



GAZELLE

مجموعة دبي للتاريخ والطبيعي

The Price of Success

An abundant resource attracts exploitation. In the past six years or so, the intertidal gastropod *Turbo coronatus*, normally found on hard surfaces (beachrock or bedrock) along the UAE coasts, has colonized the remaining mangrove channel at Khor Zawra in Ajman in increasing numbers. There it has occupied not only its customary upper littoral-lower intertidal range; it can also be found in the mid-intertidal zone, including the floor of the mangrove forest itself.

This is noteworthy because *T. coronatus* is not found in any other UAE khors. How and why it became a successful colonizer of Khor Zawra remains speculative.

T. coronatus was first noticed in early 2008 and numbers have increased progressively since then. However, a recent visit to Khor Zawra suggests that *T. coronatus* (formerly *Lunella coronata*, #89 in *Seashells of Eastern Arabia* (Bosch et al. 1995)) may now be paying the price for its success.

In January 2013 large numbers of *T. coronatus* were found to be covered by encrusting organisms, especially barnacles, tube-building worms and small mussels.



***T. coronatus* heavily encrusted by barnacles, tube-building worms and small mussels.**

T. coronatus was also a target for temporary attachment by other intertidal gastropods that favor hard substrates, including *Planaxis sulcatus* and *Clypeomorus persicus*.

The impression given is that those other organisms have somehow "learned" to use *T. coronatus* for their own benefit. The encrustations must inevitably impose a cost on *T. corona-*

tus by increasing the energy required for it to locomote and to hold its position on the substrate against the movement of small waves and current, and possibly even by interfering with shell growth. A theorist might expect that these pressures would cause *T. coronatus* to favor higher intertidal zones that are generally less hospitable to most of the encrusting organisms.

Report by Gary Feulner

Inside this month

- Page 2:** Upcoming Field Trips, Our Next Speaker (Feb)
- Page 3:** Field Trip Report: Musandam/Ghaf Tree
- Page 4:** Field Trip Report: Camel Farm Visit
- Page 5:** Field Clips: Scorpion Sting - Cautionary Tale
- Page 6:** Field Clips: Falaj Bridge
- Page 7:** Recorders, Member News, DNHG Field Trip Policies
- Page 8:** Programme, Committee, Membership

Contributors

The Editor would like to thank the following for their reports and contributions:

Gary Feulner
Sonja Lavrenčič
Jackie Strick

Mairead Porter
MaryAnne Pardoe
Peter Nagy

Ras al Khaimah Trip

Date: Fri 1 & Sat 2 Feb 2013
Availability: 26+

This is the first of a series of trips planned to give DNHG members some insight into the culture, history etc. of Ras Al Khaimah.

Friday 1st February: Turn up at the Dhayah Fort Guest House around 12 midday and have lunch. Then the owner, Ali Monsouri, will take us on a walk around the ancient graves in the area and a walk around his date farm. Early arrivals can go up the hill in front of the guesthouse to the Dhayah Fort for an excellent view of the area and learn how it was under siege in the recent past. Also optional are walks up the slopes behind the guesthouse. **Sunset: 17.28.**

Starting from the Dhayah Fort, at 9 a.m. on Saturday 2nd February, Christie Grieve from RAK will introduce us to Al Jeer/ Sha'am and Shimal. We then go to the Fort/museum in the city centre to learn more about the sites we have visited. The old mosque and Jazirat Al Hamra can also be visited. The aim is to finish about 2/3 pm depending on time spent on sites/lunch.

Travel up from Dubai will take about 2+ hours - 90 minutes on the Emirates Rd (E311) and then remaining time to head north through RAK to Dhayah Fort area. Lat 25°53'3.35"N Long 56° 3'39.32"E for those with Google Earth.

Tadoba Tiger Sanctuary

Date: Thurs 28 Mar – Tues 02 April 2013
Availability: 18

Departing on Thursday 28th March and arriving on the morning of Friday 29th March. The first safari will be on Friday afternoon followed by 2 safaris each day from Saturday to Monday, one in the morning and one in the afternoon. (Safari timings normally will be morning 6:30 to 10:30 and afternoon 2:30 to 5:30.)

On our way to Tadoba on 29th morning we will visit a very old Shiva temple

The cost estimate provided is for a group of 18 which is **AED2350 per person** which includes all accommodation (4 Nights/5 Days) + all meals (breakfast, lunch and dinner). Flights not included in the price.

Those interested in going on the trip please email:
Nirjhar Chakraborty on nirjharc@emirates.net.ae

Copy to Lamjed El-Kefi on lankefi@emirates.net.ae

Our Next Speaker

Date: Sun 3 Feb 2013

Speaker: Rima Jabado

Topic: Sharks in the UAE: results from a two-year study investigating shark fishing and the trade in shark products

About Rima: Rima Jabado is a marine ecologist and holds a Masters of Applied Science in Natural Resource Management.

She has over eleven years experience in marine research, wildlife monitoring and conservation projects from around the world focusing on behaviour, feeding ecology, migration patterns, habitat use, population genetics and rehabilitation of various species.

She has been living in the UAE for five years with a goal to develop research programs focusing on the marine environment and its protection. She is currently undertaking her PhD research on shark populations in the Arabian Gulf, conducted through the UAE University in Al Ain, which is the first ever long term research project to be completed on elasmobranchs in the region.

She is the Lead Scientist in the Gulf Elasmobranch Project which has been running for almost three years.

Nepal Hill Country

Date: 29 Mar - 6 April 2013

Availability: Limited to 10 people. Booking required to secure your place

Contact: Gary Feulner: gfeulner@gmail.com or 04 306 5570

Experience the verdant scenery and village life of Nepal's hill country – traditional houses, mountain trails, terraced cultivation of rice, corn and millet, footbridges across rivers, water buffalo milk, temple ceremonies, traditional dancing, and more – including 4 days home-stay and optional day hikes. Also birds, butterflies, etc. Sightseeing in unforgettable Kathmandu to start. Return via highlands of the upper Sunkosi River, with temple visit and a detour to the Chinese border. Total 9 days 8 nights.

Our visit will include a mix of touring by vehicle, day hikes, cultural interaction and natural history observation. In the hill country, at Makadum in Ramechhap District, our host will be Narayan Karki, a former DNHG member known for his energy and enthusiasm, who has a wealth of knowledge about village life and customs. (NB: This will be a customized visit. The village area is part of the Indigenous Peoples Trail network, but that initiative has not yet been developed into standardized commercial offerings.)

Limit 10 participants. Approx. basic cost: AED 2300 plus airfare (est'd AED 1500) and Nepal visa (AED 150). For more details and itinerary, contact Gary Feulner: gfeulner@gmail.com or 04 306 5570

Musandam by Dhow

Dhow trips to the Musandam peninsula are a regular feature in DNHG field trip programme, but this was the first time that we organised a two-day trip which allowed us to get out of the usual tourist routes and deeper into the Musandam peninsula.

Our first stop was Lima rock, where we had lunch followed by some snorkeling and kayaking around the rock. On the way to our next stop and night destination, deep in the long fjord of Khawr Al Hablayn, we tried some fishing but with no luck – the stream was too strong and the fish too clever for our clumsy attempts.

To keep us busy during the journey Captain Suleiman took out some giant oysters and we all gathered around him in excitement, looking for pearls. Each oyster had a small, fragile crab living inside in perfect symbiosis with the oyster – but no pearls. Captain eventually found a tiny one, before we ate oyster meat, delicious with some lemon juice. At the end of the cruise, a lucky few took home the oyster shells as souvenirs.



We next dropped anchor in one of the side fjords of the deep Khawr Al Hablayn fjord. Its calm protected waters and steep rocky sides made it look like a lake. For dinner the crew took us to the beach to enjoy a barbecued meal around the camp fire. The journey back to the boat was spectacular as we were surrounded by bioluminescent plankton. Every move of the water produced sparks and the boat drew a luminous trail behind.

Sleeping onboard, under the stars, was a magical part of the adventure. The dark night sky with the Milky Way and later almost full moon, the reflections on the calm waters and the gradual change of colours in the morning all contributed to making the experience unique.

After breakfast we sailed past the far end of the fjord to a small village. Through calm, rock-reflecting waters we then proceeded to Mansan village, where we stopped for a stroll, some exploring and shelling. On our way back we stopped in Lima for some more swimming, snorkeling, kayaking and fishing. Captain Suleiman was very successful this time and filled the cool box with fish he caught. After lunch we started our journey back to Dibba to disembark just before the dusk, after a wonderful two days of calm and nature.

Report & image by Sonja Lavrenčič

Dubai-Abu Dhabi Desert

Prosopis cineraria, commonly known as the Ghaf tree, is an indigenous species of the UAE, Oman and Saudi Arabia. It is a drought-tolerant evergreen tree which grows in sandy soil and on the margins of gravel plains. The presence of Ghaf trees is an indication of underground water. They can grow up to 10 metres high and have long tap roots that draw up the underground water.

While camping on the Dubai-Abu Dhabi border we were witness to the unsustainable practice of lopping of Ghaf trees to feed domestic animals. It took a labourer one hour to lop off all the branches from the main body of the Ghaf tree.

The labourer lopped three trees that morning and there were several tree "skeletons" in the area, evidence that this is a daily occurrence.

This unsustainable practice destroys the nesting sites for bird species such as the Desert Eagle Owl and Brown-necked Raven and the roosts of many more bird species. Ghaf trees are also a much needed source of shade and food for wildlife during the hot summer months.

There is an accelerating decline of Ghaf trees in the UAE. One of the greatest threats to the Ghaf tree is this intensive lopping; another is excessive groundwater extraction.

Report & images by Jackie Strick



Gone in 60 minutes! The branches of the Ghaf tree on the Dubai-Abu Dhabi border



Field Trip Report

Camelicious - Camel Farm Visit

Organised by Martina Fella, twenty DNHG members enjoyed a trip to Camelicious Camel Farm on Friday 18th January.

Having met at Central Veterinary Laboratory in Za-beel, we heard a fascinating overview of the origins, expansion and benefits of the camel dairy industry from Uli and Renate Wernery.

Then we drove along the E66 to the farm where we were very impressed by the level of anti contamination that was in place – our tyres had a disinfectant dip and we washed and disinfected our hands frequently.



Once inside we were shown around the milk processing plant by C P M Thulasiran and saw all the vast tanks and machines, in spotless surroundings, from behind glass walls.

Then Uli handed us over to top vet Dr Peter Nagy who took us around the farm which has been in production for 5-6 years. There are currently 2700 camels on the farm, including 22 bulls.

The camels are milked twice a day, morning and evening and the system is totally automated. 550 are being milked so the remainder are 'resting' or too young to be milked.

Unlike current practice in dairy farms, the young camel is allowed to remain with its mother. She shares her milk between the baby and the milking machines. The



mother will continue to produce milk for 2 years following the birth. After that she needs to have another calf. Camels are milk producing for at least 10 years so the problem as to what to do with the 'old ladies' has not yet been broached.

It took 5 minutes to milk each group and the yield was about 6-7 litres per day (high-producing Holstein cows yield 60 litres!!). Uli and Peter are very interested in adding camels from different countries like Pakistan whose milk yield is believed to be 12/14 litres per day.

Afterward the milking we went out to the pens and fed carrots to the camels. We also saw a new calf wearing a padded coat to protect it from the cold.



Most of us were amazed to hear there was a 4.5k camel walking track. The camels are released in their 24 group and they amble along happily on their own. Those lucky bulls are not so amenable but there is a new walking machine being set up for them.

We then toured the laboratory section and saw the camel operating area and the various rooms where many tests and checks are made including fertility treatments, embryonic transfers etc. These camels have come from different countries like Pakistan, Saudi Arabia, Oman and Sudan. All of them are the one-humped, or dromedary camels (there are no hybrids). Precise records are kept to evaluate all aspects of their origins, milk production and fertility levels.

Finally we got to taste the full range of milk – strawberry, saffron, date and chocolate – Laban and 3 new cheeses that will come on the market soon!

At the farm there are two non-negotiable rules; first no spitting and second no hitting the camels. Everything we saw and heard pointed to a first class enterprise, a definite winner in the 'Compassion in Farming' arena.

Report by Mairead Porter, MaryAnne Pardoe & Peter Nagy. Photos by Mairead Porter.

Ringling in the New Year with a Scorpion Sting - a Cautionary Tale

This New Year's Eve I was camping with some friends in the desert stretch on Dubai – Abu Dhabi border near Al Faqa and had a desert experience of another kind: I got stung by a scorpion.

After dinner, I stretched my legs and touched the sand with my right calf. Immediately I felt a burning pain, similar to acid being injected under my skin. I checked the painful spot, but except for a tiny dot, like a needle puncture, there was not much to be seen. No swelling, no tissue damage, just a bump similar to a mosquito bite that disappeared in minutes. The pain was disproportionate to the low-key appearance - sharp and burning - but luckily localized in my calf.

I did not immediately know what had stung me. The pain was unlike anything I have experienced before. Later it persisted through the night in the form of flashbacks that got less and less intense towards the morning.

A single puncture ruled out a spider or a snake. I also did not feel any crawling up my leg, which ruled out ants. There were no other creatures around, except the ubiquitous flies and black desert ants during the day.

Later we found the culprit: the approximately 4 cm long scorpion which appears to be a *Vachoniolus Globimanus**, a species centered on the Empty Quarter and surrounding desert areas, was almost at the exact place where my leg touched the ground.



Vachoniolus Globimanus

The fact that the sting did not cause any swelling or tissue damage was misleading and potentially dangerous as we underestimated the seriousness of it. Luckily – and except for a brief dizziness - I did not feel any systemic symptoms like heart palpitation, sweating, nausea or fever. It helped that I got stung through the trousers – they probably prevented the sting from penetrating deep into the tissue and protected my leg from the first hit of venom.

Not knowing at first that it was a scorpion I did not panic – which was good. Panic increases the heart rate and makes the venom spread faster. I also instinctively stayed put, keeping the affected limb motionless and lower than heart level – all helping to slow down the spread of the venom.

Applying ice to the affected part was an obvious first aid, as it temporarily soothed the burning pain. But a much more effective remedy would be scalding the area immediately with hot compresses (as hot as possible without causing scalding damage to the tissue). All biological venoms are protein based and coagulate at high temperatures. However, hot compresses only help if they are applied immediately, when the venom is still localized.

Most victims of scorpion stings are out of danger within 3 hours but they should receive medical supervision for at least 8 hours. If stung by scorpion you should contact a doctor immediately – or go straight to the hospital, especially if the victim is a small child, older person or has a pre-existing health condition.

In case of symptoms of systemic reaction, like numbness, nausea, fever, heart palpitations, problems with breathing, sluggish tongue or contracted jaw muscles go to the hospital immediately!

Clinics might not have antivenins or skills needed to treat envenomation. Scorpion venoms are not all the same so take photos or even the culprit with you (if safe to do so) for identification of the antivenin needed – although the hospital staff here might not have the appropriate identification knowledge and antivenin available. In more advanced hospitals abroad the sting area can be analyzed to determine the type of venom and subsequently prescribe antivenin needed.

Wild gourds (*Citrullus colocynthis* - the bitter pumpkins that we often see in the desert and discuss their edibility) are traditionally used by Tuareg of the Sahara to treat scorpion stings. But instead of testing the traditional medicine, the golden rule should be to get to the hospital as soon as possible, especially if systemic symptoms manifest.

The good news is that most of local scorpions' stings, although very painful, are not deadly for healthy adults. Scorpions are not generally aggressive and normally avoid humans, only stinging when threatened. I pressed my calf on it; hence its self-defence.

It is obvious that you should be careful when moving rocks, wood or camping equipment but it is not so well known that scorpions live in the sand as well.

They dig themselves flat into the sand and, as they are the same yellowish color, they are almost impossible to spot. Always wear shoes and do not sit in the sand, unless you have thoroughly checked the area first.

Field Clips

Scorpion contd.

When camping always check the area before setting up the camp and try to set up the camp and the camp fire in the daylight. If caught by night check the area with black UV light: it will make scorpions glow due to the fluorescent natural property of their cuticle.

But be prepared to be put off camping sometimes – there are more around than you'd expect. On the same night we found another scorpion just about a meter from the camp fire. When surrounded, it dug itself flat in the sand with three to four fast scoops – and remained immobile for the rest of the night. Scorpions often hide under your



camping equipment or clothes. Always check when you are moving the equipment or folding tents and check clothes that were left outside. Keep your tent zipped up at all times and especially at night. Never leave your shoes outside during the night – or at least check them thoroughly before putting them on.

Never kill scorpions! (Except in extreme cases of legitimate self-defence). Locally they are already threatened by their disappearing natural environment.

And they are more valuable than you might think: there is a lot of research going on currently on the healing properties of their venom. With its selective cell targeting scorpion venom could hide the miracle cure against cancer and autoimmune diseases such as lupus or set the base for a new generation of painkillers.

Report & photos by Sonja Lavrenic. Identification by Gary Feulner with assistance from Dr. Graeme Lowe, Scorpion taxonomist, Oman.

*Identifying Scorpions

Scorpions as a group are morphologically conservative -- a taxonomist's way of saying that one species looks very much like another. Most of the local desert species are yellowish with minor black markings, and are difficult to distinguish. No convenient guide to local scorpions is available, partly because their classification is still a work in progress; collections made more than a decade ago remain under study.

What allows an identification in this case is the inflated base of the 'claw' and the very short pincers, shown in the accompanying photos. The epithet "*globimanus*" in fact refers to the bulbous 'hand'.

Being a species of remote areas, *V. globimanus* does not (yet) feature among photos available on the internet, although it has been known from the UAE for nearly 20 years. It appears that Sonja's experience may be the first recorded account of envenomation by *V. globimanus*.

Falaj Bridge



The structure in the accompanying photos is unusual in two respects. First, there is relatively little agriculture and relatively little construction deep within the Hajar Mountain front in the area where it is located, north of the greater Mahdhah area.

Second, even in areas where agriculture and associated construction are more common, it is rare to see a falaj bridging a wadi.

In this instance, the upstream end of the falaj is just out of view to the left. It was designed to collect and redirect water from a shallow gully descending the gravel hillside, then route the water across the larger channel of the tributary wadi and carry it towards the right fore-

ground of the photo, to an area of some 600 square metres of fields on a wadi terrace.

Why was the tributary wadi itself not used as the water source? Perhaps because the post-rain flow was too great, or too turbulent, or could not easily be intercepted at a high enough level to serve the fields. Presumably the bridge consisted of a flyover across the wadi, with a passage underneath for the outflow from the tributary, which would otherwise have damaged the structure. Although the evidence is not conclusive, the stone foundations that bestride the channel are deep and each seems to preserve an original vertical face fronting on the wadi.

Report & photo by Gary Feulner

Dubai Natural History Group Recorders

Reptiles - Dr Reza Khan
res 344 8283
off 344 0462

Astronomy - Lamjed El-Kefi
res: 06-5310467
off: 06-5583 003
email: lankefi@emirates.net.ae

Marine Life - Lamjed El-Kefi

Geology - Gary Feulner
res 306 5570

Insects - Gary Feulner

Fossils - Valerie Chalmers
res 394 8871,
email: valeriechalmers@gmail.com

Plants - Valerie Chalmers

Archaeology, Seashells, Birds and Mammals - Recorders needed!

The recorders are not necessarily scientific experts in their designated fields. In fact, most are not. However, they are interested and knowledgeable amateurs - please contact them if you have any interesting reports or queries.

The intention is that information will be channelled through to the *Gazelle* editor, so new information can be shared with all our readers.

Inter-Emirates Weekend 2013

Inter-Emirates Weekend 2013 will be hosted by the Al Ain ENHG on **Thu-Sat, 21-23 February**. The program of planned field trips includes, inter alia, a lecture and tour of mosque architecture, an oasis walk, a souk tour, easy mountain walks, a plant workshop, a plant survey, mapping solar clocks and an introduction to curating techniques.

Details have been circulated by email and DNHG members are encouraged to reserve the dates. Further updates will be sent out by e-mail.

The theme of the weekend will be "Origins of the ENHG". This will be reflected in the dinner program on Friday evening, and through opportunities on Friday and Saturday to work with and help organize

archival material that dates back to the origins of the group in 1980.

Indoor programs and Friday dinner will be held at the Dana Resort Hotel in Al-Ain (formerly the Al-Ain Intercontinental). There are options for single and double rooms, with or without breakfast. Please contact the hotel directly to make your reservation (03-704-6000). Ask for Reservations and quote ENHG.

Participants should pre-register for the dinner on Friday night (22 Feb) as soon as possible.

To reserve your place for the dinner in the Danat Resort Ballroom (AED145 including taxes), please send an email to: interemiratesweek-end@gmail.com

DNHG Field Trip Policies

Members are reminded that DNHG field trips are cooperative ventures among the participants, for their mutual benefit and enjoyment.

DNHG field trip leaders are not normally professionals or experts, but fellow members who have agreed to share their time and their knowledge with other participants, on a volunteer basis.

The relationship of trip leaders and participants is that of co-venturers, not professional and client. For these reasons field trip participation is limited to DNHG members and their bona fide non-resident guests.

Various dangers are inherent in travel in and around the UAE and in the exploration of the natural environment, whether by automobile, by boat, on foot or otherwise, and whether on-road or off-road, in the cities or countryside, in the mountains or deserts or at sea.

By participating in DNHG field trips, members accept these risks, and they accept responsibility for their own safety and welfare.

Field trip participants are normally required to sign a waiver form to this effect. Without these understandings, the DNHG would be unable to sponsor field trips or to recruit volunteers to lead them.

Field trips vary in both format and organization, depending on the nature of the trip, the number of participants, and the preferences of the field trip leader.

If the number of participants is limited and sign-up is required, members should make every effort to honour their commitments or to give timely notice otherwise, as a courtesy both to the trip leader and to other members who might like to have the chance to participate.

Dubai Natural History Group Programme

Lectures at Emirates Academy of Hospitality Management, 7.30 for 8.00pm

Feb 3 Rima Jabado: Sharks in the UAE: Results from a two-year study investigating shark fishing and the trade in shark products

Field Trips (Members only, please)

Feb 1-2 Ras al Khaimah Archaeology Trip

Feb 21-23: Inter-Emirates Weekend in Al Ain

Mar 15 Jebel Ali Temple

Mar 28 - Apr 3 Trip to Tadoba Tiger Sanctuary

Mar 29-Apr 6: Nepal Hill Country

Further field trips, details or changes to trips will be announced/confirmed by e-mail circular.

DNHG COMMITTEE 2012

When possible, please contact committee members outside office hours

	name	tel	email
Chairman	Gary Feulner	04 306 5570	grfeulner@gmail.com
Vice Chairman	Valerie Chalmers	050 455 8498	valeriechalmers@gmail.com
Treasurer	Rakesh Rungta	050 558 2435	rakesh99@emirates.net.ae
Membership Secretary	Anindita Radhakrishna	050 656 9165	anin@emirates.net.ae
Speaker Co-ordinator	Martina Fella		martina_fella@hotmail.com
Speaker Co-ordinator	Michelle Sinclair		sinclairm2004@yahoo.com
Fieldtrip Co-ordinator	Pradeep Radhakrishna	050 450 8496	wgarnet@emirates.net.ae
Fieldtrip Co-ordinator	Jenny Hill	050 886 1508	jennyhill76@hotmail.com
Fieldtrip Co-ordinator	Sonja Lavrenčič	050 256 1496	lavson@gmail.com
Newsletter Editor	Fiona Leen	055 1898 572	leenfiona@gmail.com
Librarian / Book Sales	Mairead Porter	055 656 1949	portermme@hotmail.com
Postmaster	Sandi Ellis	050 644 2682	sandiellis@gmail.com
Chief Engineer	Ajmal Hasan	06 5043523	ajmal_hasan@hotmail.com
Website Coordinator	Sandhya Prakash	050 551 2481	sandy_pi@yahoo.com

Postal Address: DNHG, PO Box 9234, Dubai, UAE

Contributions

Do you have a field report, unusual finding, interesting news article, book review, amazing photograph, or community news to share?

If so, email your contributions to: gazelleeditor@gmail.com
(Arial 10 justified).

DNHG Membership

Membership remains one of Dubai's best bargains at Dhs. 100 for couples and Dh. 50 for singles. Membership is valid from Sep 2012 to Sep 2013. You can join or renew at meetings or by sending us a cheque made out to **Lloyds TSB Bank** account no. 60600669933501. (Please note we cannot cash cheques made out to the DNHG.)

Payment can also be made by cash deposit at a bank or ATM, using our IBAN number AE650320060600669933501. However, this process does not identify you as the payer. If you wish to pay by cash, please also scan and e-mail a copy of your payment confirmation to the Membership Secretary, so we know whose money we have received.

DNHG membership entitles you to participate in field trips and helps pay for our lecture hall, publication and distribution of our monthly newsletter, the *Gazelle*, our post office box, additions to our library, incidental expenses of speakers and occasional special projects.