Mongolia Khovsgol Research Expedition 2013-Explorers Club flag# 99

Report

July 7\textsuperscript{th} through July 26\textsuperscript{th}, 2013

Ultimate Destination: Latitude N: 49 deg 38’ 09”

Longitude: E: 100 deg 09’ 20”

Submitted by: Robert “Bob” Atwater LF’05

Explorers Club Flag# 99

Bob Atwater LF’05 and Col. John Blashford-Snell MED’74
July 5th was the team’s travel day via air to Ulaanbaatar, Mongolia, with our stay over in Ulaanbaatar through July 8th. We traveled by air to Moron to begin our expedition to the Northern Mongolia Khovsgol Region by four wheeled vehicle and horseback. The expedition was under the leadership of Col. John Blashford-Snell OBE, MED’74. Explorers Club members on the expedition are Robert J. Atwater LF’05 and Col. John Blashford-Snell MED’74. The team traveled post-expedition back to our homes on various dates from July 26th through July 30th.

Expedition team members with Explorers Club flag# 99 in the Khovsgol Region, Mongolia
Bob Atwater LF’05 crossing a frozen river in Northern Mongolia, July 24th, 2013
Col. John Blashford-Snell Med’74 and Barry West along with Mongolian children and Reindeer
Col. John Blashford-Snell Med’74
The Great Ghengis Khan at the capital in Ulaanbaatar
The following pages are an in-depth report of our complete expedition including the Medical, Dental and Scientific Research of Botanical, Zoological, Ethnological, Ornithological, Archaeological and Shamanistic Religious studies conducted by the various team members. I want to thank my fellow expedition team members for their extensive sub-reports regarding the numerous accomplishments completed on the expedition. In additionally, we could not have completed our mission without the outstanding work by our support team of native Mongolian horse handlers our numerous sponsors and supporters including the Great Ghengis Khan Expeditions staff.
# INDEX

1. Expedition Mission & Sponsors 2
2. Expedition Summary 3
3. Original Itinerary 6
4. Members Roles & Responsibilities 9
5. Expedition Log 10
7. Weather Report 19
8. Riding Horse Report 20
10. Mammal, Reptile & Amphibian Report 28
11. Przewalski Horses’ Report 30
12. Fishing Report 38
14. Botanical Sub-Report 40
15. Reindeer People & Shamanism Report 41
16. Deer Stones 50
17. Turkic Stone Men 52
18. Community Aid Report 53
19. Medical Report 55
20. Dental Report 58
21. Communications Report 66
22. Report Distribution 67
MAP OF MONGOLIA KHOVSGOL EXPEDITION ITINERARY MONGOLIA 2013

Days 3-5 & 14

Days 6-13

Days 16-18

Days 1,2,15,19

Scale: [ ___ 100 miles ___ ]

Mongolia
EXPEDITION MISSION

To assist the people of the Central Mongolia and the Khovsgol province, undertake botanical and zoological tasks for the respective Mongolian scientific bodies, whilst making a reconnaissance for future projects in the region.

SPONSORS

The expedition is extremely grateful to the following who helped to make the project a success:

Berghaus International Ltd
Burton McCall Ltd
Damory Veterinary Clinic
Great Genghis Expeditions
Henri Lloyd
Nikon (UK) Ltd
The Scientific Exploration Society
Stahly Quality Foods Ltd
Zenith Watches

We are also most grateful to:
Judith Blashford Snell
Anne Gilby
Carolina Hanley
Melanie Hyatt-Steel
Gail Lloyd
Villa Piche
Lucy Thompson
Janet & Chris Wood
After many months training and preparation, a 21 strong Scientific Exploration Society backed expedition, assembled in Ulaanbaatar, capital of Mongolia in early July 2013. The aim was to ride into a remote mountainous area near the Mongolia/Russia border to aid a little visited group, known as the Reindeer people.

Along the way the team was to distribute books to needy village schools and give out reading glasses. Moving by local plane and 4WD vehicles they paused to witness the famous annual Naadam Festival which involves archery, horse racing and wrestling at Moron, administrative centre of the Khovsgol province. From here the team drove North on rough tracks to meet up with a herd of 65 riding and pack horses that the Leader, Colonel John Blashford-Snell and Prof K Terbish of the Mongolian National University, had organised with local tribesmen.

On the way there was a problem when the Russian stores truck, heavily laden with camp and riding gear, sank axle deep into a morass. Thanks largely to retired Sapper, Lt Col Tom Gallagher, the vehicle was extracted but as the hour was late, the team made camp in the swamp. However keen to use every opportunity to study local wildlife, the zoologists set up a line of metal cones buried flush with the surface, to catch small mammals in the night. At dawn they were delighted to discover they had collected two rare 10 cms long Narrow Headed Voles. These were promptly measured and released.

Pressing on and handing out books to village schools, the team reached the end of the road at the Khoglin river. Here awaited their herd of horses. These were not quiet well trained riding stable ponies on which the members had practised in Britain, but frisky, near wild beasts many of whom, who although only 14-15 hands high were immensely strong. Mounting up, the expedition then rode North through lush greenery and heavy wooded Taiga forest. As they climbed higher, permanent sheets of ice appeared stretching across river beds and these had to be negotiated with care. Whilst the sun was out it was pleasantly warm but as soon as it dropped below the horizon, the temperature plummeted to near freezing. Wrapped in sleeping bags and blankets, the expedition slept in small tents, waking to find the fabric stiff with frost. However somehow the Mongolian cooks always managed to produce warm, filling breakfasts wherever they went.

As the column rode on, ground squirrels scuttled from beneath the horses hooves, diving into their burrows. Chipmunks and birds of prey also appeared and there were wolf tracks on the river banks.

On 14th July at around 7500 feet above sea level, the leading riders saw white tepees on the distant hillside and surrounding these were herds of grey heavily horned reindeer. They had found the Reindeer People’s summer grazing camps. Unafraid,
these strange looking beasts came trotting over to inspect the newcomers, much to the consternation of the horses who did not like the towering horns of these beasts. The people, also known as the Dukha came over riding on reindeers and soon arrangements were made to set up a dental and medical clinic at a central camp. Surgeon Lieutenant Angela Critchlow RN used a pressure cooker to sterilize the instruments on a dung burning stove whilst the Dukha served tea with reindeer milk and blocks of reindeer cheese. Whilst Dr Kate Clayton gave some medical treatment the local Shaman arrived and fortunately agreed that although his methods of curing ailments were more effective, the people should try out the western medicine.

Peter Manns was making a study of Shamanism and he was delighted when the Shaman agreed to demonstrate his techniques. He gave a midnight performance, entering into a trance to communicate with the spirits and told the expedition that he knew England well as the spirits had often taken him there.

Having extracted over 30 teeth Angie Critchlow and her assistants issued brushes and toothpaste urging the locals to use them regularly. Meanwhile the Ornithologists were fascinated by many nesting ptarmigan and the zoologists caught a water vole. Wolves are a problem here and a guard dog was attacked and badly bitten. All around the camps were masses of wild flowers and the expedition botanist Cynthia Hardyman, working with Mongolian botanists, had a real field day.

After several fascinating days with the Dukha the expedition remounted their horses and rode back through the forest to the Khoglin river where thankfully it was a little lower and warmer at night.

Annabelle Burroughs, who John Blashford-Snell had appointed as “riding master”, had done a fine job in providing some veterinary treatment for the horses and they were in good fettle for a period of botanical and zoological exploration around the Khoglin river. There was also the chance to fish for the fezzan, a fish related to the salmon. One weighing 5½ pounds was duly caught by a Mongolian groom, and Peter Manns landed a couple of grayling for the camp supper.

The next task was further South, so the team returned to their vehicles and drove for
Moron. Alas the stores vehicle developed a series of faults and drove along belching black smoke before finally a front wheel fell off. “This can be mended in 30 minutes” said Prof Terbish but John Blashford-Snell and Tom Gallagher decided it was a major garage job. Pressing on in the 4WD vehicles, the team reached Moron at dusk and as all the camp kit was on the stricken truck they moved into a local ger camp for the night. The ger is a felt lined circular Mongolian tent and thus they had shelter for the night. To the members amazement at dawn, the stores truck appeared. Village mechanics had gone to it in the night, jacked up the vehicle and refitted the wheel. “They really are incredible repairmen” said Deputy Leader Barry West who had been keeping an eye on the state of the transport.

The final task of the expedition was a study of the Przewalski horse. These creatures, a different species of horse and the only truly wild horse left in the world, had been reintroduced to Mongolia some years go after becoming extinct. Now there are growing numbers of these heavily built, long maned, beige coloured animals in a special reserve. Janet Wood of Mere had set up the study with the guidance of experts in the UK and the team were lucky to find over 50 of these beautiful animals, several with foals. In the same area they also encountered some large red deer and marmots. The marmot hosts a flea that is believed to carry the feared Bubonic plague germ which, known as the Black Death, caused such terrible loss of life in Europe in the middle ages. The Scientific Exploration Society supported a collection of these fleas on an earlier expedition.

Returning to Ulaanbaatar with their mission accomplished the expedition bid farewell to the Mongolian scientists with whom they had worked and have now dispersed to write their reports on the various aspects of this fascinating and highly successful expedition in the land of Genghis Khan.
Day 1 (July 7)

Arrive in Ulaanbataar Mongolia’s capital city and transfer to the hotel where there will be an expedition briefing. In the afternoon, we will have a leisurely program of sightseeing around the city and a visit to the Natural History Museum and view a variety of fossils from animals and dinosaurs living up to 70 million years ago. Our evening program is a folklore concert featuring Mongolian traditional songs and dance followed by a welcoming dinner at a local restaurant. Overnight accommodation at the hotel. (Dinner)

Day 2 (July 8)

Free day in Ulanbaatar to visit National History Museum and have time to visit local cashmere factory shops. Overnight accommodation at the hotel. (Breakfast)

Day 3 (July 9)

We will take domestic flight to Moron town, the centre of Khovsgol Province. On arrival our local drivers will meet us and take us to our tented camp near the town. In the afternoon we will visit Reindeer Stone Monument complex. Overnight in tents. Meals prepared by our camp cook from now on. (Breakfast, lunch, dinner)

Day 4 (July 10)

Drive into Moron town to see the local Nadaam Festival. Naadam is the most colourful and enjoyable of all Mongolian celebrations. It is a time when all the country celebrates the three manly sports of horse racing, archery and wrestling. Children ride the horses from as young as 4 years of age. They race over distances as long as 30 km. The real pride of Mongolia is the wrestler. Much skill and training goes into this sport and the winner is revered as a hero by all Mongolians and hence awarded the most prestigious title of the “Lion”. Overnight in tents. (Breakfast, lunch, dinner)

Day 5 (July 11)

This morning we will see the Nadaam Festival again. Then we will start our journey to Reindeer people. Today we will drive to Beltes River. The river is fast flowing with white water, surrounded by mountainous valleys. We will have tented camp overnight by the river’s edge. (Breakfast, lunch, dinner)
Day 6 (July 12)

We drive over the mountainous range of Khoridol Saridag and descend into Darkhad Valley. While driving over the mountains we will be passing through the taiga forest of the north. Our camp for tonight will be by the riverside of Khogiin Gol, which has an abundance of fish such as taimen, lenok and graylings. Here we meet our horsemen and horses for our mounted trek. (Breakfast, lunch, dinner)

Day 7 (July 13)

This is the first day of our linear horse riding. As the terrain is unsuitable for vehicles we will have the support of packhorses to transport equipment and food. Excess luggage can be left with vehicles until 16 July. We will ride for about 30 km in the mountainous valley and reach the foothill of Mount Tsagaan Chuluut for overnight tented camp. During the ride we will do botanical and ornithological studies. We may well divide into groups of up to 6 persons during these studies, keeping in touch by walky talky. Tent camp. (Breakfast, lunch, dinner)

Day 8 (July 14)

As we ride deep into the Taiga the terrain will get wet and muddy. The riding becomes more difficult and at some stages we will be riding in single file through the thick forest. During the riding we will do botanical and ornithological studies. We will be making camp on dry ground in the mountains for the next two nights. In the afternoon we will ride to visit the Tsaatan (Reindeer) people at Mengebulag. Carry out medical and dental work. Observe Shamans at work. Reindeer people are cradle of Shamanism in Mongolia. Meals and overnight at tented camp. (Breakfast, lunch, dinner)

Day 9 (July 15)

We will ride a short distance to reach the camp of the Tsaatan (Reindeer) people. The Tsaatan (Reindeer) people are unique to Mongolia and live by herding reindeer in the high mountains. They live in tepee style tents and have very few possessions. Visiting these people, sharing their hospitality and learning about their unique way of life is a treasured, once-in-a-lifetime memory. The Tsaatan people also practice the ancient traditions of Shamanism and believe in the worshipping of the nature. We spend the day with these interesting people and also give them medical and dental help. Ride back to our tented camp for dinner and overnight. (Breakfast, lunch, dinner)

Day 10 (July 16)

We will ride back to Khogiin River to meet our vehicles and luggage and from now on have the vehicle support for our ride for a couple of next days. Meals and overnight at tented camp. (Breakfast, lunch, dinner)
Day 11-13 (July 17-19)

These 3 days we will be riding through the surrounding area exploring the landscape, nature, flora and fauna doing Botanical, Ornithological and Zoological studies. Plants will be collected for the National Herbarium. Also we will have time for fishing. Meals and overnight at tented camp. (Breakfast, lunch, dinner)

Day 14 (July 20)

We will drive back to Moron. Make a tented camp for dinner and overnight near the town. (Breakfast, lunch, dinner)

Day 15 (July 21)

We will take a flight back to Ulaanbataar. The flight takes one and half hours. On arrival will be transferred to hotel. Afternoon free. Overnight at hotel. (Breakfast)

Day 16 (July 22)

We will drive to the west of Ulaanbataar to the Khustain Nuru National Park. This is the place where the Przewalski's horse was restored to Mongolia. We aim to see the wild horses grazing in the mountains and do local botanical collection. Overnight in huts. (Breakfast, lunch, dinner)

Day 17-18 (July 23-24)

On these 2 days we will study the Przewalski horse and other wildlife. We will visit Ongot Stone monument complex. Meals and overnight at huts. (Breakfast, lunch, dinner)

Day 19 (July 25)

We will drive into Ulaanbataar to be accommodated in a hotel. Afternoon free. Farewell dinner at the local restaurant. Overnight at hotel. (Breakfast, dinner)

Day 20 (July 26)

Departure transfer to airport for your flight home.

Mongolian Support

Throughout the expedition we will be supported by interpreters and Mongolian scientists.
MONGOLIAN KHOVSGOL EXPEDITION 2013
MEMBERS ROLES AND RESPONSIBILITIES

Robert Atwater (USA) Motor transport officer, botany, herbs and photographer
Ian Banks Navigator, Surveyor, Video, Meteorology
Colonel John Blashford-Snell (Jersey) Leader, Navigator, Photographer
Miss Annabelle Burroughs (Jersey) Leader, Navigator, Photographer
Mrs Susan Bromhead Community Aid, Ornithology, Zoology
Dr Kate Clayton MO, Community Aid
Surg Lt Angela Critchlow Dentist
Mrs Jennifer Ellenger (Jersey) Medical Assistant, Horticulture, PR, Ornithology
Ian Gardiner Navigation, Video, Medical Assistant
Lt Col Tom Gallagher Engineer, Artist, Community Aid
Mrs Issy Gallagher Community Aid, Entertainment Officer
Mrs Cynthia Hardyman Botany coordinator (with Mongolian botanist)
Dr Edith Kreutner (Austria) First Aider, Medical Assistant, Safety Officer
Miss Kate Manns Biologist, Scientific Liaison Officer and Coordinator, Video
Peter Manns Anthropology (Study of Reindeer people), Fishing, Community Aid
Ms Villa Piche (USA) Dental Assistant, Zoology, Fishing
Keith Stocks (Tasmania) Engineering advice to local people.
Maggie Stocks (Tasmania) Assist doctor and dentist. Flora & fauna cataloguing.
Mrs Amanda West (Ireland) Administration in field, Dental Assistant, Photographer
Barry West Communications, Mechanical Officer and MTO
Mrs Janet Wood Przewalski Horse study, Video and Photography, Zoologist/Ornithologist

MONGOLIAN SCIENTISTS

Professor Khayankhyarvaa Terbish – Professor of Ecology, Department of Ecology and Conservation Biology, National University of Mongolia. Professor Terbish accompanies all our expeditions in Mongolia.

Dr Oyumaa – Botanist who lives and works in the Khovsgol area so she joined for this part of the expedition.

Dr Oyuntsetseg – Botanist who joined for the Hustein National Park.

Mr Dalannast Munkhnast – Zoologist and mammologist who was on the 2011 expedition.

Mr Onolragchaa Ganbold – Ornithologist who was on the 2011 expedition.
Expedition Log  by Cynthia Hardyman B.Ed., M.A.

This expedition, approved by the Scientific Exploration Society, was from 7th to 26th July 2013.

Sunday 7th July. By 7th July all expedition members had arrived at the Springs Hotel, Ulaan Baatar (UB). In the late afternoon, led by Dairee, our interpreter from Genghis Expeditions, we walked to Sukhbaatar Square nearby to see the repatriated skeleton of Tarbosaurus bataar in the Dinosaur Museum, watched young dancers in National Costumes competing to dance at the forthcoming Naadam Festival and then walked to the National Theatre for a concert of traditional music. Back at the hotel a Briefing brought us all up to date. Dr Kate Clayton, our M.O., has arrived by Aeroflot but her luggage and the medical kit have not. We ate at the Silk Road restaurant nearby.

Monday 8th July. As we were limited to 15k on the internal flight to Moron, we assembled surplus luggage to be transported by vehicle, accompanied by Villa. We heard that the Supplies lorry was stuck in mud on the outskirts of UB. Some of the party rested following long flights, others visited the National History Museum and other places of interest. Several enjoyed cocktails on the 23rd floor of Blue Sky tower building. The delayed luggage and medical supplies arrived.

Tuesday 9th July. Transfer to UB airport for the 1 ½ hour internal flight to Moron. Some consternation as two of the party had left their passports in the hotel but they were allowed through using photocopies. Four minibuses and a Range Rover transported us to our camp 2km from town. In the afternoon we visited the Reindeer Monument, an archaeological site of ancient megaliths with carved depictions of flying deer, at present being excavated by a Russian team.

Wednesday 10th July. We watched horse-racing, part of the Naadam Festival, some of us visited the home of one of our interpreters which had been built by her husband and friends, bowls were bought for expedition dentistry work and we presented books to the High School. Then we went to Moron’s central square to watch parades of National Costume. At camp, Edith gave river crossing instruction and Barry and Tom gave instruction on the use of the radios. In the late evening, Jenny and Cynthia accompanied the zoology students and assisted setting up small mammal traps and a bat trap.

Thursday 11th July. The traps were checked but nothing caught. We spent the morning at the Naadam Festival in the Stadium watching the opening ceremony then wrestling and archery and displays from schoolchildren. After lunch at camp our convoy of vehicles, four minibuses, a 4WD and the replacement Supplies lorry, set off on the surfaced road north. At 1815 we left the road to follow tracks along a
valley. At 1915 the Supplies lorry got stuck when a boulder became wedged in the axle as it crossed a muddy stream. We had driven 81km with 50km still to drive to reach the Beltes river. We partially unloaded the lorry to enable it to be towed backwards by a minibus and decided to make camp. The old Supply lorry had made progress slow. The zoologists set small mammal and bat traps.

Friday 12th July. At 0600hrs Tom, Ian B, Bob, Inke (interpreter) and the driver of the Supplies lorry investigated an alternative higher route which had been seen, and reported that it looked promising. Two bats and two narrow-headed voles (Microtus gregalis) that had been trapped were weighed and measured. At 1100hrs we crossed the Beltes river at the village of Toombaa. We reached Ulaan Uul at 1500hrs and presented books to the Kindergarten where 100 children aged 2 – 5 yrs attend. Bartmonk, who is providing us with 65 ponies, joined us at Ulaan Uul. For 25km we crossed the flat Darhan Valley. Base camp beside the Khogliin river was reached at 1800hrs.

Saturday 13th July. Kit was reorganised to carry only essentials on the pack ponies and our day packs, the rest to be stored at base camp. We were matched with suitable ponies and tried them and the ‘cowboy’ saddles. Pack ponies were loaded. We set off over the Khogliin river at 1330hrs for a scenic ride through flower meadows and Larch forests gradually climbing. Some river beds had sheets of thick ice left from the winter. Camped after 21km at 1800hrs.

Sunday 14th July. Frost was on the tents at dawn. Climbing, quite steeply at times, through the forest, over an ice covered river, through knee depth black boggy areas to an altitude of 1900m, then over a steep pass, leading the ponies down. At 1400hrs we saw the first group of teepees, the homes of the Reindeer People, and continued across the marshy valley to make camp. Altitude 2300m. Three women and a small boy arrived in camp by reindeer to visit us with crafts of carved reindeer antler and stone to sell. Very clear sky and frost overnight.

Monday 15th July. One group rode to make contact with the Tsaatan people, Peter to interview the Shaman, Ian G to begin surveying the area, Angie extracted 14 teeth. A second group visited another group of teepees delivering donated spectacles and other gifts, Janet making video recordings and Keith studying the technology used by the Tsaatan. A third group to study the botany and zoology rode up the valley studying several sites before returning at 1700hrs. Peter reported that the Shaman was willing to perform a ceremony that evening and 6 of our party could be accommodated including Inke to interpret. This party left at 21.15 and reached the Shaman’s teepee just before dark.

Tuesday 16th July. Edith, Annabelle, Sue, Peter, Cynthia and interpreter, Inke, returned from the Shaman ceremony for breakfast. Again, groups rode to carry out their tasks. One group went to another Tsaatan settlement for dentistry, to give
medical and community aid. Professor Terbish led a group lizard hunting. Ian G continued surveying. The Botany group crossed the marshy valley and studied the vegetation at the various levels up to the summit of a mountain. A clear, hot sunny day with overnight frost.

**Wednesday 17th July.** A prompt departure at 8am for the long ride back to the Khogliin river base camp. Shortly before reaching camp there was a short heavy shower with hailstones. We reached camp at 1600hrs having ridden 33km.

**Thursday 18th July.** Six groups pursued a variety of activities. Professor Terbish led a group to hunt for salamanders and had caught several. A Botanical group surveyed south-west of the river, an area of forests and lakes. The Zoology group explored a similar area. Angie and dental assistants Villa and Maggie went to Bartmonk’s village where she saw 11 patients and extracted 13 teeth and gave the donated accordion to one of the families. A fishing group caught a Lainok (brown trout) and 4 Grayling. The cartographers mapped the area.

**Friday 19th July.** After breakfast, during which we presented a birthday card, beautifully hand-drawn by Tom, to Kate C, we assembled on our ponies for group photographs. The Botany group went to see rock paintings on the north side of the river, downstream from camp and surveying the riverside and rock plants. The cartographers continued their tasks. The Zoology group rode to caves looking for bats and recorded several large birds of prey. A fishing group had had an unsuccessful day.

**Saturday 20th July.** The zoologists had caught 2 different types of bat in their bat net. A group left by minibus for Ulaan Uul to present books to a school there and take Sue who had to return to Ulaan Baatar for her flight home. The minibus had had a repair to a seat fixture. The Botany group studied vegetation north of the river. We had to return by 1500hrs for the horses to be released and the tethering posts dismantled. A fishing group caught a few grayling which were used in soup.

**Sunday 21st July.** Thieves during the night had stolen boots and a bag of clothes from under fly sheets of tents. After breakfast, an advance party left in the 4WD car to report the crime in Ulaan Uul. The remainder of the convoy was delayed as the Supplies truck had engine problems so reached Ulaan Uul at 1230hrs. There were further delays to cool the engine. Near the village of Toombaa the convoy stopped whilst one of the metal cones used for trapping small mammals was cut up to repair the exhaust of one of the minibuses. Then at 1615hrs a front wheel of the Supply lorry fell off. It was decided that the other vehicles should continue to Moron where we were accommodated in a hotel.

**Monday 22nd July.** To our astonishment the Supplies Lorry had been repaired overnight by mechanics from Moron and arrived at the hotel. Heavy luggage, surplus
to our 15kg flight weight limit, was loaded into the minibuses. Several of the party walked into town returning at 1145hrs for departure to the airport. During check-in several Swiss Army knives in hand luggage were confiscated and Professor Terbish packed them and arranged to have them flown to UB later that day. After transfer to the Springs Hotel some went shopping then most of the party relaxed in the cocktail bar of Blue Sky tower building.

**Tuesday 23**\(^{rd}\) **July.** After breakfast the minibuses with our surplus luggage arrived so we were able to repack for our visit to the Khustain National Park. We left at 1100hrs driving along a wide well-surfaced road for about 100km until turning left onto an earth track. The new Supplies Lorry which also housed the kitchen, was parked waiting for us. Our camp was on pasture a few minutes’ walk from the National Park Visitor Centre. There we watched an introductory video about the work and wildlife of the National Park, in particular the reintroduction of the Przewalskii horses. In the evening we drove about 7km to watch the Przewalskii horses come down from the hills to drink. Janet and Kate S. were able to conduct a trial study but there were a lot of tourists and vehicles gathered in the area.

**Wednesday 24**\(^{th}\) **July.** The Botany and Zoology groups set off together at 0900hrs. There was an unscheduled stop as one of the vehicles had a problem, conveniently at a gully rich in flora. The Botany group were able to study the varying vegetation from where a spring issued from the hillside, through varying habitats up to the summit. The Zoology group had found a dead Przewalskii horse. We had our packed lunches on the hillside then returned to camp. The Botany group then drove 30km to the Tuul river to study that contrasting habitat, visiting the impressive Turkic stones on the return journey and meeting with the rest of the party observing the Przewalskii horses. Led by Janet, the study entails noting the behaviour of each horse every 4 minutes. Hair from the dead horse was collected for DNA testing. Back at camp we enjoyed a splendid Burns Night supper organised by Tom and Issie.

**Thursday 25**\(^{th}\) **July.** We returned to UB so that people could go shopping and prepare for homeward journeys. In the evening we ate at the Mongolian Grill with the British Ambassador and his wife and son and were entertained by the talented folk group, Altain Orgil.

**Friday 26**\(^{th}\) **July.** Most of the party dispersed. John, Bob, Jenny and Cynthia were able to enjoy the hospitality of the British Ambassador at the Steppe Inn to celebrate the birth of Prince George.
# MONGOLIAN KOVSGOL EXPEDITION 2013

**Navigation Report by Ian Banks BA(hons) & Ian Gardiner**

## Navigation Log

<table>
<thead>
<tr>
<th>Serial</th>
<th>Date (2013)</th>
<th>Location</th>
<th>Distance (km)</th>
<th>Road</th>
<th>River / obstacle</th>
<th>Weather</th>
<th>Other remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>10th July</td>
<td>49°39.167N 100°07.402E Elv. 1263m</td>
<td>0</td>
<td>Paved</td>
<td>n/a</td>
<td>Sunny, hot</td>
<td>Camp outside Moron town. Replacement cook truck arrived. Late leaving</td>
</tr>
<tr>
<td>2</td>
<td>10th July</td>
<td>49°48.502N 100°02.957E Elv. 1688m</td>
<td>~20</td>
<td>Paved</td>
<td>n/a</td>
<td>Full sun, hot, still</td>
<td>First stop to regroup</td>
</tr>
<tr>
<td>3</td>
<td>10th July</td>
<td>50°08.395N 100°00.784E Elv. 1597m</td>
<td>~40</td>
<td>Paved</td>
<td>n/a</td>
<td>Overcast, cool</td>
<td>Turned off paved road</td>
</tr>
<tr>
<td>4</td>
<td>10th July</td>
<td>50°14.495N 99°45.822E Elv. 1797m</td>
<td>~20</td>
<td>Unsurfaced road</td>
<td>Marshy / boggy land by dry riverbed</td>
<td>Light rain</td>
<td>Cook truck became stuck at 18.00hrs and had to be unloaded. Impossible to continue so camped at the site. Made ascent to avoid boggy ground next am</td>
</tr>
<tr>
<td>5</td>
<td>11th July</td>
<td>50°23.140N 99°18.810E Elv. 1858m</td>
<td>~36</td>
<td>Unsurfaced road</td>
<td>Numerous dry riverbeds. Beltes river spanned by Russian army bridge</td>
<td>Full sun, hot, still</td>
<td>At Toom Baa village crossed Beltes river after some of group met woman in ger celebrating receipt of medal for outstanding work as an engineer</td>
</tr>
<tr>
<td>6</td>
<td>11th July</td>
<td>50°26.329N 99°09.428E Elv 2225m</td>
<td>~15</td>
<td>Unsurfaced road</td>
<td>Rivers not in spate</td>
<td>Full sun, hot, still</td>
<td>Highest point recorded on road thus far. Numerous cairns</td>
</tr>
<tr>
<td>7</td>
<td>11th July</td>
<td>50°34.667N 99°08.577E Elv 2106m</td>
<td>~15</td>
<td>Unsurfaced road</td>
<td>Rivers not in spate</td>
<td>Full sun, hot, still</td>
<td>Arrived at entrance to Khosgvol National Park at a mountain pass with group of ovoos and a monument</td>
</tr>
<tr>
<td>8</td>
<td>11th July</td>
<td>50°40.895N 99°13.674E Elv.1674m</td>
<td>~15</td>
<td>Unsurfaced road</td>
<td>Rivers not in spate</td>
<td>Full sun, hot, still</td>
<td>Presented books to kindergarten. Liaised with clinic at edge of Ulaan Uul</td>
</tr>
</tbody>
</table>

---

1 Distances are taken from GPS waypoints rather than trip measurement (odometer), so extra distances owing to elevation are not taken into account.
<table>
<thead>
<tr>
<th>Serial</th>
<th>Date</th>
<th>Location</th>
<th>Distance (km)</th>
<th>Road</th>
<th>River / obstacle</th>
<th>Weather</th>
<th>Other remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>9</td>
<td>11&lt;sup&gt;th&lt;/sup&gt; July</td>
<td>50°59.779N 99°10.396E Elv. 1612m</td>
<td>~40</td>
<td>Unsurfaced road</td>
<td>Rivers not in spate</td>
<td>Full sun, hot, still</td>
<td>Camp by river with 63 horses hired for ongoing journey. Mountain range visible to NE towards lake Khosgvol, including Detgerkhan (main god mountain) at ~3,000m</td>
</tr>
<tr>
<td>10</td>
<td>12&lt;sup&gt;th&lt;/sup&gt; July</td>
<td>51°01.300N 99°02.729E Elv.1732m</td>
<td>9.4</td>
<td>Defined track giving way to loose track</td>
<td>60-80m river by camp; numerous smaller rivers</td>
<td>Full sun, hot, still</td>
<td>Followed river for 1-2km then steady climb into foothills, leading to forest</td>
</tr>
<tr>
<td>11</td>
<td>12&lt;sup&gt;th&lt;/sup&gt; July</td>
<td>51°04.890N 98°59.076E Elv.1898m</td>
<td>6.9</td>
<td>Loose track</td>
<td>Numerous river crossings and boggy areas</td>
<td>Full sun, hot, still</td>
<td>Stopping point</td>
</tr>
<tr>
<td>12</td>
<td>12&lt;sup&gt;th&lt;/sup&gt; July</td>
<td>51°08.221N 98°55.051E Elv. 2429m</td>
<td>~5.0</td>
<td>Loose track</td>
<td>Steep forest tracks; snow field in dry river bed; mountain pass</td>
<td>Full sun, hot, still</td>
<td>Crossed mountain pass mounted on ascent and leading horses on descent. Crossed snow field for ~0.5km</td>
</tr>
<tr>
<td>13</td>
<td>12&lt;sup&gt;th&lt;/sup&gt; July</td>
<td>51°10.279N 98°54.411E Elv.2243m</td>
<td>~2.5</td>
<td>Loose track</td>
<td>Shoulder on west of valley approaching entrance to reindeer people summer pasture valley</td>
<td>Full sun, hot, still</td>
<td>Made camp over river to NW and ~1km from southernmost reindeer people settlement</td>
</tr>
</tbody>
</table>
Sketch maps

1. River camp (serial 9)
Orientation: top of the page = North

2. Reindeer people camp (serial 13)
3. Reindeer people camp (serial 13), with positions of reindeer people settlements
X = expedition camp
Tents = reindeer people settlements
Orientation: top of the page = South

4. First sighting of Przewalski’s horse in Hustai National Park
5) Reindeer stones archeological site
Orientation: top of page = West
Not to scale
Weather Report

In general the weather was warm and sunny for most of the expedition. Daytime temperatures rose to well over 100F in the sun / 85F in the shade on many occasions, particularly at lower altitudes such as Moron town. The temperature dropped under cover of woods and at the snow field, and at the riverside camp (serial 9) the daytime temperature fell sharply (likely into the 70sF) for several hours one afternoon for no apparent reason. Nighttime temperatures fell to freezing most nights when camping above 2,000m, with a thin film of frost found on the outside of tents in the morning. Strong winds were experienced at serial 9 (and at Hustai National Park), threatening the dining tent. At serial 4, the campsite when the cook truck became stuck in boggy ground, the group experienced rain and sodden ground on both the outward and return journeys, perhaps signifying the presence of a microclimate. At the camp outside Moron town the group witnessed a short thunder storm with moderate winds, after which appeared a double rainbow with a much fainter outer arc and a noticeably lighter shade of grey sky inside the inner rainbow than outside it (see photograph below).
I asked John Blashford-Snell how they had found the horses on the previous expedition. They had bought horses to use, and the vet had spent the initial part of the trip worming them. Knowing this and that we would be using saddles unfamiliar to the horses and spending long hours in the saddle I approached my local veterinary practice to ask for their help. Damory Vets were kind enough to give me worming paste and a large pot of Flamazine (an antibacterial cream).

When we met the horses they were a pleasant surprise. They had good coats, were alert and had generally neat unshod feet. Their ages ranged from 6 to late teens, around 14 hands in height and majority were geldings. There was the usual range of colours and a high prevalence of leg bars and bider marks, typical in Mongolian horses.
The horses were tethered to an overhead line by a long rope permanently attached to their bit on the near side. They were close packed and the Mongolian Horsemen took care to approach them from the near side and at the shoulder.

When I first looked at the horses, the worst problems were infected brands. However with a twice daily application of Flamazine during our trip, the skin which was scabrous with pus turned pink, smooth and clean.

There were several cases of sarcoids, this grey gelding had nodular sarcoids beside his elbow. He was going to be used as a packhorse, but was very resistant to being tacked up. The horsemen were extremely patient and kind to the horse. They twitched it, but still it reared as the girths were tightened. The horse was then taken to be ridden. It was quite happy to carry a saddle. Towards the end of the expedition, the front girth strap was not tightened to reduce pressure to the area.

The luggage was packed into rectangular canvas bags. The horsemen held a bag in each hand to check that the weight was evenly distributed and loaded onto the horses. A wooden frame, similar in shape to the traditional Mongolian saddles, kept the weight off their spines. Each horse carried 100 kilos.
The stock saddle used by everyone other than the Horsemen, over a felt pad.

Having done a first inspection I went to get the pot of Flamazine and a translator to explain to Bartmonk, head of the Horsemen, that I was going to treat the horses. I had found two that needed attention. Ten minutes later he came to find me, there was another horse that he wanted me to see. When I got to the horse line, about seven of the horsemen had brought me all their horses. The ailments ranged from dry well healing scratches to an infected set of horse bites. After the first day, they were quite happy for me to go and treat their horses.

The horses were given an opportunity to drink at each river crossing but they drank surprisingly little with no access to water at night. At the end of the day, the horses were left in their saddles whilst they cooled down. When on the trail the horses had very limited grazing at night. The bridles were not removed during the expedition, the wide bits are pulled down, out and then hang behind the chin. The horses are then tethered to a line, wooden peg or base of a shrub. The bridles are made by the horsemen from hemp rope, leather thong or nylon webbing.
The horses were extremely sure footed. We rode over rocks, snow, arid soil, deep bogs and crossed rivers. The going at times was extremely narrow tracks, often complicated by tree roots and steep drops to one side. They were only spooked by reindeer wandering amongst them when tethered. The Horsemen were very quick to drive the reindeer away.

Throughout the expedition the horses had stayed sound, except one was foot sore. I wormed the six poorest looking horses on returning from our last ride. The horsemen were all determined that they needed the wormer for their horse.

The Flamazine was used to treat a severe case of impetigo, in the absence of any alternative, whilst with the Reindeer people. It was also used on one horseman who had a long cut on his leg.

At the end of the expedition the horsemen untacked the horses and let them go onto the steppes. The horses did not form one herd. A few of the horses were kept back for the horsemen to ride.

Horsemen loading motorbikes having released their horses.
The horses walked up the bank from the camp by the river and a few minutes later had disappeared.
Project brief
In conjunction with local ornithologists studying at the University in Ulaanbaatar, identify and record bird sightings at locations throughout. At the request of the South African Ornithological Society; photograph a migratory Amur Falcon on it's nest.

Project team
Expedition members; Susan Bromhead, Jennifer Ellenger, Maggie Stocks and Janet Wood
Mongolian Ornithologists; Onnalloo Gambol, and Balthaup ?

Method
During the course of the expedition the team members were often working on different projects within the same areas so each recorded their own sightings which were then centrally collated.

Study results
Table 1 (below) describes the activity, location and terrain associated with the sightings. Table 2 (on next 2 pages) shows the bird species sighted, by day, for the period 8th - 24th July 2013.

Summary
During the 17 day study period 62 different species were logged, half of them were only sighted on one day.
The bird most sighted was the Black Kite sighted on 10 days and the searched for, Amur Falcon, was not sighted at all. The most sighting were whilst travelling off road through mountains, valleys, forest and by rivers.

<table>
<thead>
<tr>
<th>Date</th>
<th>Location/Activity</th>
<th>Terrain</th>
</tr>
</thead>
<tbody>
<tr>
<td>8th July</td>
<td>Ullanbaatar - Exploration of city</td>
<td>Urban</td>
</tr>
<tr>
<td>9th July</td>
<td>Flight North west to Moron</td>
<td>Country town/Camp in grasslands with nearby river</td>
</tr>
<tr>
<td>10th July</td>
<td>Moron/outskirts visit Naadam festival</td>
<td>Country town/Camp in grasslands with nearby river</td>
</tr>
<tr>
<td>11th July</td>
<td>Drive North by road then off road towards the Beltes River</td>
<td>Open rolling countryside, camp on hillside by river</td>
</tr>
<tr>
<td>12th July</td>
<td>Drive through Kholidol Saridag mountainous range/Taiga Forrest</td>
<td>Mountains and forest, off road</td>
</tr>
<tr>
<td>13th July</td>
<td>Horse trek Khogiin Gol to foothill of Mt Tsaagaan Chuluut</td>
<td>Mountains, forests, river crossings</td>
</tr>
<tr>
<td>14th July</td>
<td>Horse trek to Mengebulag</td>
<td>Valley forest, river, snow patches, high mountain pass</td>
</tr>
<tr>
<td>15th July</td>
<td>Horse treks in area for projects</td>
<td>Boggy mountain plateau, snow in elevated areas</td>
</tr>
<tr>
<td>16th July</td>
<td>Horse treks in area for projects</td>
<td>Boggy mountain plateau, snow in elevated areas</td>
</tr>
<tr>
<td>17th July</td>
<td>Horse trek back to Khogiin Gol to riverside camp</td>
<td>High mountain pass, valley, forest, snow patches</td>
</tr>
<tr>
<td>18th July</td>
<td>Horse trek for projects in Khogiin Gol area</td>
<td>River, rolling hills, forest, steppe</td>
</tr>
<tr>
<td>19th July</td>
<td>Horse trek for projects in Khogiin Gol area</td>
<td>River, rolling hills, forest, steppe</td>
</tr>
<tr>
<td>20th July</td>
<td>Drive back to Moron off and on road</td>
<td>Open rolling country side</td>
</tr>
<tr>
<td>21st July</td>
<td>Flight Moron to Ulannbaatar</td>
<td>Steppe, rolling hills</td>
</tr>
<tr>
<td>22nd July</td>
<td>Drive Ulanbaatar - Hustai National Park</td>
<td>Steppe, rolling hills</td>
</tr>
<tr>
<td>23rd July</td>
<td>Hustai National Park - Studies</td>
<td>Steppe, desert, rolling hills</td>
</tr>
<tr>
<td>24th July</td>
<td>Hustai National Park - Studies</td>
<td>Steppe, desert, rolling hills</td>
</tr>
<tr>
<td>Bird Species</td>
<td>Common name</td>
<td>Latin name</td>
</tr>
<tr>
<td>---------------------------</td>
<td>---------------------------</td>
<td>------------------------</td>
</tr>
<tr>
<td>Black eared Kite</td>
<td>Milvus lineatus</td>
<td>Y Y Y Y Y Y Y Y Y Y Y Y</td>
</tr>
<tr>
<td>Daurian Jackdaw</td>
<td>Corvus daurucus</td>
<td>Y Y Y Y Y Y</td>
</tr>
<tr>
<td>Ruddy Shelduck</td>
<td>Todorna ferruginea</td>
<td>Y Y Y Y (Chicks) Y Y Y</td>
</tr>
<tr>
<td>Carrion Crow</td>
<td>Corvus corax</td>
<td>Y Y Y Y Y Y</td>
</tr>
<tr>
<td>Eurasian Magpie</td>
<td>Pica pica</td>
<td>Y Y Y Y Y Y</td>
</tr>
<tr>
<td>Goosander</td>
<td>Mergus merganser</td>
<td>Y Y Y Y</td>
</tr>
<tr>
<td>Demoiselle Crane</td>
<td>Anthropoides virgo</td>
<td>Y Y Y Y Y Y</td>
</tr>
<tr>
<td>Fork tail-tailed Swift</td>
<td>Apus pacificus</td>
<td>Y Y Y Y Y Y</td>
</tr>
<tr>
<td>Eurasian Hoopoe</td>
<td>Upupa epops</td>
<td>Y Y Y Y Y Y</td>
</tr>
<tr>
<td>Siberian Stonechat</td>
<td>Saxicola maura</td>
<td>Y Y Y Y Y Y</td>
</tr>
<tr>
<td>Red-throated Thrush</td>
<td>Turdus ruficollis</td>
<td>Y Y Y Y Y Y</td>
</tr>
<tr>
<td>Mongolia Lark</td>
<td>Melanocorypha mongolica</td>
<td>Y Y Y Y Y Y</td>
</tr>
<tr>
<td>House Sparrow</td>
<td>Passer domesticus</td>
<td>Y Y Y Y Y Y</td>
</tr>
<tr>
<td>Red-billed Chough</td>
<td>Pyrrhocorax pyrhocorax</td>
<td>Y Y Y Y Y Y</td>
</tr>
<tr>
<td>Isabellina Wheatear</td>
<td>Oenanthe isabellina</td>
<td>Y Y Y Y Y Y</td>
</tr>
<tr>
<td>Common Redstart</td>
<td>Phoenicurus phoenicurus</td>
<td>Y Y Y Y Y Y</td>
</tr>
<tr>
<td>Common Snipe</td>
<td>Gallinago gallinago</td>
<td>Y Y Y Y Y Y</td>
</tr>
<tr>
<td>Eurasian Black Vulture</td>
<td>Aegypius monachus</td>
<td>Y Y Y Y Y Y</td>
</tr>
<tr>
<td>Golden Eagle</td>
<td>Aquila chrysaetos</td>
<td>Y Y Y Y Y Y</td>
</tr>
<tr>
<td>Rock Ptarmigan (Chicks)</td>
<td>Lagopus muta</td>
<td>Y Y Y Y Y Y</td>
</tr>
<tr>
<td>Mongolian Gull</td>
<td>Larus mongolicus</td>
<td>Y Y Y Y Y Y</td>
</tr>
<tr>
<td>Eurasian Skylark</td>
<td>Alauda arvensis</td>
<td>Y Y Y Y Y Y</td>
</tr>
<tr>
<td>Common Sandpiper</td>
<td>Actitis hypoleucus</td>
<td>Y Y Y Y Y Y</td>
</tr>
<tr>
<td>Common Turn</td>
<td>Heteroscelus brevipes</td>
<td>Y Y Y Y Y Y</td>
</tr>
<tr>
<td>Great Spotted Woodpecker</td>
<td>Dendrocoptus major</td>
<td>Y Y Y Y Y Y</td>
</tr>
<tr>
<td>House Martin</td>
<td>Delichon urbica</td>
<td>Y Y Y Y Y Y</td>
</tr>
<tr>
<td>Richard’s Pipit</td>
<td>Anthus richardi</td>
<td>Y Y Y Y Y Y</td>
</tr>
<tr>
<td>Bluethroat</td>
<td>Luscinia svecica</td>
<td>Y Y Y Y Y Y</td>
</tr>
<tr>
<td>Common Raven</td>
<td>Corvus corax</td>
<td>Y Y Y Y Y Y</td>
</tr>
<tr>
<td>Eurasian Tree Sparrow</td>
<td>Passer montanus</td>
<td>Y Y Y Y Y Y</td>
</tr>
<tr>
<td>Common Reed Bunting</td>
<td>Emberiza schoeniclus</td>
<td>Y Y Y Y Y Y</td>
</tr>
<tr>
<td>Whooper Swan</td>
<td>Cygnus cygnus</td>
<td>Y Y Y Y Y Y</td>
</tr>
<tr>
<td>Yellow Wagtail</td>
<td>Motacilla flava</td>
<td>Y Y Y Y Y Y</td>
</tr>
</tbody>
</table>

Continued on next page
<table>
<thead>
<tr>
<th>Common name</th>
<th>Latin name</th>
<th>Date of sightings (July)</th>
<th>Total days Sighted</th>
</tr>
</thead>
<tbody>
<tr>
<td>Asian Brown Flycatcher</td>
<td>Muscicapa daurica</td>
<td>Y 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24</td>
<td>1</td>
</tr>
<tr>
<td>Black stork</td>
<td>Ciconia nigra</td>
<td>Y 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24</td>
<td>1</td>
</tr>
<tr>
<td>Common Golden Eye (with young)</td>
<td>Bucephala clangula</td>
<td>Y 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24</td>
<td>1</td>
</tr>
<tr>
<td>Pallas’s Fish Eagle</td>
<td>Haliaeetus leucocephalus</td>
<td>Y 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24</td>
<td>1</td>
</tr>
<tr>
<td>Lammageier</td>
<td>Gypaetus barbatus</td>
<td>Y 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24</td>
<td>1</td>
</tr>
<tr>
<td>Himalayan Griffin Vulture</td>
<td>Gyps himalayensis</td>
<td>Y 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24</td>
<td>1</td>
</tr>
<tr>
<td>Eurasian Sparrowhawk</td>
<td>Accipiter nisus</td>
<td>Y 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24</td>
<td>1</td>
</tr>
<tr>
<td>Eurasian Teal (with 7 chicks)</td>
<td>Anas crecca</td>
<td>Y 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24</td>
<td>1</td>
</tr>
<tr>
<td>Steppe Eagle</td>
<td>Aquila nipalensis</td>
<td>Y 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24</td>
<td>1</td>
</tr>
<tr>
<td>Common Kestrel</td>
<td>Falco tinnunculus</td>
<td>Y 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24</td>
<td>1</td>
</tr>
<tr>
<td>Saker Falcon</td>
<td>Falco Cherrug</td>
<td>Y 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24</td>
<td>1</td>
</tr>
<tr>
<td>Peregrine Falcon</td>
<td>Falco feregrinus</td>
<td>Y 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24</td>
<td>1</td>
</tr>
<tr>
<td>Daurian Partridge</td>
<td>Perdix dauurica</td>
<td>Y 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24</td>
<td>1</td>
</tr>
<tr>
<td>Eurasian Coot</td>
<td>Fulica atra</td>
<td>Y 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24</td>
<td>1</td>
</tr>
<tr>
<td>Sanderling</td>
<td>Calidris alba</td>
<td>Y 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24</td>
<td>1</td>
</tr>
<tr>
<td>Rock Pigeon(nest 2 eggs in cave)</td>
<td>Columba livia</td>
<td>Y 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24</td>
<td>1</td>
</tr>
<tr>
<td>Pallas’s Sand Grouse</td>
<td>Syrrhaptes paradoxus</td>
<td>Y 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24</td>
<td>1</td>
</tr>
<tr>
<td>Rock Dove</td>
<td>Columba livia</td>
<td>Y 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24</td>
<td>1</td>
</tr>
<tr>
<td>Common Cuckoo</td>
<td>Cuculus canorus</td>
<td>Y 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24</td>
<td>1</td>
</tr>
<tr>
<td>Eurasian Three-toed woodpecker</td>
<td>Picoides tridactylus</td>
<td>Y 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24</td>
<td>1</td>
</tr>
<tr>
<td>Red-rumped Swallow</td>
<td>Hirundo daurica</td>
<td>Y 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24</td>
<td>1</td>
</tr>
<tr>
<td>Citrine Wagtail</td>
<td>Motacilla citreola</td>
<td>Y 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24</td>
<td>1</td>
</tr>
<tr>
<td>Baikal Wagtail</td>
<td>Motacilla alba</td>
<td>Y 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24</td>
<td>1</td>
</tr>
<tr>
<td>Siberain Rubythroat</td>
<td>Luscinia calliope</td>
<td>Y 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24</td>
<td>1</td>
</tr>
<tr>
<td>Durian Redstart</td>
<td>Phoenicurus auroreus</td>
<td>Y 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24</td>
<td>1</td>
</tr>
<tr>
<td>Isabellina Wheatear (+ fledglings)</td>
<td>Oenanthe isabellina</td>
<td>Y 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24</td>
<td>1</td>
</tr>
<tr>
<td>Pied Wheatear</td>
<td>Oenanthe pleschanka</td>
<td>Y 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24</td>
<td>1</td>
</tr>
<tr>
<td>Spotted Flycatcher</td>
<td>Muscicapa striata</td>
<td>Y 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24</td>
<td>1</td>
</tr>
<tr>
<td>Pallas’s Reed Bunting</td>
<td>Emberiza pallasi</td>
<td>Y 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24</td>
<td>1</td>
</tr>
<tr>
<td>Arctic Red Poll</td>
<td>Acanthis hornemanni</td>
<td>Y 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24</td>
<td>1</td>
</tr>
</tbody>
</table>

**Total species sighted by day** | 3 8 9 10 23 13 8 10 5 11 13 13 7 2 0 2 9 146
Contrary to the report from the previous expedition in the Gobi Desert, we did not see as many mammals as I had hoped. However taking into account the limited visibility in the Taiga forest, and the fact that we were a party of over 60 horses, no doubt most sensible wildlife would have fled long before we came around the corner, which limited the likelihood of any ‘chance encounters’. Also Mongolia is a vast open country and we would certainly have been seen by any animals before we saw them. I am not at all sure that they wouldn’t have been hunted by the Mongolians too, so would be cautious of man.

With the help of Professor Terbish, Onolragchaa (Onolu) and Munkhnast, our keen Mongolian zoologists, we were able to see a few mammals. We made note of any mammals we did see, or evidence of them.

On the road trip up to the Taiga we saw numerous Long-Tailed Ground Squirrels (Spermophilus undulates) or Susliks as the Mongolians called them. On one occasion the drivers lured one out of it’s burrow with squeaky sounds, while we had a ‘comfort’ break. They were by far the most common mammal that we saw.

Our first ‘travelling’ camp was by a boggy river where Onolu and Munkhnast set up a vole trap. We were delighted to find 2 Narrow Headed Voles (Microtus Gregalis) in the trap the next morning, especially JBS who is Chairman of the Vole Society in the UK and has a penchant for these little creatures. They were of course released.
Siberian Chipmunks (Tamias sibiricus) were spotted on the ride up to and in the Taiga Forests. It was best to sit motionless so they wouldn’t spot you.

Various party members rode along the Khogiin Gol river to caves where they saw a species of bat. Onolu and Munkhnast set up bat traps some evenings near camp, to no avail.

On the checklist a Siberian Jerboa (Allactaga sibirica) was also spotted. This was Day 10 when we were up in the Taiga Mountains on a high, boggy plain.

Professor also found a live bearing (non egg laying) lizard (Zootoca viviparia) here one evening, having had 5 of us scouring a hillside all day. He was very pleased to find 7 Salamanders beside a small lake near the campsite on the Khogiin Gol river and even though we searched round several adjacent lakes, they were only found at one.

A Mongolian Toad (Pseudepidalea raddei) was also seen.

When we visited the Tsaatan camp we were told that a dog had been attacked and injured by a wolf the previous night. Wolf tracks were seen beside the river too.

In Hustai National Park the Bobak Marmots (Mormota bobak) were prevalent but very shy, keeping close to their burrows.

Again in Hustai National Park, Bob was fortunate to see 8 or 9 Red Deer (Cervus elaphus) come out of the woods while the rest of us toiled up an extremely steep hill.

Of course the obvious mammals that we saw plenty of were the Takhi or Przewalskis horses, (Equus przewalski) 50 seen the first day and 22 plus 2 foals seen the second day. See the Przewalski Horse Report.
One of the tasks given to me was to conduct a study on the Przewalski horses, indigenous to Mongolia and parts of Asia, particularly the Hustai National Park, which we were due to visit.

The Przewalski horse became extinct before they could be studied in the wild, the last sighting of a wild horse being in 1968. The only horses left were captive in zoos of which only 14 of these were suitable for breeding. In 1977 a database was set up by the Foundation for the Preservation & Protection of the Przewalski Horse by Jan and Inge Bouman and Dr Jiri Volf, the keeper of the Przewalski Horse Studbook. The result of this was a breeding programme which eventually restored the horses to 6 established reintroduction sites in China, Mongolia and Kazakhstan. More than 400 horses have been introduced to these sites some of which we hoped to see in Hustai National Park.

The Przewalski Horse is the only still living wild ancestor of the domestic horse. As a comparison, the Przewalski is to the domestic horse what a timber wolf is to a domestic dog. The Przewalski Horse can be seen in cave paintings in France and Spain dating back 20,000 years. Their demise is mainly due to their encroachment onto the Mongolian nomads’ grazing lands and limited water sources.

The horses brought to Hustai came from reserves in Europe and some were already bonded into ‘harem’ groups before they arrived in Mongolia. Upon arrival the horses were released as a harem into acclimatisation enclosures of about 40 hectares which were visually separated from each other. The horses were allowed to acclimatise for up to 2 years before being released from the enclosures. All the enclosures had a natural water source, a 3 sided wooden hut and provision of salt/vitamin licks. They were provided with European salt licks and Mongolian salt licks and much preferred the Mongolian one! The first horses arrived in 1992 and of
the 15, 14 survived the harsh winter very well without supplementary feeding or water. Once the horses are released into the wild they receive no supplementary additives at all.

In Hustai the first generation of Przewalskis born in the wild are now reproducing themselves and records show that in 2011 there were 24 groups with a total number of over 250. The only real threat to the horses in Hustai are wolves and the harsh climate. There are no boundaries to the park which covers 57,000 hectares with an altitude of between 1100 and 1842 metres. The Mongolian domestic horses also graze on the boundaries of the park and when I asked about the possibility of interbreeding I was told that the Mongolian horses are scared of the Przewalskis who chase them off. Przewalski stallions are known to be very dominant.

Before leaving England I had visited Marwell Zoo in Hampshire, where I caught a distant glimpse of their herd of Przewalskis. I had also contacted Dr Martin Wilkie BSc MSc who is the Conservation Biologist for Marwell and Eelmarsh Nature Reserve, where he conducts a permanent study of a ‘semi wild’ herd of Przewalskis. Dr Wilkie had asked me to make a study of the behaviour of the Hustai horses so that he could compare it with the Eelmarsh horses. This entailed watching an individual horse for 1 hour, if possible, noting behaviour, interaction, condition, sex, identifying marks and approximate age as well as the habitat, GPS position, weather, vegetation, diet and their impact, if any, on the environment. To help with this he sent me an ethogram of behavioural codes which I transcribed with Kate Manns into simpler codes. Kate was very useful as she is a biology teacher and had done an ethogram before, albeit on baby chickens. We did have Professor Terebish, a Mongolian Professor of Zoology but his English was limited and our Mongolian non existent.

So on Tuesday 23rd July we set off in our jeeps from Ulaan Bataar, the capital of Mongolia, for Hustai National Park which is about 100 km south-west of Ulaan Bataar. The tarmac roads were very busy and it took a long time to clear the city and its suburbs. As we drove into the country side we saw fields of oil seed rape and other crops and some of the first fences we had seen, presumably to keep wandering horses and cattle off the crops.

After about 1 ½ hours we turned off the tarmac onto rough tracks and were once more bouncing around as in a tumble drier. On arrival at Hustai main gate and camp we set up our own camp of orange dome tents, one each, the mess tent, the cook’s wagon, 2 toilet tents and a washing station. We visited the tourist camp which had toilets, showers, an information centre and souvenir shop, various tourist gers and a bar. We were shown an instructive film, in English, about the park and the horses.

At about 5pm we set off to find the Przewalski horses. It was a very hot sunny day so we headed for a river in a valley, with very lush grass along the banks. We arrived to find a harem of 4 adults and a foal on the comparatively barren hillside above the river and Kate and I decided to conduct a practice study (Study A) of this group working on the whole group, not individuals. The group consisted of a stallion, 3 mares and a foal. We managed to do this for 35 minutes until the group cantered down to the river where they drank and grazed. It was disappointing as there were many tourists who just wanted to get as near as possible to the horses sometimes crowding them, though this did not seem to worry the horses unduly.
Eventually many of the tourists left leaving just our group. A bachelor herd of 4 came down onto the same hill, 2 of whom did some quite spectacular play fighting. They also crossed to the river whereupon the stallion from the previous herd came out to guard his mares and eventually chased the bachelors off. It was interesting as once the stallion had chased them a short distance one of the bachelors came back and there appeared to be friendly interaction with the stallion before the bachelor rejoined his group.

All the horses looked in very good condition, which one would hope for at this time of year, and displayed normal behaviours such as rolling in the mud beside the river, suckling foals, grazing, guarding the herd. We estimated that we had probably seen about 40 horses this evening as various groups came to the river and Professor Terbish had seen another 10.

The following day Wednesday, 24th July, was cooler and overcast. We headed for the hills where we saw a solitary Przewalski horse nearly on the skyline. At the foot of the hill was a carcass of a Przewalski that Professor Terbish thought the wolves had been around, not necessarily killing it but scavenging. After toiling 2500 feet up the hill the horse was nowhere to be seen!

At 5pm we returned to the river where we had seen yesterday’s horses. This time we set up 4 groups with the aim of conducting Dr Wilkie’s study. As we arrived a harem of 5 adults and 2 foals cantered down the hill to the river so Kate set up 3 groups to study them (Studies B, C and D). Keith, Maggie and I set off up the hill in the hope of seeing more horses come down, as they did yesterday but we were unlucky, possibly because the weather was a lot cooler so the river did not have the draw it had the day before. Flies can be a problem for the horses which is why they graze higher during the heat of the day coming down to lower altitudes in the evening when it is cooler, to drink. Flies are also a problem in that they aggravate infections and spread disease but we saw no sign of this.

This herd was again in excellent condition consisting of 2 stallions, one of whom seemed quite young, possibly a yearling, 3 mares and 2 foals. Again they were unperturbed by our presence and most of us got some excellent photos of them.
It was difficult to conduct a proper study in such a short time span as really we only saw the horses for 2 evenings covering maybe 3/4 hours. Most people were happy to watch them and take photos and were not so keen to do the study. I am grateful to those that did and to Kate who provided the expertise in the study.

Another study I was asked to do was for Basha O’Reilly of the Long Riders Guild. Basha is collecting horse hair from all the different breeds in the world and taking DNA samples. I wanted to send Przewalski horse hair but it would be a problem finding some. We did try a rock where a foal had been scratching, but it left nothing. Then Professor Terbisch suggested we go to the carcass we had seen that morning and take a sample of hair, which we duly did. After eventually tracking down Basha the sample is going off to her today and she is delighted to be having Przewalski Horse Hair for her records. I will post her findings.

This ‘report’ will also go off to Dr Wilkie for his comments which I will also post.
Przewalski Horse Study in Hustai National Park 2013  
by SES (Scientific Exploration Society)

Study A

Time: 5.50pm
Date 23rd July 2013
GPS:
Visible 4 adults (3 mares, 1 stallion, 1 foal.)
Hot, sunny with light breeze.
Herd was spread out evenly with foal in the centre and 7/8 horse length between individuals. ABCD noted as adults, Foal as is.
Condition of all horses was excellent.

All tail swishing and grazing except A with 100% synch.
A not grazing but relaxed.

6.0. C grazing towards herd.
6.02. Foal has moved 20 horse lengths from A. B back in sight. All horses seems unaware of us though we are upwind. There is a 5th horse o f s in a gully.
6.05. A lying down. NB. Other people walking towards horses closer than study observers. More horses observed further up the hill. Estimated herd size is 18-20. Distance between 2 groups 50+ h.l.
6.11. C now alert & observing tourists. All others continue behaviour.
6.16. B walking away from foal 4 h.l. and relaxed. C rejoining others on brow of hill & grazing.
6.17. B walking away from foal into gully. C now 6 h.l. from A. Momentarily alert. Foal more alert as he is more isolated.
6.20. Foal walking downhill, cantering to C, nuzzled and suckling.
6.21. A & C walking downhill towards water. Walk with D.
6.24. Foal trotting away from mother C to B with interaction with B & C. All horses trotting together.
6.25. All horses galloping downhill towards river and bottom of valley with lush grass. End of study.

We then observed a small herd of 4 bachelor males come down the hill with play fighting between 2 males. They crossed to the river at speed and when they got too close to the previous herd the stallion chased them off.
Study B

Time 5.39pm
24\textsuperscript{th} July 2013
GPS: 47694.74 N  105.91460 E

Weather:  Cloudy/humid.
Vegetation:  Lush grass in river valley.

Visible:  Herd consisting of 5 mares, 1 stallion, 2 foals.
Condition:  Excellent.

5.39. Sighted foal.
5.40.  12 & 3.
5.41.  12. Tourists 100 m away. 6.
5.42.
5.43.  3 & 1
5.44.  6
5.45.  2
5.46.  1 & 2
5.47.  –
5.48.  2
5.49. Truck passing – tourists approached. 6
5.50.  2 cars passing.
5.51.  13 & 12 & 1.
5.52.  12 & 1.
5.53.  2. Resting in centre of herd. Group of tourists observing.
5.54.  1 & 6.
5.55.  13
5.56.  –
5.57.  –
5.58. Group of tourists observing & van passing.
5.59. Large group of tourists about 30 m away
6.00.1 standing next to each other.
6.03. Herd generally moving away from tourists.
6.04.  13.
6.06. Herd now tightly packed within 30 m of tourists.
6.07.  1
6.08.  21 & 6.
6.09. Herd now spread out again.
6.13.  13
6.14.  2
6.15.  15 & 6. Truck passing. 2 & 1.
6.16.  13
6.17.  2 & 13
6.18.  13
6.19.  2 & 3 Tourist observing at close range.
6.20.  1
6.21.  6 with mother. Stallion positioned between herd & tourist.
6.22.  17
6.23.  1
6.24. Rain prevents further observations.
Study C

Time: 5.45

24th July 2013

GPS: 47694.74 N 105.91460 E

Weather: Cloudy/humid.

Vegetation: Lush grass in river valley.

Visible: Herd consisting of 5 mares, 1 stallion, 2 foals.

Condition: Excellent.

Study: Strong Stallion.

17.45 1 & 21.
17.48 14
17.49 1
17.50 1. Cars driving past & 5 tourists within 50m.
17.51 13
17.52 1
17.55 1 & 10 & 1. Tourists within 40 m.
17.58 13
18.0 1. No reaction to van with screeching brakes going by.
18.03 1. Tourists moving in closer (30 m)
18.04 3. Slightly away from tourists. 1 but with backs to tourists.
18.05 6. Moving in very close with rest of group. 1.
18.06 1. Grazing in much lighter group within 30m of tourists. Observed horse at end of group.
18.07 1
18.11 12 & 14 & 1. Checking out tourists.
18.15 1. While rest of group walk away from tourists.
18.16 12, 14 & 1 Slightly uphill away from water.
18.17 1 facing nearest tourists.
18.21 Spooked by tourist, moving away.
18.22 1 but positioned between herd and nearest tourist.
18.23 Rain stopped observations.
Study D

Same day and conditions as study C  
Subject was a mare in very good condition – fat & velvety coat.  
Mare observed for 45 mins entire time code 1 – grazing.

At beginning of observation mare raised her head in alert several times for few  
seconds to check on tourists but thereafter paid no heed to tourists or vehicles.  No  
special interaction with others in her group but did stay within close proximity to  
others.

Przewalski Horse Study  
Hustai National Park July 2013

Study one chosen horse for period of 1 hour if possible.  
A.  Note Individual ID (M,F,adult,foal)  
B.  Weather  
C.  Coordinates  
D.  Vegetation  
E.  Herd size  
F.  Viewers proximity from herd (2 horse lengths)  
G.  Time & Date  
H.* Body condition (3=excellent. 1=poor)  
I.  Anecdotal impact in area (ask Warden)  
J.  % Synchronisation between herd members  
K.  Outside disturbances

*  Normal, fat, thin (ribs)  
  Mane erect/hanging  
  Coat condition  
  Movement, lameness, injuries  
  Mare’s back end-problems with infection from flies after foaling

Behaviours:  
1Grazing.  No more than 10 sec rest between feeds.  Grass & herbs only.  
2Resting.  Standing, lying relaxed usually ears sideways.  
3Moving.  Any kind longer than 10 secs if during grazing.  
4Other feeding - non grass, bushes.  
5Drinking  
6Social interaction - necking, nuzzling, nursing, playing.  
7Hostile interaction - kick, bite, chase, ears back.  
8Sexual interaction.  
9Submission - avoiding tactics.  
10Neighing  
11Pawing ground.  
12Alert - head up, ears pricked forward.  
13Out of sight  
14Tail swish - not just for flies, could be in anger or excitement.  
15Rolling.  
16Urinating  
17Defecating.  
18Breaking wind.  
19Coughing  
20Scratching - which part of body.  
21Head tossing - excessive.  
22Other.
Before embarking on the expedition, research suggested that we would be fishing only in rivers, and reasonably fast flowing ones at that. It was therefore decided, as baggage weight was limited, to take just a couple of short length rods, equipped with a selection of spinners of various sizes.

We had understood that the main fish species that we might encounter were Lainok (a member of the trout family), Grayling, some Pike and not forgetting the legendary Taimen. This latter grows to 180cms in length and can weigh up to 55kgs.

Fishing in Mongolia has become internationally popular latterly, and specialist fishing trips to Lake Khosvgol in search of Taimen (a protected species) are commonly on offer.

Our expedition headed to Western Khosvgol, some distance from the Lake, and we tried our luck on the banks of the river Khogiin Gol, 40kms to the north north west of Ulaan Ul.

The river at this point is wide and reasonably shallow and rocky. Using different spinners and a selection of lures, our largest catch was a splendid Lainok, which measured 26 inches in length and weighed in at 5.5 lbs. The proud angler was one of the expedition grooms, using a hand line, as seen here below.

Grayling were in abundance, and we caught a total of 8 of these. All measured 14 or 15 inches, with a total weight of another 5 lbs.

Both the Grayling and the Lainok were agreed to be delicious.

Several members of the expedition tried their luck, although most did not have any. The most successful fishermen were, without doubt, the grooms, and despite our investment in rods, the hand line proved the most successful.

In hindsight, we should have taken more spinners and lures, as the rocks and logs took their toll. Tales of huge fish which got away, abounded, as reasons why replacement spinners were required.
A DVD of this excellent report with photographs is attached to this report.

Botanists in Vetch Valley
Along with a team of exceptional explorers and scientists, several samples of Mongolian herbs, flowers and other botanicals were examined, photographed, identified and recorded for the scientific record. The following are several species of particular Medicinal Plants I photographed and recorded for this sub-report on the expedition. These plants were verified by the expedition Mongolian Botanists specialising in local medicinal plant life. They were all located in the higher elevations of the Khovsgol region of Northern Mongolia in July of 2013.

- **Asiatic Yarrow** - a perennial of 20-40 cm tall with small whitish leaves, used for reducing fever.
- **Siberian Columbine** - a perennial of 30-75 cm tall with blue bell shaped pedals, used to treat the liver, stomach or intestinal issues and anti-throat inflammation.
- **Mongolian Milkvetch** - a bush like plant with yellow green like flowers 10-20 cm tall with numerous leaves, used to treat swelling and phlegm from the throat.
- **Red Thorowax** - a perennial with a curved stem and greenish yellow flower, may be solitary or in groups, 25-45 cm tall, and used to treat parasites and stomach diseases.
- **Rough Chervil** - a biennial with white petals in groups of 6-8, at 50-115 cm tall, has a sedative effect also enhances breathing.
- **Greater Celandine** - a perennial herb within a bush, yellow petals of 4, at 40-80 cm tall, used to treat fever and soothe pain.
- **Redhaw Hawthorn** - a bushy plant with white petals standing 30-60 cm tall, used for arrhythmia, reducing blood pressure, reducing liver fever
- **Color Changing Pink, Versicolor Pink** - a many flowering stem plant that stands 10-35 cm tall of very pink color 5 petals, used for treating pneumonia, scurvy, typhoid.
- **Gentiana Barbed** - an annual or biennial herb with erect stem at 20-40 cm tall with 4 bluish petals, used for inflammation of the liver
- **Crystalea Ledum, or Labrador Tea** - a white petals snow flake shaped evergreen shrub standing at 20-70 cm tall, used for the treatment of inflammation.
- **Carinthiac Felwort** - an annual herb with bluish petals standing 5-25 cm tall, used for treating fever and healing wounds.
- **Silverweed Cinquefoil** - a perennial with 5 yellow petals 5-3 cm long, used for headache, fever, hemorrhages.

If further information or photographs on these botanicals is needed, I can provide them on request.
LOCATION
Having flown from Ulaanbaatar, the expedition departed overland from Moron, the capital of Mongolia’s northern province of Khovsgol, driving cross country, in a north westerly direction. We passed over the mountainous Khoridol Saridag, descending into the Darkhad Valley, and established camp by the river Khogiin Gol, a distance of some 150km from Moron.

The terrain from this point is less suitable for vehicles, and we continued on horseback, in a north by north westerly line for a further 40 km, through the pass on Mount Tsagaan Chuluut, to the valleys beyond and the summer settlements of the Tsaatan (Reindeer People).

We set up camp in the first valley after descending from the pass, within sight of a small settlement of four urts. The altitude of the camp was some 7000 ft.
REINDEER PEOPLE

Urts are very similar to the teepees that one associates with Native Americans. Conical in shape, constructed from 25-30 logs, and with a hole at the apex. The frames were once covered in reindeer hides, but now rectangular sections of canvas are more commonly used. The doorway faces east, towards the rising sun, and is covered by a canvas flap. In winter, snow is packed around the outside of the urt to prevent wind blowing under the canvas walls. Each urt has a stove in the centre with the flue extending upwards to the hole in the apex. The urts that we saw were all equipped with solar panels which powered short wave radios used to communicate with other settlements and small TV sets which receive Mongolian and some Russian channels.

![Small settlements scatter a single valley, each made up of a single family group.](image)

The Tsaatan are nomadic, moving camp 4 or 5 times per year. This is in pursuit of fresh grazing, particularly the white lichen which the reindeer feed on. The log framework of the urt is left in situ, whilst the canvas coverings are packed up and moved to the new camp. The floor is covered in more canvas and the interiors are often brightly coloured. Like the Gers of the other ethnic groups, guests enter and sit on the left of the door, whilst the family sit on the right. The head of the family sits opposite the door.

![Each urt is occupied by a single family group who always sit on the right of the door when receiving guests.](image)

The wood stove is constantly burning, and tea always seems to be on the go. Tea is bought in large compacted blocks from China, and bears little resemblance to the western teas we are used to. Blocks of reindeer cheese hang from the roof frame, drying in the smoke. Tea and Reindeer milk seem to be the staple drinks.
Tea is brewed on the central stove and readily offered to visitors. Reindeer cheese and occasionally meat hang from the beams above to dry in the smoke.

A single family (parents and children) live together in an urt. A settlement or village is a collection of urts of inter-related family units. We observed, that in the valley in which we camped, such settlements contained between three and nine urts. Marriages occur usually between individuals -from different valleys or areas. When a couple marry, they make their own urt, with the help of family members. Girls/women will normally move to their husbands’ settlement. Marriages are for love, and not arranged.

We observed children going off to school, on reindeer, to a summer school which had been set up in a designated camp in the same valley. They are educated, year round, in similar such schools. The level of education received was said to be good.

The spoken language is Tuwan, although Mongolian is taught in schools. Writing is in the more modern Cyrillic script.

All settlements had their herd of reindeer which is commonly owned, and some also keep sheep and goats, and to a lesser extent, cattle and horses, which are kept elsewhere. The reindeer are tethered to short stakes overnight, located in the settlement. Guard dogs protect both Reindeer and urts from wolves. These are a real threat, as the night before our arrival, one of the main settlement’s guard dogs had been badly mauled.

The Tsaatan hunt using mostly .22 rifles; shooting red deer, wild pigs, or foxes. They also shoot wolves whenever the chance presents itself (wolf ankle bones sell for large sums as good luck charms). Meat, reindeer milk, cheese and yoghurt are the staple foodstuffs.

As of some years ago, the government initiated the pay of monthly allowances to the Reindeer People. This was in response to their dwindling numbers, as young people were moving away from the nomadic culture of their forefathers, to organised towns. A family currently receive between 120 and 140000 Togriks per adult and 70000 per child per month. This seems to have halted the previous population decline and has encouraged the young Tsaatan to maintain their historical way of life. The population of the valley that we
encountered comprised some 140 individuals, in 23 family groups. The total Reindeer People population was thought to be in the range of 400 – 500, and this was felt to be on an upward curve again. This population is in the Western Taiga only, and the local people thought that there were no Reindeer People left in the Eastern Taiga. They did know of other groups across the Russian border in the Tuva and Saba Republics, but didn’t think they were nomadic anymore.

With their government allowances, they no longer trade in reindeer antlers as was previously the case, and indeed many of the reindeer that we observed had very large, well developed antlers. They use the reindeer for milk, and for transport and as beasts of burden, and sometimes meat.

*Reindeer are well tended and versatile in their many uses for transport, milk and cheese.*
CONVERSATIONS WITH A SHAMAN

The Reindeer people are predominantly Shamanist and do not follow Buddhism. During our stay we were fortunate that the Shaman returned from a trip and we were given the opportunity to observe his practice. He lives with his daughter in a small settlement near the centre of the valley, and was happy to speak at length on a wide range of issues. He is the only remaining Shaman in the valley. Only a few years ago there were three, but one has died and the other is old and sick and in a clinic in Ulaanbataar.

He told us that to become a Shaman, one has to be nursed through a near death sickness by a Shaman. In his case, he was two years old and had been nursed by his Grandfather, then aged 50, a Shaman before him. The Shaman is chosen by the Spirits, who visit the sickness on the individual, such that he or she may be nursed back to health by a Shaman, and become one. At the age of two, his name was changed from Amra to his Shaman name Altzang. He is now 43.

The Russian inspired government persecuted Shamans until the first democratic government was elected in 1991. His grandfather was arrested and jailed for 5 years for being a Shaman, but was apparently greatly respected by the other prisoners and so did not suffer unduly. Altzang was trained by his grandfather, until the latter’s death in the 1990’s. There are no Shamans in training at the moment, and he is waiting for the Spirits to send him a candidate. Most families consult him at least once or twice per year, many travelling a long way to do so. He feels that he can help everyone in some way.

He arbitrates in disputes between individuals, and sorts out family or individual problems. He claims to be able to heal the sick, using only herbal medicines, can foretell the future and even forecast the weather.

He allegedly speaks to the dead, “as easily and clearly as others speak on the telephone”, and frequently seeks advice from the ancestors and in particular, previous Shamans. He believes that the ancestors send us messages to help and guide us, and to protect us in our daily lives. These messages are delivered by birds, and we should all take the time to listen to their song.

He has travelled with the Spirits to visit many foreign countries, and can transport people to different locations. He can control the forces of nature, and has called upon them to respond to certain natural crises, such as causing rain over the area of a fire. He maintains that government officials have sought him out, on more than one occasion, to assist in this regard. Nature apparently does not like to be manipulated, but accepts this if it is at the request of a Shaman.

He is very concerned about changes in Nature in recent years. He believes that the rivers are lower, the grazing not as good, and there is less rain and less snow than previously. The temperature changes are more extreme than before, and he believes that the Sun and the Moon are changing their patterns and the positions of the planets has altered. He believes this to have been caused by advances in modern technology. The Spirits have told him that man is ruining Nature. There is too much mining and too much gas is being released from the Earth. The Spirits of nature are very angry and upset and have shown him the future. He refused to reveal this to us.
Gold has been discovered in Khovsgol in recent years, but the government has refused to grant mining licences, to protect the province. Altzang is concerned that this policy will not be permanent. Otherwise he believes that the government is generally doing the right things, and creating parks, sponsoring the re-planting of trees and protecting the environment. He believes that they will continue to try and protect the Reindeer People. He speaks to the Spirits during Shamanic ceremonies which he performs at midnight when the stars are in position. As we were clearly interested in the workings of Shamanism, he offered to perform a ceremony that night, in which we might participate. He offered the urt next to his, for us to sleep in, at the conclusion of the ceremony. Five members of the expedition, plus an interpreter, duly rode to his settlement at dusk, eager to participate first hand in the ceremony.

Many shamanic stone hill shrines (ovoo) are seen throughout the region.

**PREPARATION FOR THE SHAMANIC CEREMONY**

Altzang explained that he uses a circular drum, about 75cm in diameter, with a single membrane during the ceremony. The other side of the drum has a wooden crossbar, such that he holds it like a shield. The drumstick looked to be a large bone, possibly a femur, with a metal strip inserted into it. There were also vestiges of fur attached.

During the ceremony, he will throw the drumstick at individual participants. It should be caught in the air by the person for whom it’s intended. Depending on whether it is caught the right way up, on its side or upside down, the person has to give a different response, and then give him the drumstick back, placing the leather thong over the middle finger on his right hand. If it is caught the right way up it is the most propitious, if it is upside down, it is the least.
Finally he asks each of us if we have one or more particular questions which we wish the Spirits to answer. At this point we are dismissed, and move to the urt nearby, returning at midnight.

**CEREMONY**

In the interim, most of the village has come to his urt, including eight or ten children. He gives white strips of cloth to each of the children, representing their dreams, and which they later fix on to his cloak before he begins to dance. He dresses in a bulky cloak, consisting of many long strips of cloth, largely blue, but also some yellow, red and white, all tied on to a base. He dons a headdress, some 15 inches high, also consisting of strips of cloth. To this is fixed a thick fringe which obscures his face. This is such that if he summons a bad spirit it will be unable to recognise him.

He begins to dance, breathing very heavily to the point of hyperventilating. He waves his head vigorously from side to side, throughout, and begins to chant a monotonous dirge. He bangs the drum as he moves, frequently gyrating. His two assistants ensure that he doesn’t stagger into the stove, and roll him numerous suspicious smelling cigarettes. From time to time he asks for Mongolian tea or reindeer milk.

After dancing for about an hour, he starts to throw the drumstick and receives appropriate responses. The children found the ceremony very light hearted and much giggling ensued. Some combinations of catches/responses caused some participants to be called out, to kneel and bow to the ground, whilst the Shaman danced over them, swishing the cloak, and banging the drum very close at hand.

Some were asked to drink from a small bowl which was allowed to slide down the drum, without using hands. If some is consumed, and the bowl lands the right way up, this is a propitious result.

The Shaman is in constant contact with the Spirits during this phase. They are the spirits of the elements of nature, as well as of ancestors and previous Shamans.

He is very tired by this point, and frequently staggers, being prevented from falling by his assistants. At the end of the ceremony, he is close to collapse and is disrobed by his
assistants, and assisted to a sitting position and fed copious amounts of tea and reindeer milk. He sits with his head in his hands, breathing heavily.

We were not allowed to film him from the time he started dancing until he is disrobed. Once he recovers he calls the participants forward, one by one, and has a conversation with each, answering their initial questions with the responses he has received from the Spirits, and telling their fortunes.

His replies were fairly generic in many cases, with “Don’t worry, it will sort itself out” being a stock reply. Some comments and replies were wide of the mark, but others were close. If one believes totally in what is being said, then surely it is valuable and pertinent.

It was by now about 2.45am and we retired to sleep, as did the rest of the village. We were given tea and fresh bread at breakfast, and Altzang insisted that I had a photograph taken with him before leaving. As we so often experienced during our travels, everyone was incredibly friendly and hospitable.

I was told that wherever I go and whatever I do, I should always make time to listen to the birdsong, which I will try my best to do.
Following our arrival by internal flight from Ulan Bator to Moron, and our introduction to our first tented camp, we were taken to an archeological site 20 km west of Moron called Uushigiin Uver.

Here we were shown 14 upright stones some over 3 metres high. These stones are ancient burial markers over 3000 years old, some carved with deer pointing skyward and a sun at the head of the stone. The ancient steppe tribes believed that after death, the souls of the dead ascend to the sky on the backs of deer, so the carvings represent this. Some stones were carved with a belt and tools such as an axe and spear, that would be needed in the afterlife. The most unique of the stones is a very tall one topped with the carved head of a woman.

While we were there we watched a group of Russian archaeologists excavating more stones. The Russian archeologist explained to Jenny that he thought the stones came from different periods. He was also a politician!

This was the first opportunity for the Ian Banks and Ian Gardiner to use their surveying skills as they mapped out the site and for Tom Gallagher who drew sketches of the various stones.
After exploring the vegetation beside the River Tuul we sped off in the minibus over the flat steppe dominated by cream coloured spiky Stika grass. There was a stop to search with binoculars then we took off in a slightly different direction over the parched ground until we came to a metal fenced area enclosing several stone sculptures. Professor Terbish explained that these were carved by Turkic nomadic tribes in the 7th or 8th centuries. They are funerary stones thought to commemorate local chieftains or military leaders. There are several men with their hands crossed over their chests, some holding a cup or vessel in front. Some had weathered and were indistinct. There was also a lion and a ram with curling horns in a different stone but most appeared to be granite. The statues all appeared to be facing towards a rectangular enclosure formed of four huge slabs of stone. The slabs forming the longer sides were about 10’ by 3’ high and the shorter sides about 7’ by 3’. It is believed that this is a grave or burial site and that the figures are facing it in respect or worship. I wondered if it was significant that they were facing westwards.

It was some time before we noticed, outside the enclosure, a line of standing stones leading to the site that must have been over a mile long as they continued as far as we could see over the steppe.

There are several sites in Mongolia where ‘Stone Men’ are found. This must be one of the best as at many sites the statues have been decapitated, presumably by incoming tribes.
Community Aid was targeted to two specific areas of the Khovsgol Region. Firstly educational books to Secondary Schools in the two larger towns (Moron and Ulaan) and secondly, glasses, medical and dental aid, children’s gifts etc, to the Tsaatan (Reindeer People) nomadic communities further north. This was over the mountain range of Khoridol Saridag and beyond the Darkhad Valley, skirting around the foothills of Mount Tsagaan Chuluut into the wet land valleys of the Talga to Mengebulag.

Summary of Distribution

The first school visited was the Delgermurun Secondary School in Moron with 600 pupils from all over this Northern Province. They boarded through the week either with relatives or in gers provided behind the main building. We were greeted very warmly by the governor and teachers, one of which informed us that the governor was a great singer. After the presentation of these much needed books, which were gratefully received, the governor was pressed to give us a rendition of his schools song. This he graciously gave. We were then offered refreshments of drinks and various sweets which is customary and as it was a very hot day, gladly received. We moved on to Ulaan but unfortunately the school was closed so we decided to donate their books on the return leg from visiting the Tsaatan.

After our epic journey by horse we reached the Tsaatan Reindeer People who had migrated about 30kms south, saving us some riding. The Tsaatan in their tepees welcomed us warmly. We sat down inside a tepee and were given tea made from reindeer milk and cheese made from the same source which was cordially accepted. A community aid station was set up by the doctor, the dentist and myself inside and outside of the two main tepees in the settlement. The doctor and dentist gave knitted teddy bears to their young patients (kindly donated by the Bournemouth Ladies) and the cuddly bears which were left were then presented to the babies and toddlers, who immediately hugged them as very precious items. I gave out many items which had been donated by supporters and expedition members including hair slides, ribbons, combs,
scarves, balloons and toys of all descriptions to 45 children from this settlement and three neighbouring ones, who had all arrived at the station.

The second day we revisited the settlement and were greeted again with tea and cheese, we then rode a short distance to where the children were schooled in a tepee beside the river and distributed notebooks, pencils and crayons, rulers, pencil sharpeners, erases and dictionaries. As lunch break arrived we enjoyed playing ball games, which produced much fun and laughter, especially retrieving the ball from the river!

On our return south from the Tsaatan we distributed books to two schools in Ulaan. These were gratefully accepted. Reading glasses were given to the local people and the horseman, drivers and staff who had worked so hard in supporting the expedition. A big thank you is due to all who donated and contributed to passing on this much appreciated community aid. It was warmly received by all recipients who were so grateful.

The Children with some of their gifts at the Aid Station complete with two young reindeer
Objectives

1. To provide medical assistance to ailing or injured expedition members and local staff to enable them to continue with their allocated tasks, ensuring the successful completion of the expedition.

2. To provide emergency aid to local people, if required.

Sickness reported by expedition members

Ankle sprain (n=1) – No indication for X-ray; treated with ice, elevation and non-steroidal anti-inflammatory analgesia.

Constipation (n=1) – Treated with laxatives.

Viral upper respiratory tract infections (n=3) – Symptomatic treatment advice given in each case.

Insect bites (n=2) – Treated with antihistamine cream/tables, and hydrocortisone cream.

Kicked by horse (n=1) – Shoulder contusion treated with simple analgesics.

Knee sprain (n=1) – No indication for X-ray; treated with non-steroidal anti-inflammatory analgesia. Stronger (opioid) analgesia required for active phases of expedition.

Middle ear infection (n=1) – Symptomatic treatment advice.

Prickly heat (n=1) – Treated with hydrocortisone cream; symptomatic management strategies explained.

Foreign body in ear (n=1) – Live insect removed from ear with tweezers under direct vision.

Sickness reported by local staff

Kicked by horse (n=1) – Bleeding from nose stopped with simple first aid measures.

Back pain (n=4) – All had mechanical back pain, and were advised to take simple analgesia (if available).

Difficulty with memory and concentration (n=1) – Post severe head injury in 2010; patient was advised that this is entirely normal.

Knee pain (n=3) – All had symptoms suggestive of osteoarthritis, and were advised to take simple analgesia (if available).
Elbow pain (n=2) - symptoms suggestive of osteoarthritis; advised to take simple analgesia (if available).

Congenital deformity of hand (n=1) – Webbing of fingers of left hand, without functional deficit. Same deformity present in other members of family. Advised surgery may be possible, but could make hand function worse.

Papule (pimple) on buttock (n=1) – No treatment required.

Dizziness (n=2) – Dizziness on standing, especially at end of day; advised to increase fluid intake.

Lump on thigh (n=1) – Benign ganglion secondary to trauma. No treatment required.

**Problems reported by local (non-staff) people**

With few exceptions, the local (non-staff) people presented with either self-limiting acute illnesses, or with chronic complaints which required confirmation, using diagnostic facilities, and/or long term medication for their management. These people were redirected to local primary care facilities or to secondary care.

**Facilities & resources**

Privacy was a at times a problem as no designated, sheltered space was available for consultations, therefore patients had to be seen in the open air. Physical examination was therefore extremely limited. For the same reason confidentiality was at times compromised. Although our interpreters did their best to assist us, they were not professional interpreters and did not always know the appropriate word, especially medical terms. Also, for cultural reasons or simple embarrassment, they were not always willing to interpret certain questions or advice.

**Medical Kit**

The medical kit was checked prior to departure; drugs and supplies that had passed their expiry dates were replaced. Additional supplies were required to cater for the relatively high risk of traumatic injuries on a horseback expedition, such as cervical spine collar, limb splints, and tourniquets. One team member was anticoagulated, therefore equipment and supplies to treat major blood loss were added to the kit.
Conclusions

The expedition members and local staff suffered only minor injuries and illnesses during the expedition, which were all managed easily with the supplies contained in the expedition medical kit, or from their own first aid kits. Requests from non-staff local people for treatment could not be accommodated due to the limitations of an expedition medical kit, which is not intended for the diagnosis and management of chronic illness.

Recommendations

1) Where there is an expectation of treating local people (other than in emergencies), demographic information should be obtained in advance so that a separate kit, containing the appropriate drugs/formulations, can be made available for the group in question (this would also allow the medical team to provide appropriate health promotion to the community). However, it should be remembered that are ethical difficulties associated with diagnosing and initiating treatments for chronic complaints in resource poor environments.

2) A private area, where a patient can lie down to be examined if necessary, should be provided to ensure patient dignity and confidentiality.

3) Where possible, professional interpreters should be used for medical consultations.

Doctor’s Clinic
MONGOLIAN KOVSGOL EXPEDITION 2013

DENTAL REPORT
By Surg Lt (D) Angela Critchlow BDS MJDF RCS Eng RN

Introduction

This report outlines the dental contribution to the Mongolian Khovsgol Expedition 2013 and details the preparation, what was achieved and how.

Preparation

From notification of the expedition to departure there was one month available to plan for the expedition. Prior to departure I contacted another Royal Naval Dental Officer who had completed a Scientific Exploration Society expedition to Mongolia two years previous. She guided me as to the nature of dental treatment provision possible and provided me with a recommended dental equipment list.

The majority of the expedition members had attended a Briefing Weekend at Expedition Base earlier in the year. During this weekend the expedition doctor had advised them to have their own dental check-up and any outstanding treatment completed prior to travel.

As time was at a premium prior to travel I unfortunately did not get the opportunity to contact any dental or healthcare organisations to ask for donations such as toothbrushes, toothpaste or mouthwash.

I contacted my dental indemnity organisation, Dental Protection, prior to departure who advised that they would indemnify me for Good Samaritan emergency dental treatment carried out in Mongolia on expedition members and local people alike; they issued me with a certificate to demonstrate this. Along with this I also took a copy of my General Dental Council registration certificate on the expedition.

Dental Equipment

All dental equipment and supplies were kindly donated by the Defence Dental Services at short notice. This was packaged and carried in a single large suitcase for both the outbound and return journeys and throughout Mongolia. A dental kit list can be found at Annex A.

Prior to departure I contacted Aeroflot, the carrier I used for both the outbound and return flights, to ask if they would authorise additional baggage as a goodwill gesture due to the nature of the expedition. They remained unyielding however in their baggage restrictions and therefore charges were incurred on both journeys.

Dental Nursing and Translator Support

With no qualified Dental Nurses among the group, three volunteers were chosen, two whom had helped with dental treatment provision on similar expeditions in the past. Their help was invaluable in the care of the patients and ensuring the smooth running of the clinics. The volunteer nurses were not asked to assist in the direct operating field nor were they expected to coordinate the cross infection control.

A translator was appointed to work with the dental team and she was present throughout initial consultations and treatment. Needless to say without our translator these clinics would not have been possible.
Dental Clinics and Logistics

We set up a temporary clinic once we had reached the Tsaatan (Reindeer People). One settlement here kindly allowed us the use of an urt for our clinic for two consecutive days. Although the dental team stayed in this one settlement, news of the arrival of a dentist spread quickly to the adjacent nearby settlements and patients travelled across to attend the clinic. After our translator had explained to patients in the queue that they could not all stand inside the urt watching treatment take place, they patiently waited outside and used the time to catch up with friends and family. 22 patients were seen in total at this clinic over the two days.
A second clinic was established following our return to the camp by the Khogin Gol River. A ger was provided by the remote village we visited as a temporary clinic for the day. 11 patients were seen at this clinic.

![Fig. 4 Outside the ger used for our second clinic](image)

![Fig. 5 Inside the ger clinic](image)

In both locations we used a collapsible camp chair as our patient couch. One of the volunteer nurses was designated to support the patient’s head whilst another provided lighting through use of a head torch. Concurrently the third volunteer nurse was recording clinical notes as directed and ensuring the continual supply of freshly boiled water for decontamination purposes.

**Treatment Provision**

During the three days that dentistry was practiced, 33 patients were seen and 48 teeth were extracted in total. A summarised log of patients seen and treatment completed can be found at Annex B.

The majority of the patients complained of a ‘hole in the tooth’, with a history of associated pain. This was generally observed to be gross caries (decay) in one or more teeth.

Medical histories were ascertained through the help of the translator. Most of the patients had apparently clear medical histories, presumably owing to the lack of ready access to medical care and therefore having an inherent risk of undiagnosed comorbidities.

Extraction was the treatment of choice for all patients. Whilst temporary restorative materials had been included in the dental kit, in the absence of being able to offer definitive restorations and guarantee absence from pain, coupled with the remote location of these people, they all opted for extraction.

Extractions were performed under local anaesthesia following verbal informed consent from the patient via the translator. The translator also discussed the post-operative instructions. Conditions were not ideal as no pre-operative radiograph could be taken and no suction was available, though gauze was used to good effect.

Once treatment was completed, patients were given toothbrushes and toothpaste and the paediatric patients were also given knitted teddies.

**Interesting Cases**

- Upon our arrival the local Shaman thanked the Doctor and I for offering our services but explained how people in the area don’t believe in Western medicine and that they instead look to him to heal their ailments – we were subsequently both inundated with patients!
• A 34 year-old lady attended in pain with gross unrestorable caries affecting her entire upper arch. She had four difficult teeth extracted as the last patient of our first Tsaatan clinic day. My fears that she had been turned off Western medicine for life were fortunately allayed as she returned the following morning and had seven further teeth extracted! Interestingly her lower arch was clinically caries-free.

• An 11 year-old girl was brought to our campsite on reindeer-back by her father late one night in severe dental pain. We were due to depart the village the following morning so a grossly carious upper left first primary molar was successfully extracted by torchlight.

Cross Infection Compliance

Needless to say universal cross infection control was practiced and the dental team was briefed on the importance of this prior to commencement of the first clinic.

Space was understandably at a premium within an urt or a ger and as such the establishment of a dirty to clean workflow presented an inherent challenge. Basins and buckets were bought in Ulaanbaatar and Moron to facilitate this.

After use, instruments were soaked and scrubbed in Rapidex®, then immersed in Actichlor™ disinfectant for 30 minutes before finally being placed in a pressure cooker over a stove. In between these stages instruments were rinsed and dried.

Disposable single-use dental examination instruments were taken but not regularly used due to the need to dispose of these in a sharps bin. As only one sharps bin was taken it was quickly realised that regular use of these kits would very quickly fill the sharps bin and prevent further treatment taking place.

Personal protective equipment such as heavy-duty gloves for decontamination purposes, clinical tunics and visors were available for use, along with disposable single-use clinical gloves, aprons and face masks.

Running water, Hibiscrub™ and alcohol gel were available for hand hygiene.

Clinical waste bags were disposed of at the local hospital in Moron, whilst the sharps bin was taken to the hospital in Ulaanbaatar for disposal.

Mongolian Oral Health and Dental Care Availability

Information regarding Mongolian oral health and dental care provision was gathered from the patients via the translator and also through personal observations. Traditionally the Mongolian diet is not highly cariogenic, consisting largely of cured meat, bread, butter, milk, cheese and yoghurt. However, Mongolian people were observed to frequently snack on bread and butter covered with a generous helping of sugar.

Caries risk was noted to be high, with gross caries evident particularly in children and young adults. Periodontal disease with severe bone loss and resultant tooth mobility was noted in many adults. Interestingly, older adults did not appear to demonstrate such a high caries rate as children and young adults, perhaps due to an increasing access to Western candy and carbonated beverages over recent years.

A large majority of patients seen had never visited a dentist; this was due to inaccessibility as well as
cost. The translator explained how many dentists in Mongolia will only extract mobile teeth and that they do not routinely use local anaesthetic. She also explained that people do not visit dentists for routine check-ups, only when they are in pain.

There was no comprehension as to the role of refined carbohydrates in the aetiology of caries. The common belief was that medication and tablets cause holes in teeth and that these holes can be fixed by either herbal remedies or rubbing tobacco into their teeth and gums.

The translator said that the majority of people only brush their teeth occasionally when they remember and certainly not before bed. She also said that toothpaste is infrequently used on the toothbrush. Despite this, oral hygiene was observed to be generally fair and it was noted that toothbrushes (commonly extremely splayed) were hanging over the basin in most urts and gers visited.

![Fig. 6 Toothbrushes hanging in a ger](image)

**Recommendations for Future Visits**

- Arrange to visit the medical school where dentistry is taught in Ulaanbaatar
- Arrange to visit a dentist in Ulaanbaatar or Moron
- Contact the Ministry of Health in Mongolia to discuss health care provision and demographics (incidentally this was spotted on the same street as our hotel in Ulaanbaatar on our departure)!
- Endeavour to secure additional baggage for the dental kit as a goodwill gesture from the carrier
- Do not take single-use examination kits unless there is the baggage capacity to take additional sharps bins for their disposal
- Provide oral health education sessions with posters and demonstration models in the communities visited
Acknowledgements

I am extremely grateful to Maggie, Villa and Kate S for volunteering to work with me and for their support and enthusiasm, and to Kate C for her medical expertise and advice. Thank you also to our translator, Dairii, for making the dental clinics possible and for keeping the queue of patients in order! The Defence Dental Services were very encouraging of my participation in the expedition and allowed me to borrow the dental equipment required. I was appreciative of Lt Col Mackenzie and Cdr Follington of MDHU Portsmouth allowing me the time away from work to partake in the expedition. Finally, to Great Genghis Expeditions who arranged for the disposal of the clinical waste and sharps bin.

Summary

This successful expedition demonstrates how a dental team can be used to good effect in the provision of aid to remote communities.

All patients in pain were seen and successfully rendered pain-free. A number of these patients may have otherwise developed severe and potentially life-threatening abscesses and sepsis.

Despite the success of these interventions, the ideal scenario would be regular visits to the remote communities by a qualified dental team. The provision of oral health education is paramount to an improvement in the oral health of these communities.
Annex A to Dental Report

DENTAL KIT LIST

Emergency Medication

- Glyceryl trinitrate spray (400mcg/dose)
- Salbutamol inhaler (100mcg/actuation)
- Glucagon hydrochloride injection (1mg)
- Adrenaline injection (1:1000, 1mg/ml)
- Aspirin dispersible tablets (300mg)
- Oral glucose gel

Cross Infection

- Clinical waste bags
- Sharps bin
- Heavy-duty gloves
- Clinical tunics
- Visors
- Clinical gloves
- Aprons
- Face masks
- Scrubbing brushes
- Hibiscrub™
- Alcohol gel
- Rapidex® sachets
- Actichlor™ tablets
- Basins and buckets
- Pressure cooker
- TST strips
- Blue roll

Basic

- Tissues
- Cotton wool rolls
- Cotton wool pellets
- Gauze
- Disposable examination kits
- Syringes
- Needles – 30G x 3/4” and 27G x 1 3/8”
- Local anaesthetic cartridges:
  - Lidocaine hydrochloride 2% with adrenaline 1:80,000
  - Articaaine hydrochloride 4% with adrenaline 1:100,000

Surgical

- Luxators
- Couplands elevators
- Cryers elevators
- Warwick James elevators
- Upper molar forceps – left and right
- Lower molar forceps
- Upper and lower premolar forceps
- Upper and lower incisor forceps
- Root forceps
- Bayonet forceps
- Cow horn forceps
- Needle holders
- Toothed tissue forceps
- Scissors
- Disposable scalpels – 15 blade
- Surgicel®
- 4.0 Vicryl Rapide™ suture

Restorative

- IRM
- Ledermix
- Dycal®
- Chemfil®
- Disposable missing pads
- Spatulas
- Spoon excavators
- Carvers
- Pluggers
- Scalers

Miscellaneous

- Alveogyl
- Blunt needles – 23G x 1”
- 10ml syringes
- Sterile saline 0.9% sachets
- Patient glasses
- Head torch
- Notepad and pen
- Toothbrushes
- Toothpaste
- Knitted teddies
### ANNEX B TO DENTAL REPORT

#### SUMMARISED PATIENT LOG

<table>
<thead>
<tr>
<th>Date</th>
<th>Pt No</th>
<th>Sex</th>
<th>Age</th>
<th>Complaint</th>
<th>Findings</th>
<th>Treatment</th>
</tr>
</thead>
<tbody>
<tr>
<td>15 Jul 13</td>
<td>1</td>
<td>F</td>
<td>19</td>
<td>Pain and hole in tooth LRQ</td>
<td>LR7modl gross caries</td>
<td>XLA LR7</td>
</tr>
<tr>
<td>15 Jul 13</td>
<td>2</td>
<td>M</td>
<td>16</td>
<td>Pain and hole in tooth LLQ</td>
<td>LL6dl gross caries and abscess</td>
<td>XLA LL6</td>
</tr>
<tr>
<td>15 Jul 13</td>
<td>3</td>
<td>F</td>
<td>21</td>
<td>Pain and hole in tooth LLQ</td>
<td>LL7odlb gross caries</td>
<td>XLA LL7</td>
</tr>
<tr>
<td>15 Jul 13</td>
<td>4</td>
<td>M</td>
<td>38</td>
<td>Pain and mobile tooth URQ</td>
<td>UR7do caries and mobile, UR8xx</td>
<td>XLA UR7 and UR8</td>
</tr>
<tr>
<td>15 Jul 13</td>
<td>5</td>
<td>M</td>
<td>41</td>
<td>Pain URQ and LLQ</td>
<td>UR6mo gross caries, LL8 mobile</td>
<td>XLA UR6 and LL8</td>
</tr>
<tr>
<td>15 Jul 13</td>
<td>6</td>
<td>F</td>
<td>21</td>
<td>Pain LLQ</td>
<td>LL6o gross caries</td>
<td>XLA LL6</td>
</tr>
<tr>
<td>15 Jul 13</td>
<td>7</td>
<td>M</td>
<td>50</td>
<td>Pain upper gum from lower teeth – wants upper denture</td>
<td>Edentulous upper, teeth sound in lower. No trauma noted upper</td>
<td>Recommend upper denture</td>
</tr>
<tr>
<td>15 Jul 13</td>
<td>8</td>
<td>F</td>
<td>45</td>
<td>Pain URQ and LRQ</td>
<td>UR4do caries, LR5do caries</td>
<td>XLA UR4 and LR5</td>
</tr>
<tr>
<td>15 Jul 13</td>
<td>9</td>
<td>F</td>
<td>33</td>
<td>Pain ?ULQ</td>
<td>UL8 and LL8 gross caries</td>
<td>XLA UL8 and LL8</td>
</tr>
<tr>
<td>15 Jul 13</td>
<td>10</td>
<td>F</td>
<td>16</td>
<td>Painful gum LRQ</td>
<td>LR7 gross caries and abscess</td>
<td>XLA LR7</td>
</tr>
<tr>
<td>15 Jul 13</td>
<td>11</td>
<td>M</td>
<td>54</td>
<td>Hole in tooth LLQ</td>
<td>LL6 gross caries and abscess</td>
<td>XLA LL6</td>
</tr>
<tr>
<td>15 Jul 13</td>
<td>12</td>
<td>M</td>
<td>41</td>
<td>Pain ULQ</td>
<td>UL7dop gross caries</td>
<td>XLA UL7</td>
</tr>
<tr>
<td>16 Jul 13</td>
<td>13</td>
<td>F</td>
<td>10</td>
<td>Wobbly tooth URQ</td>
<td>URE mobile, close to exfoliation</td>
<td>Reassured will exfoliate naturally</td>
</tr>
<tr>
<td>16 Jul 13</td>
<td>14</td>
<td>F</td>
<td>34</td>
<td>Pain all teeth</td>
<td>UL2, 3, 4, 5x, 6xxx, 7 gross caries.</td>
<td>XLA UL4, 5xx, 6xxx, 7</td>
</tr>
<tr>
<td>16 Jul 13</td>
<td>15</td>
<td>F</td>
<td>34</td>
<td>Same pt as above</td>
<td>UR2, 3, 4, 5x, 6, 7xxx gross caries</td>
<td>XLA UR3, 4, 5x, 6, 7xxx and UL3</td>
</tr>
<tr>
<td>16 Jul 13</td>
<td>16</td>
<td>F</td>
<td>44</td>
<td>Pain and holes in teeth URQ and ULQ</td>
<td>UR5mo, UR4do, UL4do and UL5mo caries</td>
<td>XLA UR4, 5 and UL4, 5</td>
</tr>
<tr>
<td>16 Jul 13</td>
<td>17</td>
<td>M</td>
<td>41</td>
<td>Pain, hole and mobile tooth ULQ</td>
<td>UL6 mobile, no caries</td>
<td>XLA UL6</td>
</tr>
<tr>
<td>16 Jul 13</td>
<td>18</td>
<td>M</td>
<td>46</td>
<td>Pain and mobile teeth ULQ and LLQ</td>
<td>UL7 and LL7 mobile</td>
<td>XLA UL7 and LL7</td>
</tr>
<tr>
<td>16 Jul 13</td>
<td>19</td>
<td>F</td>
<td>25</td>
<td>Pain and hole in tooth LRQ</td>
<td>LR7 gross caries</td>
<td>XLA LR7</td>
</tr>
<tr>
<td>16 Jul 13</td>
<td>20</td>
<td>M</td>
<td>51</td>
<td>Pain and hole in tooth URQ</td>
<td>UR7do small cavity</td>
<td>Pt declined treatment</td>
</tr>
<tr>
<td>16 Jul 13</td>
<td>21</td>
<td>M</td>
<td>18</td>
<td>Pain and hole in tooth URQ</td>
<td>UR6mo gross caries</td>
<td>XLA UR6</td>
</tr>
<tr>
<td>16 Jul 13</td>
<td>22</td>
<td>F</td>
<td>11</td>
<td>Pain ULQ</td>
<td>ULDdo caries</td>
<td>XLA ULD</td>
</tr>
<tr>
<td>18 Jul 13</td>
<td>23</td>
<td>M</td>
<td>67</td>
<td>Pain LRQ</td>
<td>LR8 gross caries</td>
<td>XLA LR8</td>
</tr>
<tr>
<td>18 Jul 13</td>
<td>24</td>
<td>M</td>
<td>33</td>
<td>Pain URQ and LLQ</td>
<td>UR8modb gross caries, LL6xx and abscess</td>
<td>XLA UR8 and LL6</td>
</tr>
<tr>
<td>18 Jul 13</td>
<td>25</td>
<td>F</td>
<td>19</td>
<td>Pain URQ</td>
<td>UR5do caries</td>
<td>XLA UR5</td>
</tr>
<tr>
<td>18 Jul 13</td>
<td>26</td>
<td>F</td>
<td>20</td>
<td>Pain LLQ</td>
<td>LL8o gross caries</td>
<td>XLA LL8</td>
</tr>
<tr>
<td>18 Jul 13</td>
<td>27</td>
<td>F</td>
<td>26</td>
<td>Pain URQ and LRQ</td>
<td>UR5mob gross caries, LR8mol gross caries</td>
<td>XLA UR5 and LR8</td>
</tr>
<tr>
<td>18 Jul 13</td>
<td>28</td>
<td>F</td>
<td>46</td>
<td>Mobile tooth LRQ (history of trauma)</td>
<td>LR4 mobile</td>
<td>XLA LR4</td>
</tr>
<tr>
<td>18 Jul 13</td>
<td>29</td>
<td>F</td>
<td>11</td>
<td>Pain URQ</td>
<td>URE gross caries</td>
<td>XLA URE</td>
</tr>
<tr>
<td>18 Jul 13</td>
<td>30</td>
<td>F</td>
<td>33</td>
<td>Swelling ULQ</td>
<td>UL4do gross caries and abscess</td>
<td>XLA UL4</td>
</tr>
<tr>
<td>18 Jul 13</td>
<td>31</td>
<td>M</td>
<td>24</td>
<td>Pain ULQ</td>
<td>UL6 gross caries</td>
<td>XLA UL6</td>
</tr>
<tr>
<td>18 Jul 13</td>
<td>32</td>
<td>M</td>
<td>9</td>
<td>Pain LLQ</td>
<td>LLE gross caries</td>
<td>XLA LLE</td>
</tr>
<tr>
<td>18 Jul 13</td>
<td>33</td>
<td>M</td>
<td>6</td>
<td>Pain LLQ</td>
<td>LLE gross caries and abscess</td>
<td>XLA LLE</td>
</tr>
</tbody>
</table>
COMMUNICATIONS REPORT

by

Colonel John Blashford-Snell OBE, FRSGS

and

Lt Col Tom Gallagher

1. Field communication was by Motorola VHF handheld radios that worked well, giving up to 10 kms ‘line of sight’ communication. These were powered by AA dry cell batteries.
2. A Tridium Sat-Phone was used for international calls and where coverage existed near towns, members found it possible to use their ‘i phones’ and ‘i pads’. Photographs for the website were transmitted by Mandy West on her ‘i pad’.
3. The reindeer people had TV facilities powered by solar panels. See diagram below:
REPORT DISTRIBUTION

1. Mongolian National University
2. The Royal Geographical Society
3. The Scientific Exploration Society (2 copies)
4. The British Embassy, Mongolia
5. Great Ghengis Expeditions
6. Expedition Members (DVDs)