEPHALOMYOCARDITIS VIRUS IN THE UAE

Tom Bailey and Declan O'Donovan

We would like to alert veterinarians and managers of wildlife collections that encephalomyocarditis virus (EMCV), a picornavirus that causes myocarditis in nonhuman primates, elephants, pigs and other species was diagnosed in the UAE in 2006. In 2005 and 2006 significant mortality occurred in a collection of common marmosets (*Callithrix jacchus*) and squirrel monkeys (*Saimiri spp.*) in Dubai. Encephalomyocarditis was confirmed following pathological investigations by the Central Veterinary Laboratory (Dubai) and International Zoo Vet Group (UK). Pathological, virological and epidemiological features of this outbreak will be reported in due course in a doctoral thesis that has been completed at the University of Vienna. The reservoir host for EMCV is considered to be rodents and controlling rodent populations around nonhuman primates is considered important in preventing infection (Thompson et al, 2001). Vaccination of susceptible animals is also important (Vogelnest et al, 2006). Since a stringent rodent control program and annual EMCV vaccination was introduced at the Dubai collection no further mortalities from EMCV have occurred. It is important to note that EMCV can infect humans, although the condition is not highly contagious for people and infections are mainly asymptomatic.

Further information

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OPPORTUNISTIC WILDLIFE TRADE IN YEMEN

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Keywords: Wildlife Trafficking, Conservation, Yemen, Suq Nuqum, Sana'a

In conservation circles, Yemen is notorious as one of the world's top two markets for rhino horn, and by some estimates the Yemeni trade in illegal horn for *jambiyyah* (traditional dagger) handles caused a 96% decline in East Africa's Black Rhino (*Diceros bicornis*) population between 1970 and 1992. Yemen is also the main source for CITES-protected Arabian Leopards (*Panthera pardus nimr*) and other endangered wildlife. Endemic species including Socotra's "Blue Baboon Spider" (*Monocentropus balfouri*) and the Yemen Veiled Chameleon (*Chamaeleo calyptratus*) are popular in the pet trade and are smuggled to Europe and North America where they command impressive prices. In addition to this lucrative international trade in wildlife and wildlife products, Yemen traffics a significant number of wild birds, mammals, and reptiles domestically. This trade is largely opportunistic as evidenced by the variety of wildlife that is offered for sale at roadsides and intersections. While there has been little, if any, formal study of this traffic, recent tallies of the animals that pass through the Nuqum animal suq in Sana'a show that thousands of animals of numerous species are captured and sold each year in Yemen.

When my student TK informed me that "...about 30 Golden-winged Grosbeaks..." (*Rhynchostruthus socotrana*) were being offered for sale at Nuqum I investigated their claim. Piqued by the fact that this species had recently been declared as Yemen's national bird, I asked them to take some pictures. The birds were in fact Arabian Golden Sparrows (*Passer euchlorus*) but this experience has caused TK to continue documenting the animals that pass through Nuqum with weekly lists and photographs. In the three months since their initial visit on March 16th of this year, they have documented 36 species of birds, 13 species of mammals, and 7 reptile species - not counting those which have been imported such as squirrels and parrots - passing through Nuqum.

The merchants who sell these animals, like the people who catch them, are simply trying to make a living in a weak economy. However, neither have much regard for the animals' welfare, and the manner in which these creatures are handled and kept, sometimes for weeks, is horrendous. The traders are ignorant of many of their animals' needs and not surprisingly, many die of starvation, dehydration, injuries sustained in capture and handling, and diseases contracted in the appalling circumstances in which they are housed.

Customers buy the animals for a variety of reasons. Yemen Linnets (*Carduelis yemenensis*), for example, are favoured as cage birds since they are the only Yemeni birds that sing in captivity. Others, such as Grey-headed Kingfishers (*Halcyon leucocephala*) have novelty value. Still others are used in traditional medicine - porcupine blood, for example, is believed by some to cure diabetes and is taken with juice. Many species including partridges, hyraxes, quails, and the various doves end up on buyers' dinner tables. Owls and hawks are considered charismatic and although the more valuable species such as Peregrines (*Falco peregrinus*) are not traded at Nuqum, at least 12 species of raptors have passed through the suq in the past three months. Some animals such as the baby baboons that frequently come up for sale are 'cute,' and would-be owners buy them without regard for the sad circumstances of their capture (i.e. the mother is usually



Fig1. The condition of this Barn Owl is typical of the animals sold at Nuqum animal suq.



Fig2. Wild caught Caracals are frequently for sale at the Nuqum animal suq.

shot by the captor) or the logistics of keeping them into adulthood. Finally, I suspect many animals are offered for sale simply because the hunter has managed to capture them. Two Coots (*Fulica atra*), for example, came up for sale during the week of April 16th and remained in the market unsold for the two months it took them to die. Three facts have surfaced as a result of TK's sleuthing: 1) Yemen's internal wildlife trade is extensive in both the number and variety of animals involved, 2) many animals suffer needlessly as a result of inhumane handling and care, and 3) the issues woven into this problem; ignorance, poverty, animal welfare, and sustainability are complex, and therefore solving the problem will also be complex. Other than TK's ongoing research, little is currently being done to stem this pernicious trade. Yemen's Minister for Water and the Environment, HE Abdulrahman al Eryani, states that enforcement is out of his ministry's hands and he advocates media exposure as a means of raising awareness. Save Yemen's Flora and Fauna (SYFF), a young and vigorous NGO, is keen to take the lead in an anti-trafficking campaign and is developing an action plan to stop the trade. Of course, the most important thread in a successful campaign will be finding alternative sources of income for the impoverished people who catch the animals and those who sell them. However, creating opportunities in a country where more than 40% of the rural population lives on less than \$1 per day and where there is rising unemployment won't be easy, yet it must be done if we are to slow the flow and preserve Yemen's unique biodiversity.

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Fig3. Porcupines are traded for food, medicine and ornamentation (TK).

Arthropod Fauna of the UAE Volume 2

Antonius van Harten ISBN 978-9948-15-090-9

Having reviewed "Arthropod Fauna of the UAE Volume 1" for WME News Vol 3 Issue 1 over a year ago I was amazed at the detail and dedication of the contributing entomologists to this project. With the arrival of Volume 2, I was interested to see whether the same level of accuracy and detail would be included. I was not disappointed and was glad to find that the high standards set in Volume 1 were again maintained in Volume 2 and that an equally high number of new species to the UAE and science are reported here. This book describes 63 families (making a total of 125 different families for both volumes) of which 26 families had not been recorded from the UAE previously. In total there has been an additional 390 new species added to those already known to the UAE. Of these, 83 species and 2 subspecies have been identified for the first time as new to science. As with Volume 1, descriptions, identification keys, plates and figures are included to help future zoologists and entomologists who might work in the region in their identification process.

Although members of the Pseudoscorpiones were first reported from the Arabian Peninsula as far back as 1882, it wasn't until this publication that they were reported from the UAE when 12 species belonging to five families were identified. Two species were reported as new to science and two as new to the Arabian Peninsula.

One of the largest families of beetles studied were the Carabidae of which there were 7,858 specimens collected. From these there were 70 species identified to species level of which 62 were not reported previously from the UAE. However, as most specimens were collected using light traps, it was not clear whether all specimens collected originated from the UAE or neighbouring countries. Conversely as the light trap was the main source for specimens it was felt that there were probably many more terrestrial species which were not identified.

For the bees of the UAE (Order Hymenoptera, superfamily Apoidea) a total of 100 species were identified to species level and 45 of these were recorded as new to the UAE. As bees are bound to certain qualities of their habitat such as flowering plants, and numerous species of those recorded were from single specimens, it is felt that in time many more bee species will be identified for the UAE.

Perhaps the largest family of lepidopterans reported in this book are the Noctuidae of which 169 species were reported from the UAE and three of these are new to science. Although many parasitic species were described from different Orders such as those from the Lepidoptera, which could have serious economic impact on agriculture, of concern to zoological collections was the finding of a single larva of the *Oestrus variolosus* (nasal botfly) from an ibex (*Capra ibex nubiana*). Although only a single specimen, there is anecdotal evidence of infestation of Arabian oryx (*Oryx leucoryx*) with similar parasitic species.

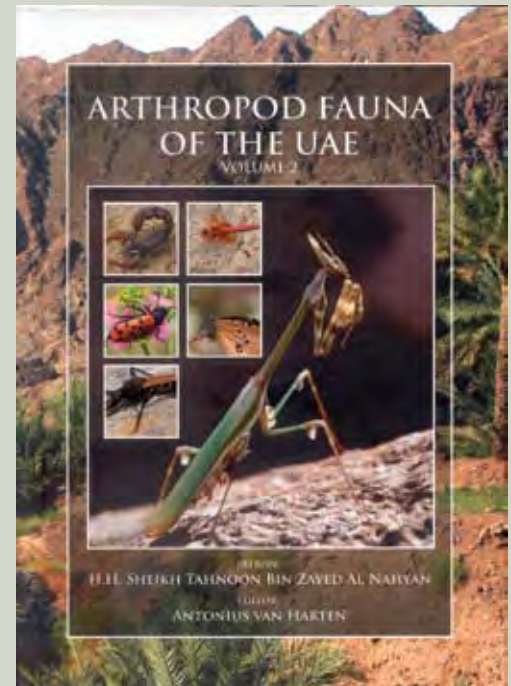


Fig1. Arthropod Fauna of the UAE Volume 2.

Antonius van Harten and colleagues have again produced a volume of papers which will be indispensable to future entomological studies within the UAE and Middle East in general. It is also heartening to see the support offered by Sheikh Tahnoon Bin Zayed to this project. While not a coffee table book it is a must have for anyone interested in arthropods in the Middle East.

Reviewed by Declan O'Donovan

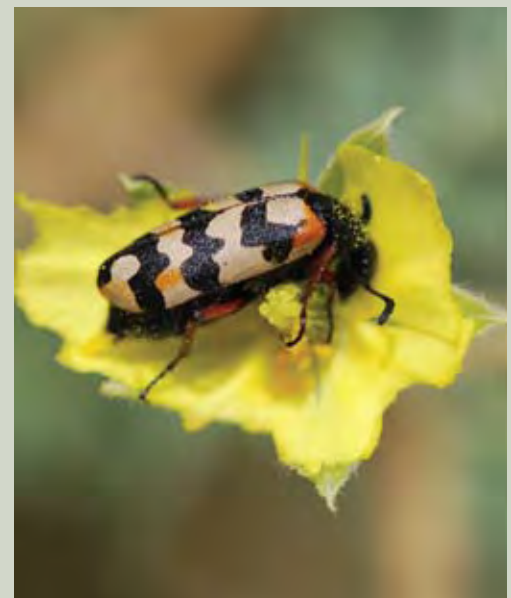


Fig2. Meloidae sp. (Martin Hauser)

REVIEWS AND NEWS

FATAL POLLUTION

Dr. U. Wernery

Central Veterinary Research Laboratory (CVRL)
Brochure 3rd Edition

Twenty years ago when the sun rose above the horizon of the Gulf water, I used to jog on the beautiful, clean, white-sanded stretch of beach in front of the Burj Al Arab. Nowadays I do not go there anymore. It is too polluted by careless beach goers who litter the area in an unimaginable manner. There are numerous other former picturesque places like Hatta pools or Jebel Ali desert areas which have become a dumping place for campers, wadi bashers and others.

2009 is again a sad year because so many animals have already died from plastic ingestion. When is all this ever going to end?

The complete version of this document is available on our website:
www.wmenews.com.

PERSECUTION OF RÜPPELL'S FOX IN CENTRAL SAUDI ARABIA

Peter L. Cunningham



Fig1. Adult Rüppell's fox displayed from vehicle sign posts in Saudi Arabia (P Cunningham).

Very little is known about Rüppell's foxes (*Vulpes ruppelli*), especially population trends and threats. Threats include droughts, overgrazing, habitat loss, competition with red fox, domestic dogs and cats; canine diseases and associated parasites and collateral damage during poisoning and trapping for other carnivores. On 9 and 15 July 2008 I saw 4 adult Rüppell's foxes displayed from vehicle sign posts approximately 50 km north of Riyadh (Figure 1). Local youths use the area for dune bashing and although it could not be confirmed if the foxes were pursued and killed locally, all the carcasses displayed typical vehicle impact signs. Usually such displays of predators elsewhere indicate active persecution by humans. Observations of domestic dogs being chased on the dunes probably indicate the fate of the Rüppell's foxes adding an additional threat to the species. For more information see the full article:

Cunningham, P.L. 2009. Persecution of Rüppell's fox in central Saudi Arabia. *Canid News* 12.3 [Online]: 1-5.

