

The Conservation Expeditions 2016-2018

John van Wyhe



TEMBUSU
COLLEGE



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Dedicated to the students who made these expeditions possible.

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Tembusu College, National University of Singapore.

Cover photo: a pair of Black macaques on Sulawesi. The furthest animal has a hand wounded by a poacher's snare.

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Foreword

I am very happy to write this foreword. Singapore is located in the heart of Southeast Asia. However, very few Singaporeans know that this region has the world's richest biodiversity, on land and at sea. Southeast Asia is also the home of some unique species of animals, such as, the orangutan and the komodo dragon. I am therefore very pleased that students of Tembusu College have embarked on these four expeditions to see and experience the splendour of the natural world.

Memories are short and few Singaporeans would have heard of Krakatoa and know what it is. Indonesia is situated in the so-called Ring of Fire. It has over 130 active volcanoes. As I write, we are witnessing the aftermath of two successive earthquakes which hit Lombok in the past two weeks.

I am very glad that one student expedition went to visit Anak Krakatoa (child of Krakatoa). In 1883, Krakatoa exploded with a violence which is unthinkable. It was 13,000 times more powerful than the atom bomb which was dropped on Hiroshima. Volcanic ash reached a height of 50 kilometres. It enveloped the world and lowered global temperature by more than 1 Degree Celsius.

I am glad that the students also went to visit Komodo Island, the heart of Borneo and Manado. I am told that the coral reefs in Manado are in excellent health and sustain a very rich marine life. I commend the students for having organised these four expeditions. According to Dr John van Wyhe, the students did an excellent job planning and organising the trips. I also salute them for their resilience and willingness to immerse themselves in the places they visited. I am particularly struck by the fact that, everywhere they went, they were willing to eat in the markets and by the roadside. I am sure they have learned many lessons from these expeditions. I hope that they will become good stewards of our natural heritage, on land and at sea.

I would like to praise their leader. Dr van Wyhe is a world authority on Darwin and Wallace. He loves nature and the environment. He is knowledgeable, brave and adventurous. The students couldn't have asked for a better guide and mentor.

Lastly, I would like to thank NUS and Tembusu College for supporting these expeditions. Such trips complement book learning. By visiting our neighbouring countries, they learn first-hand, about the geography, history, culture and nature of this wonderful and diverse region. We should continue to encourage our students to go on such expeditions.

Professor Tommy Koh
Rector, Tembusu College
August 2018

Introduction

“Because of its peculiar and fantastic nature, its complex variety of peoples, and its fabulous richness, the archipelago is one of the most fascinating regions of the earth.”

Covarrubias, *Island of Bali* (1937), p. 1.

In August 2016 I was approached by some students of Tembusu College with an intriguing proposal. They had an ambitious scheme. Would I help plan and accompany them on a voyage through Indonesia to culminate with the island of Komodo, home to the famous dragon, the world’s largest lizard?

The group was lead by business administration student Ong Kah Jing. They proposed to do all the actual organizing of transport, accommodation and arrangements with tour guides and so forth. They also conducted all the research and fundraising. After many meetings together and with STEER, the plans were settled.

STEER is the National University of Singapore’s International Relations Office programme called Study Trips for Engagement and Enrichment which funds student trips overseas to facilitate familiarity and contacts with other regions. The programme, as its website describes is, “designed to familiarise students with the diverse socio-cultural-economic environments of new and fast-evolving regions through a mix of classroom-based learning and experiential site visits.” The trips “are designed to be thematic and help our undergraduates break existing mindsets about these emerging regions through participation in an immersive educational and cultural experience.” Most of the expeditions were also generously co-funded by Tembusu College.

For the Komodo expedition I provided a suggested route and important sites to visit, and during the expedition itself, told them all I knew about the places, peoples and creatures we encountered. This and the subsequent expeditions were primarily focused on examining the the state of nature conservation today. Along the way I constantly interacted with students and taught them almost continuously on subjects ranging from the history of science to architecture, anthropology, ethnology, biology and geology. This has been one of the most productive and effective teaching experiences I have ever witnessed and I am convinced the students were changed by the expeditions and will carry the experience for the rest of their lives.

During the Komodo expedition the students and I saw and learned previously unimaginable things, at least to us. We travelled through Java, Lombok, Bali, Flores, Rinca and Komodo. Kah Jing and his team created an award-winning documentary about the voyage, ‘The Conservation Conversation’. (Now on YouTube.) Inspired by that experience, I decided to propose to students of the College another expedition, and then another.

The following are my personal journals written during each day of the expeditions- often at the very same time as the events described. They are therefore only one person’s perspective and convey my own impressions and experiences. Some sections may seem a little rough, but I have chosen to leave them as they were written to preserve the sense of immediacy which they record. They were often hurriedly written at the end of an exhausting day. The entries were posted to my private Facebook account and are now reproduced here (somewhat revised) to make this record more widely available. All of the photographs are my own except those marked with an *. For reasons of confidentiality, I have, in most cases, omitted the names of individual students.

John van Wyhe
York, July 2018

Acknowledgments

I am very grateful to all those who contributed to and made these expeditions possible. Randall Ong and his talented team at STEER made the trips possible, provided advice and logistical support and helped arrange our meetings with many interesting people in Indonesia. I am particularly grateful to Professor Tommy Koh, Rector of Tembusu College, for writing the foreword to this volume. Gregory Clancey, Master of Tembusu College, was unfailingly supportive and Foo Junhong helped with many financial and administrative matters. Jeremy Fernando kindly gave advice on publishers. I am also grateful to Angela Chua for assistance. Martin Henz and Captain William Blake made the Krakatoa voyage possible and extremely interesting. Most of all I am grateful to the students who organized and participated in these expeditions.

The Komodo Expedition May 2016



Route from Singapore, Jakarta, Lombok, Bali, Flores, Rinca and Komodo. (Google maps)

Komodo expedition day 1 9 May 2016

6am Arriving at Changi airport I find all the students assembled. We checked in together and I gave a brief impromptu speech to inaugurate our journey. For the first time I wore a microphone so that Kah Jing could gather material for his documentary project.

8.30 we took off on a Tiger Air Airbus A320 for Jakarta. I am re-reading David Attenborough's *Zoo quest for a dragon* (1959), about his expedition through Indonesia to Komodo in 1956. Like us, David's journey began in Jakarta. At that time the Republic of Indonesia had only recently become independent from the Netherlands.

David and his cameraman Charles Lagus spent an aggravating three weeks in Jakarta struggling with bureaucracy and red tape in order to get permissions for filming and travel. David wrote "Djakarta, in fact, was noisy, crowded, bustling, in places squalid, and everywhere very, very hot. We longed for the moment when we could leave it." Not much has changed.

8.50 local time we landed at Jakarta after a pleasant flight.

We had our passports checked after a little confusion over whether we needed to purchase a visa on arrival. I paid for one but the stamp in my passport stated that as a tourist, I was exempt. The lady behind the visa counter kindly gave me my money back. We collected our bags. I changed currency. With Indonesian Rupiahs it's very confusing. I am not sure how many hundreds of thousands I exchanged. The simplest conversion seems to be, remove 4 zeros and you get the approximate amount in Singapore dollars.



The expedition team at Jakarta airport.

We then had a little snack, our first Indonesian food, from a bakery at the airport. These were small pastries called Rotiboy. They were a sort of sweet bun with coffee flavour. Very good.

9.57 we departed in a rather small and antiquated bus after a fifteen minute wait in the heat in front of the airport. Then there was some confusion about where to meet the bus so we had to walk to the other end of the airport.

The bus journey was interminable. The traffic is congested, chaotic and slow moving. The air-conditioning in the bus is almost nonexistent. I rely on my little fan from Bali. Every flick of the wrist gives an instant of cooling breeze. It makes one appreciate how luxurious an electric fan is.

11.30 this ride goes on and on. The banter and card playing at the back of the bus have subsided as most of the students snooze. We had very little sleep last night. Ah we just turned off the motorway.

Now we drive through shady tree-lined lanes. Men with little wooden push carts on bicycle wheels sell local snacks and drinks on the pavement as we trundle by.

11.45 we arrived at Ibis Menteng Jakarta Hotel. The check-in for such a large group takes time but at last we are given our room keys and wifi passwords.

1pm With much trepidation, we crossed the busy road in front of the hotel, like an endless rushing river of tooting motorbikes and cars, to Satay Khas Senayan for lunch.

1.36 our lunch is finally served! Beef and chicken satay. And another kind we could not quite figure out but discovered was chicken intestine satay! Not keen. There was also Kang Kong, fried tofu, rice and fried fish in a splendid tomato sauce. On the menu are several new drinks to try. I chose chilled "durian juice". It turned out to be a durian milkshake. Divine! The food was excellent and cost us 125,000R each, or about 12 Singapore dollars.

2.05 on our way again. Ah we aren't because our bus driver has vanished and is not answering his mobile. So we wait at the hotel. Which is fine as my Indonesian SIM card is not giving me internet access but the hotel wifi does.

2.17 The driver is back and we are on our way to the University of Indonesia at Depok for a lecture on nature conservation in Indonesia.

2.20 suddenly the rains start. The traffic is so congested that we barely move. Knowing it would be like this, we have scheduled 2 hours to make the 22km journey.

2.30 we just passed an anti-corruption rally with a few dozen chanting men leaping and waving flags in front of a large office building guarded by rows of helmeted and shield-wielding riot police. And yet no one seemed to take much notice. Such an event would be shocking national news in Singapore.

2.35 the first two students gave a presentation via the bus PA system on the geography and biodiversity of Indonesia and the Wallace line. I talked a bit more on these subjects and introduced the Victorian naturalist Alfred Russel Wallace and his role in exploring the wildlife of southeast Asia and much more. It being quite warm and after lunch, everyone soon fell asleep.

3.20 we have arrived at the university early! The campus is modern and in a poor state of repair. All the buildings are in the same style, a mock traditional Indonesian (or Sumatran?) with high peaked gables and red 'tile' roofs. After a time, a security guard in khaki takes us into a large central building with portraits of past rectors, a sort of university hall. Inside it is rather plain and bare. Expensive marble covers the smooth walls and the staircase we climb to a large conference room on the first floor. Our contact, Inez, greets us politely.

The air-conditioning is switched on and we seat ourselves along the long conference tables. We are shown a brief propaganda video on the university, praising its ranking as 273rd university in the world, its ambitions to grow to a great centre of learning and so forth. We are in the faculty of science.

A very warm welcome from Alfreda from the international relations office. She is the only one of the five ladies in the room to greet us (there are no men from the university). Unlike the administrators, she does not wear a headscarf. Her black high-heel shoes still have the price

tag stuck on the sole. Some of the office chairs around the long conference table were still covered in plastic and the large clock on the wall still had its price tag on the face. Curious.

Now for the main event. The biologist and conservationist Dr Noviar Andayani gave a lecture about nature conservation in the region. She also wears no headscarf. One positive note sounded during the gloomy story of deforestation and species extinctions, viz. their president had declared a moratorium on the creation of further palm oil plantations. She apologised for the notorious haze or smog from fires in Indonesia that so often choke Singapore to the north. She mused that if the winds would blow it instead over Jakarta, her government would probably do something decisive to stop it.

Afterwards there was an exchange of university gifts. I was given a plaque with the crest and motto of the university of Indonesia and our hosts received NUS key chains. I was amused to see that the Indonesian university employs the same cheat as NUS- claiming the date of its foundation to be that of the oldest institution that had ever preceded it- in this case a Dutch school founded in 1849. NUS makes an equally absurd and false claim, that it is 110 years old. In fact NUS was founded in 1980.

6.10 we set off in our bus back to the hotel as the last light of day fades. The crunching chaotic flow of Indonesian traffic is not to be described or imagined. It must be experienced. And then avoided. I cannot help wondering, how could this be improved? So many people squeezed onto such narrow ribbons of space, it seems inevitable.

7.30 arrived back at hotel. We walked around a bit before finding a nearby street food market with tables. We tried lots of wonderful local dishes including nasi goreng guru, combi nasi, and roti bakar- the latter is bread toasted on a satay grill- while being fanned vigorously. Then the bread is flavoured with margarine or butter, some lined with bananas. I noticed that the hand-made fans used here for fanning satay are quite different from the palm fan used in Singapore. Here they have a bamboo stick to which is tied some brush like material - almost like a flag.

8.40 we are all stuffed and the food was very good and cheap so we are off to bed. This expedition is off to a very good start. (Reminder to self: Take malaria pill.)

Komodo expedition day 2

10 May 2016

6.55 to breakfast. Dire. An almost bare stuffy room with traffic noise seeping up. The fare was almost as dire. No milk for coffee. Plain boiled rice and greasy fried instant noodles. Scrambled eggs and a few pieces of papaya.

9.13 we depart by our bus to Asia Pacific Resources International Holdings Ltd. or 'April Asia' which is a pulp and paper manufacturer which owns many plantations but is believed to operate 'responsibly' and which does not contribute to the haze in the region.

9.33 arrived at the compound along a busy road and security guards guided our driver in to park. We entered the unprepossessing office building through darkly tinted glass doors into what was on the inside a very fine office building, chilled uncomfortably cold by luxurious air-conditioning. We climb marble stairs to the first floor and are led to a well-appointed conference room. Coffee, tea and excellent Indonesian snacks are provided.

9.55-11.00 we hear a presentation by Lucita Jasmin, External affairs director. Her PowerPoint file was titled: 'sustainability.presentation'. Quite.

Only 8% of the national forests under their care are set aside for pulp- so the fuss over it, she says, is quite skewed and disproportionate. 10% should be set aside for conservation according to the government. A curious sort of argument.

So we heard about what a virtuous, conservation-minded company this is, helping local people and preserving wildlife. So everything is rosy.



Lucita Jasmin answering questions after her presentation. this presentation rather a positive experience. I did my best to make them look at it more sceptically.)

11.20 we were certainly well treated. As the event closed we were given goody bags with products made from their lovely pulp and took a group photo. Once outside we walked to lunch at the nearby East Mall. I never saw such a high security shopping centre. First our bags were searched and then we had to walk through a metal detector. For lunch I had Baso Campur, very similar to Singaporean yong tau fu.

12.50 back at the bus and heading for a series of historic sites- once we have paid the price of sitting through the turgid Jakarta traffic that is.

1.20 we stop in a car park behind the building where I think Wallace stayed, in 1861, in a hotel when he visited Batavia, as the city was then called. The Hotel des Indes was like the Raffles Hotel of Batavia, but far grander. Sadly it was demolished in 1972 for the worthwhile end of widening the road and building a car park. Today there is an utterly hideous yet faceless building on the site, housing some chain, Carrefour I think.

We crossed the busy four lane road on an overhead crossing which I thought would bring us to a similar vantage point to the historic photographs of the hotel which faced a canal, now apparently paved over. But from the crossing we found that the canal is still there after all. That was the only trace I could discover of the vanished place where Wallace once stayed. But that was as expected. The film crew often runs ahead to catch us or wire me up to catch some dialogue. 1.40 we walk on. Very hot.



The National Museum and a Hindu statue.

2.05 reached the National Museum which is housed in a beautiful neoclassical building in the Doric style from 1869. It is in excellent condition. This is the most beautiful building I have seen in Jakarta, by far. Inside is an opening hall crammed with wonderful antiquities. Statues,

stelae, and bas reliefs from the Buddhist and later Hindu periods of Java's past. Every artefact had a number in white ink on it, clearly the catalogue numbers applied by the original Dutch curators. The antiquities are not well protected and visitors wantonly touch these centuries-old carvings. This makes me quite angry. The protruding full breasts of many of the Hindu statues were well polished from frequent fondling. I saw one very stupid looking tourist leaning up against an ancient carved stele listening open-mouthed to his Chinese tour guide. I gave him a dirty look and indicated his hand with my eyes. I don't think he understood. At any rate his tour guide then proceeded to roughly stroke the trunk of a stone elephant statue and his charges did the same!

But the museum has even more to offer than this amazing collection of carvings. Gallery after gallery offered treasures of great interest and importance, most from the immediate region hereabouts but others from as far away as Papua and Polynesia.



An exhibition on hominid evolution.

In the new wing next door, an astonishingly good copy of the architecture of the original building, were paleontological exhibits for which Java can be proud- especially the famous early fossil hominid form known as Java man- *Homo erectus*. In another gallery I found a small display dedicated to the newly discovered hobbits (*Homo floresiensis*) from Flores.

3.37 we set off again on foot. 4pm A thin Javanese man crossed the road as the students were waiting to cross in the opposite direction.



The Istiqlal Mosque (Independence Mosque).

We were heading for the Istiqlal Mosque. The man came up to me and spoke in broken English. He works in the tourist office of the national monument nearby he says. He claimed he was going to the mosque and would take us there. I found this strange since I had seen him cross to our side of the road from the mosque side. But to actually speak to a local person rather than wander around in the usual tourist bubble seemed worth the likely tip I would probably be asked for later.

4.17 In fact the old man actually took us into the mosque. We would only have looked at the outside and taken pictures. It is massive- topped with a huge dome- the second-largest mosque in the world. It's brutal architectural style looks very 1930s, and indeed when I looked it up, it turns out to date from 1939. The marble of the floors and walls is from Italy, the stainless

steel ornaments from Germany. He then took us downstairs to see the school and later to a large wooden drum covered in cow hide which he claimed was the largest drum in the world. The use of this in a mosque is apparently a uniquely Javanese tradition. The students later Googled it and found it is nowhere close to the largest drum in the world.

Time was dragging on and our friend wanted to take us to see views on the opposite side of the mosque rather than head directly to the nearby cathedral, which was our next stop. He persisted. I politely refused. I had to do so three times. Very well, he said he would take us there. As he and I walked some distance ahead of the students, the man suggested that a “donation” would be appropriate. I had already made up my mind to give him 100,000 when we parted. But alas I made the mistake of asking him what he thought would be appropriate. 450,000 he said! sheesh. He suggested I make a collection from the students, most of whom had not heard much of his information about the mosque- or indeed any of it- as they often looked around in groups by themselves. I told him I did not think it would be appropriate to ask the students for money, I would pay him.



Our ‘guide’ to the Istiqlal Mosque.



Jakarta cathedral.

So at 5pm I gave him 400,000 plus a 10,000 as I had no 50 note. He instantly handed me back the 10 saying this was not 50! I explained I didn’t have one. Not to worry he said, give me another 100. I did. Any change? Nope! He coolly slipped the 500,000R into his pocket! Kelvin, our Indonesian student, thought this was exorbitant. No doubt it was. But not to have paid him would probably have been far more unpleasant for our day and spoiled the mood and so forth. It seemed better to just pay him and be on our merry way.

To the Catholic cathedral next. It is built in a strange vaguely neo-gothic style. The old man had told me it dated to 1600. This was clearly impossible. It was totally wrong. It had ironwork towers! Surely late 19th century. When I looked it up, it turns out to date from 1860s-1901. Stepping inside I felt instantly transported to Europe, so many familiar elements from pews and altars and so forth. I found no signs giving any information about the place.

5.35 leaving. Exhausted. Feet hurt. Extremely thirsty. As we wait along the busy road I again notice some black VIP cars with black tinted windows and flashing lights heading by. Sometimes they have a motorcycle escort. Despite this they seem to get around no faster than the other traffic in this choking stream of humanity. Jakarta is an extremely inconvenient city to get around as far as I can see. Hot traffic very slow.

5.50 the bus picked us up from the cathedral. 6.13 arrived at hotel. A long day.

Komodo expedition day 3

11 May 2016

7 breakfast. Surprisingly, it’s even worse than yesterday. Everyone comes down with their bags ready to check out. As we are meeting with the Ministry of Forestry today, we have been asked to dress ‘formally’. It amazes me what passes as formal for NUS students. A long-sleeved shirt! Many are not even tucked in. And a few naughty people are wearing, horror of horrors, T-shirts.

8.37 arrived at the ministry. At the last minute the two or three T-shirts were covered by a proper shirt and shirt tails were tucked in.

8.50 we are rather tightly packed into a mirror and wood-panelled conference room. One of the ceiling panels has rotted away and left a big black hole. This room and this building could

not form a greater contrast with the flashy glitz or the 'April Asia' facility. One can see where the money is.

We meet Mr. Cahyo who stands in for the Director General who had to go to Papua. Mr. Cahyo speaks to us in Indonesian. Anthony, one of our Indonesian students, acts as an impromptu interpreter. Understandably the information conveyed comes quite slowly and with little detail. At the end there were a few questions and then the obligatory exchange of gifts with photos and handshakes. I think we gained very little from this but it was worth a try, and an interesting experience in itself.



At the Ministry of Forestry.

10.40 on our way again in our bus and the treacle-like flow of Jakarta traffic.

11.20 we arrived back at the hotel, fetched our bags and were on our way to the airport at 11.30.

12.20 arrived at airport where we had lunch and have rather a long wait ahead of us for our flight to Lombok. All the more so as we were told at the check-in desk that our flight was delayed 45 minutes. So our boarding time was 4.40.

We browsed the Periplus bookshop and tried some fresh cream puffs. Periplus won't carry my fully annotated edition of Wallace's *Malay Archipelago* because they already publish their own edition, which is just another one of countless reprints. Humph.

Several of us were sitting in a cafe talking about the differences between the Lord of the Rings movies and the books when about 3.45 we received a message from others in the group that we needed to rush to our gate, our plane was boarding and they had issued the final call for passengers! We rushed to the security check.

Four of us were still to come through and the ground staff were impatiently demanding the final passengers. I explained that the last four were very close and coming directly. What had happened? Amazingly, the delay had been cancelled! If it had been announced, it was probably only in Bahasa.

4.05 at last we are all safely through and are taken in a bus to the plane out on the tarmac.

As we filed down the aisle towards the back of the plane I noticed that most of the passengers looked quite different to the Javanese. They were darker and had unfamiliar features. Perhaps they are from Lombok. I am the only westerner on board. That and probably my Panama hat from Ede and Ravenscroft, Cambridge, leads to a bit of starrng.

4.21 take off in a quite new Garuda airlines Boeing 737-800.

7pm local time we have landed on Lombok. One hour ahead of Jakarta. It's already dark. I'm so excited to be back- during my 2013 Wallace documentary expedition I was enchanted by this island and its people, their architecture, styles and traditions.

The military-like efficiency of the students in planning this expedition is astonishing. I

can't do it justice here since their organisation is too complicated to explain in detail. For example, now that we are in a new locale, a different student is in charge of the logistics of this leg of the trip. She was in charge of researching and planning this part of the trip. They call this person the 'Day IC' which I am told stands for the person 'in charge'. This doesn't actually make sense of course since 'in charge' is not a noun. (But then there is an ever increasing number of non-words circulating these days. For example, I have seen several times now people referring to an 'emcee' for an event, or using this as a verb: "he will emcee the event." There is no such word. 'MC' is an abbreviation for 'master of ceremonies'. Obviously you cannot say 'he will master of ceremonies the event.' Another one, now passed into official Singaporean use, is the word 'pax' to mean person, i.e. 'the cost is \$5 per pax'. This is a made up word which somehow came out of the airline industry. One now sees it on stickers on the backs of lorries in Singapore for the maximum number of persons allowed in a vehicle. Pax, by the way, is Latin for peace.) Our printed itinerary is a thick booklet. Each day seems to have three or so pages, often with an insert from Google maps showing our route from one destination to another. The hours of each day have been carefully allotted. Contingency plans and transport contact numbers fill the bottoms of the pages. It is magnificent.

8.10 we hear our bus has arrived. As we leave the terminal building we must walk through a huge crowd of local onlookers. They look very poor and many shout asking if I need a taxi or where am I going. As I cross to the pavement two armed soldiers stand up from their lounging. I think to show they are on duty for a foreigner. We walk a short way to a dirty and crumbling car park and pile into a bus. We complete a person count and head off at 8.21. The hotel is 2.7km away.

8.26 we arrive at the hotel: Umax D hotel, Praya. My GPS cycling app 'Strava' on my mobile phone has been on all this time and it says we have travelled 1,127km since Jakarta. In the lobby, while the 'IC' team check us in, Kah Jing gives the students a military style lecture on the need for punctuality etc. for the remainder of the trip. And now we can enjoy the nicest hotel of our expedition.

Komodo expedition day 4



Route of the team on day 4 (part 1). (Strava)

6 dawn on Lombok. The colours in the sky are a breathtaking pallet of pinks and oranges and in the foreground mist rises from the ground. To the left the dark silhouette of the volcano rises. Alas there are power lines and a sign in the way so no chance for a postcard photo. Rice fields about the grounds of the hotel. And by all appearances this company is immensely profitable.

7.30 we have a very fine breakfast at the hotel. The staff are very friendly and ready to smile, as I remember of the people of Lombok.

I have yet to mention the camaraderie and good cheer that reigns amongst the group. Everyone is having such a good time and in such high spirits. This is a superb expedition and everyone is doing their part.

8.15 we depart in the bus. We have a guide named Antrim. He is Sassak, one of the indigenous people of Lombok.

We drove through beautiful rice fields. In between the patch-like fields along the muddy dikes are very narrow trees planted, almost like poles. Turi trees. The young leaves are eaten as a vegetable and the wood is used for fuel. How efficient! Every bit of the land is useful.

I'm delighted to see again the small platforms with thatched roofs that stand in front of so many houses in Lombok. They are called berugaks. These are found nowhere else (actually

there are a few in Bali). The people lounge about on them, chat with friends and so forth. They are usually near the road. I asked the guide about them. He says there are two kinds. The Circumpat is the small one and the Circanum the large one. They are usually made of bamboo. These may last five years or so. Those of hardwood can last 35 years or more.

The roads are crowded with motorcycles as usual but also many pony carts or Chee domo. They are pulled by a single diminutive Lombok pony and roll on rubber car tyres. I rode in some during my last trip here.

Sometimes we pass Hindu temples. But there are very many more mosques. Indeed, just as when I was last here, there is an incredible mosque building boom. I must have seen more than 50 under construction. This is said to be due to rising population. Sometimes we saw young people standing in the road holding bowls or boxes out for donations for their local mosque. The construction is all very local and without any machinery or cranes. The scaffolding is all of bamboo.

About 10% of the people in Lombok are Hindu and 80% Muslim. You might think Islam is the newer religion here but in fact Hinduism was brought by the conquering Balinese invaders. The guide mentioned that a three-year-old buffalo is worth 15 million R. It would cost 42 million to make the pilgrimage to Mecca.

The peasants in the fields wear traditional conical bamboo hats. White herons elegantly strode through the flooded paddies and elsewhere some water buffalo, with their upward curving horns, stuck out their necks. These are the creatures that gave Wallace such trouble so that he had to hide in the bushes if any were coming or they would go berserk at the sight of him. Women walking beside the road carry burdens on their heads and usually wear a red or yellow sarong around the waist.

9.06 after a 28km drive we have arrived at the Hindu temple of Taman Pura Lingsar. The temple dates back to 1714 but almost all that I saw was very much newer.

As the students piled out of the bus I had a look at a number of fighting cocks that a man was moving to the shade, each in its individual bamboo bell cage. This is a scene that has not changed here for hundreds of years. Nearby were two long-tailed macaques tethered as pets. An older male was quite aggressive but a younger one seemed friendly. Still, I didn't risk trying to pet it. They were bound with a cord around the waist so they could not get away. These are the only monkeys I saw here. They look exactly the same as those in Singapore.

We were taken for a tour of the temple or rather temple complex. It looks indistinguishable from a Balinese one. At this one they have areas set aside for Muslims, one for all religions and the rest for Hindus. I don't think they have heard of people with no religion.

The guide went on and on about this- we have harmony between the religions. No doubt he gets positive feedback from western tourists. But this whole place is getting too touristy. Tables of trashy souvenirs are being set up along the footpaths. Nothing could be worse. You are not visiting a real place once that sort of thing starts to take over.

On way out of the temple I met a man with small birds tethered to bamboo perches, white eyes I think. There was an exquisite little bird with delicately curved beak which he held by its legs (possibly a sunbird). 9.58 we are back in the bus and move on.

10.09 we have arrived at another temple complex 6km away, Taman Narmada. This park dates to 1727 and was built by the King of Karangassam (i.e. the Balinese dynasty) as a summer palace. It is vastly larger than the last place but also turned even more touristy.

We are shown one building with a view over the beautiful terraced landscape of the park with many pools. The students are distracted by a zip line that leads over the largest pond. I thought this was a waste of time since one can do that anywhere and here we were in one of the most amazing islands in the world. So I explored around and found a beautiful gurgling river not far away. There were several impromptu fish ponds or enclosures in it made from bamboo. I saw a giant skink but could not get a photo. I also heard an air rifle fire. The local people shoot the birds. I had seen the same thing the last time I was here. It is illegal but one never sees a

policeman.

11.20 we have boarded the bus, having seen very little for such an expenditure of time. Mostly zip wire play. The local people selling strange snacks of fried things and fruits to local tourists were the only things of interest in the temple complex. We drive through landscapes of beautifully green rice paddies.

11.53 I'm in Kopang again. I was here in 2013 tracking down Wallace.

12 we went past a series of large huts where they were making roof tiles from the local clay. Bamboo sheds were piled high with finished ones, others dried in the sun before firing. Several times we saw red brick towers about 4 storeys high with wooden poles sticking out of the walls. These are for tobacco drying.

12.27 we arrived at Green Orry Inn at Tete Batu for lunch. It's a large green building in good repair. It sticks out and is obviously a tourist bubble totally isolated from the local culture. Not my forte. Gah. Yes it is- lunch consists of tomato soup. Ah no, but the rest was actually Indonesian, and quite good. But sadly nothing actually from Lombok. I wish we could have stopped at a roadside stall and tried the foods that local people eat.

We hear repeated loud bangs close at hand and in the distance. It sounds almost like gunfire. It is in fact some sort of gas gun- a noise maker to keep birds from the rice fields. In Bali they use similar tactics to protect their crops.



Trekking through the rice terraces and filming for the documentary.

1.20 setting off for a trek through the rice fields with another local guide. Our dear students now reveal how urban and sheltered they are – seeing so little of the treasure trove of natural wonders all around us. So many amazing plants and animals and local structures and shrines. One mentioned in my hearing that these plants appeared to be growing “rice husk” without the rice! Another said “what is that sound?” Only to realize, “oh that is a dog [barking]”.

2.04 we entered a forested area above the rice fields, but terraced rice cultivation continued here and there interspersed between houses or stalls for the lovely fawn-coloured Bali cattle. 2.42 paused at a place where we were shown locally grown spices chilli, vanilla, nutmeg, clove etc. And we had the opportunity to buy some. Gah. More tourist baiting.

As we walk right past these farms and houses the local people are all smiles and say hello in English, though knowing no more. These bizarre and awkward foreign visitors are still novelty enough to come out and watch. If I waved and smiled they would always do the same in return. Sometimes their barking dogs can be quite annoying. Everywhere are hens and their chicks running about at liberty.

3.20 arrived back at bus. Our bus guide discretely handed the field guide some notes. His payment. 3.35 all on board, we head back to our hotel. It's going to be a long winding way. The group is soon fast a sleep. I hear there are problems with the next hotel. They have not booked the number of rooms they should have. The team gets further accommodation nearby.

4.45 we return to the hotel.

5.20 we depart in seven different cars with drivers for our next accommodation in the

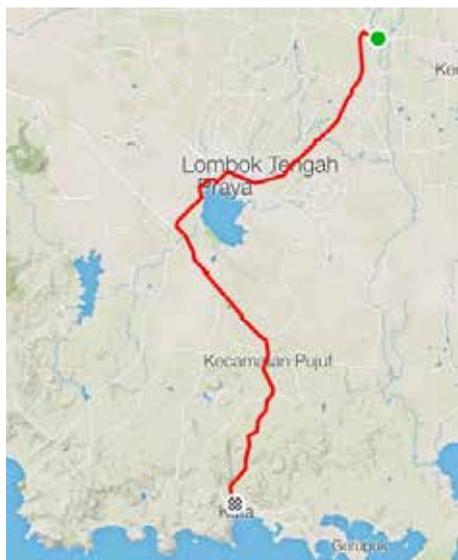
south, at Kuta.

5.44 we arrive at Yuli's Homestay, in an impoverished looking village. We have another of these debriefings about the day's activities, and then a briefing about tomorrow with instructions etc. Nine of us are driven down the road to Krishna's Homestay. Arrive 6.10. It is quite awful, not at all like the first place. Alas I have been allocated to this place.

6.30 I at least get one of the two rooms with air-conditioning. Gasp horror! My unit is broken. I have never been so hot during this trip. The room is a baking with no breeze and no fan. At last after copious sweating, the owner changes the batteries in the control and it works. I would have been happy with a fan. But neither is right out.

6.50 walk to dinner in the village with some of the students.

Yuk! This place is horrible! It is full of western tourists and all the shops and restaurants and bars cater to them. All around I see tattooed, sunburned westerners



Route of the team on day 4 (part 2). (Strava)

drinking beer at touristy street side restaurants. Horrible. This is not Lombok. It's the same trashy ruin tourists have made at Bali and a thousand other places. People hawking trinkets while you eat. etc.

Went back to the homestay. I was about to start washing my clothes as I am almost out of fresh ones and there is no laundry facility here. There is also no soap or usual amenities. But aha! One of the students saw that there is a laundry service down the road. A man in sarong and peci weighed my laundry on a scale on a plank that served as his counter. 10,000 per kilo. Ready tomorrow night.

I walk some of the ladies back there for their laundry, buy some water at a convenience shop and back to the homestay. Another long day- but a day to be remembered. And tomorrow there will be even more wonders to behold!

Komodo expedition day 5

13 May 2016

6 up. Found a blood swollen mosquito on the wall next to my bed. Squashed it. Was that my red blood?

7 breakfast. Menu is one page. Eggs or ... eggs! Quite nice actually. The pretty petite Sassak lady working at the Homestay cooks for us as well as acting as receptionist. The Sassak women are beautiful. Their Javanese neighbours cannot compare.

7.30 start a bit delayed but by 7.38 we are in vans at the other Homestay to fetch the others before heading to the local fish market.

7.50 OK after several little delays we are heading for the market. We drive through what looks like forest but it is actually very carefully managed land. Our Sassak driver tells me that one stand of bamboo, when harvested is worth 25,000R. Also mahogany and Turi trees are grown. The flowers of the latter are used for flavouring gado gado, the leaves are eaten as a vegetable. Very good for lactating mothers he says!

We have reached quite a rural and unvisited area. Many local men wear a straw hat of a strange shape. Upturned brim and slightly pointed.

8.26 we are reversing a long way as the motorcycles squeeze by. The other van has a puncture and our driver wants to help his comrade.

We pile out of the vans and stand about on this rural country lane with trees and small houses all around. I saw some chicks in a bamboo cage and thought I should show these to some of the students who might not know chickens well. A young woman was standing in front with a child on her hip. She was watching all the commotion of these strange foreigners suddenly

standing in the road in front of her house. I gestured towards the chickens. The lady opened her bamboo gate and smiled warmly, welcoming me in.

Her name was Padmin. She is 25 and very friendly. She spoke some English. In front of her house, lounging on a bamboo platform, were some other ladies. They smiled as I said *selamat pagi*, but they knew no English so shyly watched us. They were neighbours. Padmin had one son, about 2. She and her husband lived in a tiny roughly made unplastered breeze block house which was a shop in front where they sold mobile phone accessories. Her husband also repairs motorcycles. There could not have been more than one room the size of a modest western bathroom behind the shop.

Beside the house was a bamboo shed where she raises poultry for sale. There were about a dozen week-old chicks and other hens were sitting on ten and twelve eggs in cardboard boxes. Nearby another hen was having a dust bath. Padmin said this one had only laid one egg this week. 'Very bad' she said. I joked that she should kill and eat it then. She laughed and agreed, yes this one was not a good layer. They apparently sell the chickens rather than raising them for food.

Behind her house was a brick well, the water was right near ground level. The water was for cooking and washing she told me. Drinking water had to be bought. Next door



Our roadside friend, Padmin.

was a larger and finer house, plastered and painted a bright green. This was her brother's house. Some member of that family had worked as a cleaner in Saudi Arabia and so made the money to build this nice house. I asked if people shoot birds. No, no, she said quickly. Of course it is illegal.

This delightful conversation with a beaming Padmin was a highlight of the expedition for me. At last we got to meet and understand to a very small extent some real people of Lombok. And they are as warm, friendly and charming as I remember.

9.06 tyre changed, we drove on. Since it has become late due to repairing the van, we are heading to the boat for snorkelling instead of to the fish market.

9.40 we have arrived at the seaside and local harbour. Many boats of different shapes and sizes line the beach or are moored just offshore. Almost all have two outriggers.

9.50 I spoke to a man who was sitting on one of two long boats being kitted out. He spoke some English. I asked if his boat was for fishing. No, he said, for tourists. He is a former fisherman turned tourism entrepreneur. He bought these fibreglass boats from Java. The men present were busy adding a deck, seats and roof etc. with mahogany and other woods. The wood was from Borneo. They make the outriggers themselves too. Only the narrow hull is fibreglass. Some work was done by hand, but they also had an electric plane. These two new boats brought his little flotilla to three. He was probably converted from fishing by the conservation organisation 'Dorsal effect', which we had engaged to take is out today.



Padmin's poultry house.



Some of the boats on the beach at Tanjung Luar.



Our team is taken snorkelling.

10.10 I boarded one of these narrow boats. One of four for our group. Then there is a long and beautiful ride across the bay. The sun is shining, the sea is a deep blue and craggy shores and islets frame the scene. The vegetation on shore looks very scrubby and dry- indeed Australian. We are on the other side of the Wallace line now.

11.03 we finally arrived at our snorkelling destination. The homemade re-bar anchor is thrown in. Of course snorkelling in the tropics is a dream. There were many species of fish and coral but it was not exceptional. I rather wondered why they brought us all this way for a spot that was not very special.

Then came one highlight for me. I was quite far from the group when I swam up to and almost touched what I thought was a thin piece of seaweed. But it was striped! My eyes popped above water and there was the head of a sea snake taking a breath! I let out a yell into my snorkel and swallowed some seawater. I remembered something about some sea snakes being the most venomous in the world and was rather scared. The snake then dove down and swam with elegant curves if it's body. I swam after it and took several photos. It then stuck it's head and almost all of its body under some anemones and remained motionless for a long time. I waited hoping to film it swimming. But it stayed put.

12.18 we stopped at a nearby beach for lunch. The students broke out the college drone

to make some films. I decided to explore a bit of the interior since the vegetation here was very unlike what we had seen so far. The grasses, shrubs and trees were all new to me. I startled what looked like a small grouse. Then I found some weaver bird nests on the ground. These are delicately woven from grass and have a downward pointing entrance tube, clearly to prevent thieves from entering the nest. 1.18 on our way again.

1.28 arrived at another beach. From here we climb a dusty hill to see the view. The students take more group photos and fly the drone again. Here I saw three monkeys that are actually wild. At the beach were many huts and shops.



Route of the team to Tanjung Luar.
(Strava)

One had a bamboo cage hanging with a rare native bird, a Friarbird. On the ground a hen and her adorable little fluffy chicks are standing. I caught one of the chicks and let Ashley hold it. I put down my GPS device to do this and almost forgot it.

2.25 on our way to a second snorkelling location though rain clouds are approaching fast. 2.40 rain!

2.49 it stopped. Snorkelling again. This spot was a little better but the visibility was still not good, the corals

not very diverse but there were more fish. Kathy from Dorsal Effect told me she was going to look for sharks on the other side of the islet we were next to. She knew sharks would be there. My fins had worn the tops of my toes raw so I had to follow without fins, hence slowly. But here came a second and greater thrill! As I paddled about alone a huge Black-tipped reef shark swam by me! It was quite close. Later I saw two more, they were as long as me and very interesting to see in real life. I saw one more before it was time to return to our boat. I think I was the only one in the group to see a snake or shark, just some of the hundred other wonderful creatures I photographed today. As on other occasions, the students spend much of their time talking and clowning around and not looking at where they are and what lies before them. I try to encourage them to see more. 4.22 we set off again.

4.51 we arrived at a place the driver calls sunken island. It's just an exposed sand bar. More photo silliness follows. But we do find a crab and a sand dollar.

5.30 we clamber back into our boats and head back.

5.50 we return to the harbour, Tanjung Luar where we started out this morning. The waterfront and the area above it are utterly squalid and full of rubbish. Local people sit about smoking and watching us. 6.01 we are back in our vans and driving back to Kuta.

6.10ish We are driving by one of the many mosques and the call to prayer is echoing from the loudspeakers.

Our driver pulled over and stopped. Without saying a word he got out and walked back. I assumed to talk to the other driver. He came back and knocked on my window and asked if we could pause 5 minutes so he could pray in the mosque as it was Friday. I said of course.

6.27 the driver is back and we continue. The drive is so long I have time to revise this entry on my phone. 7.34 back at our Homestay. The mosque loudspeakers call to prayer. Next up dinner and or review of what we learned today. What did we learn?

Komodo expedition day 6

Crossing the Wallace Line

14 May 2016

4.50 downstairs to breakfast area. No one here. But a bit of wifi time however to upload photos from yesterday. It's still dark. No breakfast.



The day's catch of sharks at the market.

5.05 the same van as yesterday arrives. We are heading to the fish market which we missed yesterday. Despite the bouncing and jarring of the very bad roads, I work on my article for *New Scientist* on my laptop.

6.11 we arrive at the fish market at Tanjung Luar. There are thousands of people here. The squalor and filth and rubbish is hard to describe. It's almost like a rubbish tip with people living on top and a sewer running through it. In some places the stench of the gutter is thick and unbreathable.

Everywhere people are busy carrying baskets of fish in their arms or women carry them or buckets of ice or water on their heads. Groups of women huddled around baskets of small shiny fish on the ground are shouting and quarrelling, I presume they are bargaining.

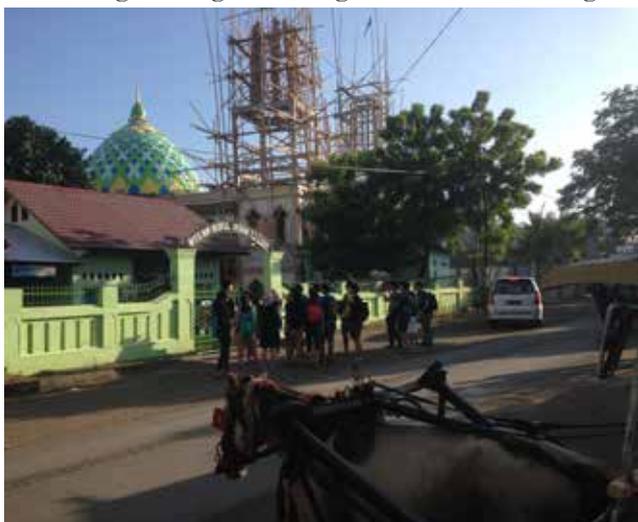
Walking to the waterfront one sees many brightly painted fishing boats of different sizes. I notice interesting dugout canoes with one outrigger. These have been in use here for centuries. They have an interesting upturned prow and stern with a flat top.

Right now two large fishing proas are unloading their catch of sharks. They haul one out of the hold and then push its bulky corpse overboard. I couldn't imagine why. Then I saw that men were wading out to pull the dead sharks through the water from the boat to a ramp where the sharks were struck with large hooks attached to ropes. The ropes were looped over a long bamboo pole and then two men would haul the shark, its weight making the bamboo sag, to the market. There are also a few gigantic manta rays, their huge wings already chopped off to make them manageable.

The sharks are laid out in an open pavilion with a tiled floor. Eventually there are c. 40 sharks brought in. They are measured and a man with a clipboard notes things down, the fins in particular are measured. The sharks are caught on baited lines left for some time in the water. That's why some sharks looked pretty out of shape on the slab. One shark was pregnant and a man pulls out the dead baby sharks with his hand, four or five in total.

The Dorsal Effect ladies stand around with disapproving and outraged expressions. In fact when one considers the true scale of the fishing industry in Indonesia, the thousands of harbours each with its fleet of boats and an army of crewmen, how could they ever take up tourism instead? It's impossible and would be unsustainable and utterly destroy the place as a result even if it was. Converting six or a dozen fishermen, or even 100 will not save a single shark. Reflecting on the scale of all this and the realities of human life in this place makes me

think nothing but high level legislation could change any of this.



The school.

7.24 we walk to a local primary school where we are expected. The children wear beige and brown uniforms. Hundreds of them crowd around us shouting laughing and just staring in amazement. We are exotic objects for laughing, giggling smiling and excitedly teasing one another about. When I make eye contact and smile they blush and run away or hide behind an older pupil. A few can say 'what's your name?'

I show them their faces with my phone. They scream and run away laughing.



Some of the friendly students.

They are extremely excited by our visit. I'm sorry I can't speak to them in their language and even more sad to leave them so soon.

7.38 we walk to a nearby secondary school where Dorsal Effect attempt to teach the children that killing sharks is not ok. Considering that they are growing up in a fishing village, I suspect this will not be enough.

The students at this school wear the same brown uniforms but here the girls wear headscarves and the boys wear the pici. As I walk through the front courtyard hundreds of excited voices and giggles fill the air. Girls swarm about asking for a photo; the din of excited shouting is incredible. What an extraordinary experience to be objects of such rare fascination and delight. A smile or wave or a wink would send one of them running around in circles with mixed shyness and laughter.

I walk to a classroom which is virtually empty, just furnished with a few wooden desks and chairs. All locally made. Here girls ask to take photos with me and scream and giggle when shown them. The Dorsal Effect ladies put up some of their shark posters under the entry arch with the headmaster who knows a very few words of English.

Alas we have to leave the school. I say goodbye and wave and a chorus of goodbyes is shouted back in return. Wonderful people the Sassaks.

9 back at Homestay. Quickly packed up my things. As I cut down the mosquito net with my nail clippers (my only cutting tool) I saw a large bed bug or tick crawling on my pillow. Ugh! I had tucked in my net between the mattress and head board so maybe the little beast couldn't get to me. 9.20 we depart in a new large bus for Lembar harbour.



The local ferry at Lembar Harbour.



The only cabin inside the ferry.

Some possibly fishy things are afoot. The guide who accompanies the bus is offering to get us a special service if we will pay him a certain amount extra per person. We believe it will be used to pay a bribe at the harbour to expedite our arrival and transfer to the ferry to Bali. (In the end it seems this was done, but to no purpose- we just boarded the ship the same as everyone else!)

10.40 reached Lembar harbour. Reached! Look at me, spending so much time with Singaporeans is affecting my English. "Reaching soon..."

Once we alight from the bus local men rush up to sell food and snacks for the passage. A local man answers some questions I ask. Lembar is now the name of this harbour, it was formerly Labuan Tereng, bamboo harbour. This was the name when Wallace was here. And he stayed right here. And it was here that he first formulated the idea of the Wallace line. We cross paths with Wallace three times on this expedition. At Kopang and Lembar in Lombok and when we cross the Wallace line at sea.

As we wait for the ferry the students are again ensconced in their protective bubble, huddled together in a group, facing inwards, and not engaging with the locals or looking around. It's as if the pioneers have circled their wagons in defence against the natives.

But there are fascinating local foods for sale right next to us by a row of people sitting on the ground at the back of the dirty terminal building overlooking the harbour. I buy several things, they only cost a dollar! Nasi Campoor wrapped in leaves turned out to be too spicy for me. Kloopook fried cow skin. Yummy! Reminds me of pork scratchings at home only not as salty and artificially flavoured. Tempe is fried Soya bean crackers. Very good! Tauge is from oto oto. Whatever that is. A small yellow mass of shredded and fried veg. Also good. I tried a strange small pink banana. Texture rather firm. Does not taste or smell like banana. Plantain?

On the ceiling of the awning above us we see two paper wasp nests crawling with little red wasps with yellow spots. They ignore us. Nearby a gecko looks on.

'Sudah ada'. Already have. A very useful phrase when these hawkers are pushy. Tidak, no, is also useful. Usually I will have a whole group of them accosting me, as a conspicuous westerner, and the rest of the group is little troubled. 'Mister mister, you buy. Very good!'

The ferry across to Bali is mostly used by local people and with no concessions for foreigners. Hence fascinating to see!

11.45 we walked down the quay to the ferry with its rusty bow yawning open to accept lorries and passengers. Inside I climbed various stairs with my bag. There is one cabin in the centre of the ship with air-conditioning. This cabin is very curious. The room has no chairs or tables. There are three sections of floor divided lengthwise by two aisles. These three seating areas are raised a few inches and covered with a slightly padded lino. Everyone who sits on them first removes their shoes and leaves these in the aisle. There are perhaps a hundred people in here, almost all locals, and a dozen men try selling more snacks and particularly instant noodles for which they carry large flasks of hot water. This stuff the students eagerly buy and eat. It's familiar.

12.15 departed. The ferry moves so steadily, the water is so calm and all the curtains in the room are drawn so that we cannot tell we are under way. Nice conversations about mind/materialism and many other topics with some of the students.

1.27 Air-conditioning broke. It becomes stifling inside though most people are asleep. Many of us go up on deck where it's cooler with a breeze and the view of Lombok slipping away is mesmerising.

2.04 I saw a dolphin! It was leaping through the deep blue water and went under the ship off the port side. I could not find it on the other side.

2.24 we are right now on the Wallace line! We cross from the Australian back to the Asian zone. Several of us took a group photo at the stern.



* Right on the Wallace Line.

3.56 as we approach Bali the sea is full of rubbish like plastic bags.

4.30 we landed on the enchanted isle of Bali. Pretty filthy from this entry point though. Rubbish absolutely everywhere. You won't see this at the polished touristy airport. U.K. Health and safety would have a fit with the way passengers walked out alongside lorries and motorcycles. But all went smoothly. I thought I would sweat to death waiting on the unventilated and stuffy stairs inside the ship. Argh since we took an earlier ferry we have to wait for our bus.

From the moment you step ashore the unique features of Bali are visible. The Balinese architecture with ceremonial split gates, the small palm offerings on the ground near the sea, the ornately carved stone shrines and ornaments in front of nearly every house and shop. I don't know of any people more active and devoted to such traditions - with tokens of their beliefs so numerous and at the same time so attractive.

Waiting at the harbour. The Balinese outriggers look different from those at Lombok. The cross beams which hold the outriggers here curve upward into a bell shape and then down whereas the Lombok ones are straight. One sees the same narrow wooden stands with a roof on the roadside with bottles of petrol for sale. Often a piece of wood is used for a cork.

5.15 the bus has finally arrived.

5.24 we are all on board and the bus departs. Kah Jing sticks a GoPro camera to the inside of the windscreen to film the journey for the documentary.

We drive along the southern coast. It's striking how much more affluent Bali is than Lombok. The roads are excellent here. But then Bali always has been wealthier than Lombok. For one thing it's wetter, and produces several rice crops per year. It had princes, kings and armies. It was Bali that conquered Lombok in the 18th century not the other way around. Now of course there are also billions of tourist dollars flowing into Bali too. Just driving through it's obvious why. Bali is breathtakingly beautiful.

Entering Ubud. Yuk. Every shop on both sides of the road is for tourists. This isn't Bali it's a phantom zone.

7.10 We've arrived at our hotel in Ubud, Nuriyani. Wow! It's very nice, lots of lovely

Balinese decoration. There is a gigantic cicak gecko on the wall, ten times bigger than what one sees in Singapore. Tomorrow: exploring Bali by bike.

Komodo expedition day 7

Cycling through paradise

15 May 2016



Route from Lombok, across the Wallace Line, to Bali. (Strava)

6.10 up. Finally quiet outside the hotel and one can actually hear birds singing. Last night the sound of bars blaring loud music was an unwelcome change from the timeless call to prayer from the mosques on Lombok.

7.25 the group meets downstairs. Yikes it's raining! Bodes ill for a day of cycling.

7.52 we depart in two vans operated by Bali Eco cycling. They will drive us to Penelokan overlooking the volcano Mount

Batur for breakfast and then cycling.

We drive up into the mountains past breathtaking stepped rice terraces. Every house in Bali could be mistaken for an elaborate temple. One could never grow tired of watching these Balinese visions go past the window.

8.55 we arrive at a restaurant called The Lookout at Kintamani on the rim of a vast volcanic crater. The other side must be miles away. In the centre rises the volcano Mt. Batur. One side is scared by a black lava flow from the last eruption in 1999. Nestled serenely below is the largest lake in Bali. Clouds encircle the rim on the other side and the peak of Batur. The view is simply mesmerising.



Bali cycling tour and a large spider found on the side of the road.

We receive an excellent introduction to the scene and the area by Wayan and Dewi our guides. We then enjoy a delicious buffet breakfast on the terrace overlooking this incredible view.

9.45 oh no, it's started to rain again. We retreat into the restaurant. We have our sharing session, this time two students tell us about the history of Bali. On our way out we saw a short performance of Rindik by two old men playing bamboo xylophones. Delightful music.

10.15 back in the vans we head off. Rain has stopped.

10.30 arrived at Oka Agriculture, an eco tourist destination. Under a platform very much like a berugak there is another bamboo xylophone. The rounded ends of the sticks used to strike the bamboo are rings of rubber cut from old car tyres.

We are shown a garden where they grow cocoa. We are invited to taste the fruit. It tastes nothing like chocolate. We are shown leaves from a cinnamon tree. Once crushed the leaves give off the pleasant aroma of cinnamon. Why do these trees produce this substance? Is it a chemical defence against insects? Similarly we are given ginger leaves to smell.

Around the corner are two large cages containing civet cats! They are incredibly cute with their little snouts and rounded paws. They are released to the wild after a short spell in captivity. These produce the famous kopi luwak. (Luwak is the name for the civet cats.) The civets eat the coffee berries and the beans in their droppings are collected and made into coffee, the most expensive in the world. I can't really tell the difference.

Next we see a small box hanging from a tree at head height which contains the nest of some tiny stingless bees. Nearby is a man roasting coffee beans over a fire from bamboo wood.

Then we are taken to taste 8 hot drinks in tiny glass sample cups. Coffee ginseng, ginger tea, Bali coffee, lemon grass tea, pure Bali cocoa, rosella tea, coconut coffee and juice: kulit manggis (mangosteen). Then we are encouraged to buy packets of these products. I don't think anyone bought any. Gah.

Oh then we buy a lovely creamy durian and lastly they show us local tobacco with sugar cane rolling papers. The guide drops a very amusing quote as he is filmed smoking for the documentary "smoking is good." Deliciously politically incorrect.

11.50 we are back in the vans and continue onwards. This stop was pleasant and interesting for everyone and we all had a good time.

11.54 we have already arrived in a dirty car park where the bikes are lined up for us. They are the cheapest sort of mountain bike, such as you can rent at Pulau Ubin. But they will do just fine for our road journey.

12.15 we set off. There are very frequent stops so that everyone can catch up. A guide leads us as we coast mostly downhill. At one of these stops we spot a vast spider web with about 20 of the biggest and fattest spiders we have ever seen. The guide is amused by our interest and grabs one. They don't bite! Some of the students let the little monster crawl over their hands and arms. Very brave!



The house compound seen from across the road.



One of the buildings inside the house compound.



The grandmother at work.



The family's Bali cattle.

12.38 Our next stop is at a typical rural Balinese house. House is the wrong word. The Balinese traditionally live in walled compounds, entered via a split gate like the temples. Inside are several small buildings, some houses, the family temple, a kitchen and various outbuildings. They are bamboo farmers. When they harvest the stalks they split them longitudinally into three layers. Each has different uses. Some are made into the wonderful plaited screens that cover walls and ceilings.

Around the courtyard a proud clucking hen and her chicks roam- somewhat harassed by me and some of the students as we hoped to catch a chick. The family has three bamboo bird cages with two species of song bird. An old lady sits on the verandah of one of the houses next to a large pile of branches with bright green betel leaves. I am invited to try chewing one. It tingles and is quite bitter. Behind the buildings are the livestock There is a shed with four of the sweet Bali cattle. These are raised for two years on plant products from their land, especially chopped banana tree trunk and material from the rice fields and then sold. They also have two pigs in a small, square, cement enclosure.

They are raised for six months to be sold. They are also fed on materials to hand, which costs nothing, with a bit of additional purchased feed. These were very cute and I spent a lot of time talking to them and petting them. They were very good-tempered and were delighted with the attention. Ducks are fed on the rice husks in the fields. There is great efficiency, little waste and infinite sustainability in the Balinese agricultural system.



After the others had walked back outside the old lady came over to me and for the first time spoke one English word in a hushed tone, “money”. This is one of the things tourism does. They were of course already paid by the eco cycling company to allow us to visit them.

1.13 we ride on.

1.28 stop again. This time in the rice fields to see how they harvest rice. This was very interesting for me since I have often seen people in the fields here hard at work, but knew so little of what was involved. From our guide we learned that these were not farmer-owners in their fields, but gangs of workers (not individuals) paid for their labour in sacks of rice by the owner of the land. The workers get one sack to the owner’s six. First a group cuts the rice and another threshes it- beating the cut stalks to remove the rice. Then another group winnows it by twirling it in shallow woven bamboo trays. While swirling it the bits of leaves and stalks which are less dense than the rice, rise to the top and are quickly picked out and thrown aside- but over a special bag where any loose rice grains can still be gathered later. Then they toss the tray to send it up in the air a bit and more light pieces are blown away by the wind. Lastly they drop it all into a bucket, but from high up so that any remaining light fragments will be blown away. The sacks reach 40kg and are then tied off. The women labourers carry these 40kg sacks home on their heads! Often 2km away. We try it and can barely hold them for a short time. Don’t mess with Balinese women!

After c. 9 crops of rice the land is refreshed by growing something other than rice for a season. There is one stone shrine, here along the road, to the goddess near each family plot of land. The intricate grass and stick offerings I have often seen in the fields are an offering to Sri for a good harvest. In the fields a bird of a type I do not know sung beautifully nearby and a fascinating beetle with yellow markings scrambled through the stubble. We cycle on. Always downhill. We have only come 9.6km so far.

2.05 stopped at a village temple with a gigantic banyan tree near the front, said to be 500 years old. These are sacred trees in Bali if they grow near a temple. They use the leaves in offerings. I am given a Balinese banana. Told it’s green but sweet. It tastes like any other banana to me.

2.30 set off in two groups. One goes a long way downhill and another takes a more challenging uphill route. We pedal on through smiling rice fields with birds and pens of the

strikingly upright Bali ducks. Temples and shrines are everywhere, and all gorgeous. This is surely the most beautiful place I have ever ridden. I tell the guide that we foreigners find their country very beautiful. Do the Balinese? 'Yes', he laughs.

At one point along the road I saw a young man with a pump air rifle shooting into the trees while his friends laughed and watched. I assumed he was shooting birds (illegally) which the guide said were made into satay. One of the students was later told that people bought permits to allow them to hunt squirrels.



Drying rice on the roads.

At another stop in a small village ladies are drying rice on large blue tarpaulins spread all the way across the village road. I go over to look more closely and smile at them and they smile back. I wonder what this does to traffic. I soon find out. A motorcycle comes along, as so often here, and just rides right over it. Our guide soon follows on his bike and we do the same. I later learned that the guide was actually from this village. Everywhere we go people wave and smile and shout hello to us as we go by. Is there a friendlier place on earth? Here we are far from the ugly tourist infestations. These people never interact with them and so seek nothing. They are just friendly. This shows that not all of Bali has been spoiled by the cancer of tourism.

3.38 uphill group finished. I thought we had to wait for the others so I cycled on a bit along a dirt track into a wooded area bordered by rice fields. I rode through a small cemetery with tiny grave stones.

After five years in the ground, bodies are exhumed and the bones are burned. The path was almost totally covered in rubbish, plastic and so forth. To the right was a severe steep ravine, so deep I could not see the bottom. After a minute or two I went back and we were driven to lunch.

3.57 we arrive at the restaurant, Suryah Ramah Makan, with a captivating view over a small valley with luxurious green trees and rice fields. The food is very good, especially after a ride. Kah Jing suggests we conduct our nightly reflections on what we have seen and learned. I do some of the talking and then several students add their own thoughts. The documentary team films and records. We have become a well oiled machine by now. And spirits remain high, camaraderie is superb. Long may it continue.

5.49 we have boarded our vans again and head back to the hotel. Singing and joking continue. What an excellent expedition- and excellent people.

6.16 arrived back at the hotel. A long but wonderful day. If only we could do it all over again.

Komodo expedition day 8

16 May 2016

7.30 we gather downstairs for an excellent breakfast. Behind the hotel are rice paddies. A pair of Javan munias and a white breasted water hen stalk the fields.

8.07 we set off in a bus for the other side of the island. This will be a long and winding journey. 10.14 argh I forgot to start my GPS device.

10.20 as the bus snakes its way through mountain roads, we decided to stop for a toilet break. I got out to stretch my legs. But this was not a restaurant or shop, it was just the house

and outbuildings of a poor family! Kelvin, an Indonesian student, assured me that we had asked their permission to use the toilet and that it was quite normal for Indonesians to do this. One of their dogs barked nervously and a tiny but very proud little rooster strutted his stuff on the packed earth of the front garden.

In fact the small house was occupied by two related families, with several children. They were all smiles and quite relaxed with strangers looking about their home. Under a covered area attached to the house they had a fancy breed of dog in a cage and two caged birds, a Black-naped oriole and a rusty red-breasted bird that reminds me of a robin I have seen at other houses. It sings beautifully. I turned on my phone's front camera so that it could see itself. It hunched forward and opened its beak to ward off this sudden invader. We learned that the family had captured the birds when young at nearby plantations. Valuable ones are sold. It's amazing, every house we have visited has had one or more caged songbirds. The numbers held across Bali must be astronomical. No wonder ones sees so few birds in the wild.

Behind the house was a raised shed with goats and more chickens roamed about. Just before we left, I caught the little rooster, who was not very bothered, and showed the cameras how one can move the body back and forth and side to side while the bird's head will remain absolutely motionless- an ability of greater utility to their flying relatives. And it looks quite funny. With smiles and waves we say goodbye to this friendly family and board the bus and head on our way.

12.26 the hillsides around us are now clothed with a different vegetation - less green and lush and more scrubby and sparse. We round a corner and suddenly we are on the coast with a beach next to the road. We drive by the monkey temple that I visited in 2013.

12.40 we have arrived at a small budget resort called Suka Sari, in a town called Pemuteran. Half of us stay at another resort down the road. The Balinese make even modest places like this look very nice and the rooms are pleasant. Outdoor bathrooms behind each room.

1.06 we walk to lunch at a restaurant nearby, Frangipani. I ordered Pesan Be Pasih, traditional Balinese fish grilled in banana leaf served with Balinese vegetables. When finally served at 2.05, it was incredibly good! The fish was like ota, a fish paste but mixed together with pieces of whole fish.

It looks like rain. Not good. We are planning to trek through the Bali Barat national park to see and photograph wildlife. While we waited for our food I wandered around outside and into the courtyard of a nearby house. There was an amazing bird caged there, a Black-winged starling. It's singing was exquisite. Nearby was another bird, bright green with a black throat with a bit of blue in the centre, a greater green leafbird, I think.

2.36 we are leaving just as it starts to rain. We re-board the bus. During the drive to the national park we have another sharing session by students, this one on Bali wildlife. There was once a species of tiger here, the smallest in the world. Sadly it went extinct in the 1930s- the usual reasons of course- habitat loss and poaching.

We hear that our next hostel has a new owner and all the rooms have been changed to 6 bed dormitories. So another unexpected problem for our efficient and capable student team to solve. I am sure they will. And the rain has stopped and sun has come out. Perfect.

3.26 we arrive at Bali Barat.

3.35 Some negotiations proceed in Indonesian about the compulsory guide, permits and, of course, the fees. They are now saying we must take a car and pay 80 Singapore dollars for it! We have come all this way so we will just have to pay it.

While we waited one of the rangers said 'come with me, I can show you the Bali myna.' This is the crowning jewel we have come here to see so many of us eagerly follow him. On our way the guide points out a green bird up in the trees, it is a Lineated Barbet. Wonderful! It has a bright green back, broad yellow bill and mottled breast.



Bird watching at Bali Barat.

After a short walk we come to a large outdoor cage or pen. Inside two crow-sized white birds are hopping from perch to perch. Even more exciting, there are two, no four birds flying free in the trees around. They are quite tame so we are able to get very close to them. The Bali myna is almost all white with a striking blue patch of skin around the eye. The tip of the tail and wingtips are black. The Bali myna is extremely rare in the wild. The estimates of numbers present here at Bali Barat vary- I heard some as low as 15 and one as high as 100. Almost all of them are however captive bred birds that have been released into the wild. There is one reason for this scarcity: humans. The birds are captured for keeping in cages at home. Thousands of these birds live in zoos and captivity around the world. It's obvious why they are so highly valued, it is a stunning bird. But alas, their future in their native environment looks next to hopeless.

4.15 we are split into two groups because the transportation can not take any more than 13. One group will go in search of land animals and the other after birds. I am in the animal group. We cram ourselves into a van we were obliged to hire. It's a private van with the owner driving and a guide from the park. We cannot understand when they speak Balinese but from their gestures the guide is remarking on the clearance needed for the track into the national park. It's incredibly hot and stuffy in the van and 13 of us are packed in here.

4.28 we turn off the main road and onto a once paved but now ruinous track which is more potholes than road. So we are making extremely slow progress and are jostled back and forth continuously. The potholes are full of water from the recent rain. We drive by a Muslim farm with Bali cattle. Macaques abound here along the road.

4.42 we just turned left into the park itself when a massive bird took off from the road with a few powerful flaps. It was a Crested serpent eagle!

4.50 The guide pointed out black monkeys in the trees! We get out and walk along the road to see a group of Ebony leaf monkeys high in the trees. These are huge monkeys with a frill of fur around the face and exceptionally long tails. They are disturbed by our presence and begin

to move off. They cross one large gap between trees by making a huge leap- and they also fell many feet before hitting their landing spot on a lower tree with a crash. The branches bounced up and down under their considerable weight. They then climbed up and away and out of sight. With my binoculars I had excellent views of them. Two were large females with young ones clinging to their bellies. The guide says there are only 400 of these. We have just seen about eight, so we are very lucky.

A short time later we saw some more feeding in trees further off. They are canopy feeders. Right below them, on the ground, were the familiar long-tailed macaques. Two species of monkey, living in the same forest, but in different niches.

5.31 a large monitor lizard slowly crossed the road with its languid gait.

5.33 a deer spotted! from van window. We stopped and peered into the dark forest to our right. Then a massive leaping deer flashed through a gap in the trees and everyone in the van shouted almost with one voice something like 'wow' at this sudden sight of so large an animal.

5.57 this awful drive finally over. The driver went far too slow. We stop on the dirt track right near the beach. A dirt lane heads right into the forest. I walk quietly into a very open area under a dark canopy. It reminded me of the woody area of this park where I stayed three years ago when I saw several deer. I was so tuned to see one, I could almost see a silhouette every time I scanned right or left.

It's all very quiet except for some of the students who keep talking and I have to shush them several times. Such urbanites. They even walk noisily, crunch crunch. There is a low muddy watering hole under the trees. The guide says animals often come here to drink.

The guide and I reach a small Balinese shrine. While we stand there silently for a few moments we hear a deep urgh sound not far ahead in the bush. This was at 6. A deer, the guide says. When the students arrived we creep into the ever darkening tangle in hope of a sight of an animal. The rest head straight on. I crept off to the right, which I thought was the direction the sound came from. After walking for a while but seeing nothing, I heard some very pretty and unfamiliar bird calls.

I set off to find the others. Along the way I came across the skull of a deer. Although the guide said there were deer, wild boar, porcupines and civet cats here, we saw nothing. By 6.20 or so it was dark and so there was nothing we could do but head back. The students tried to take some photos of our group but it was just too dark

6.36 back in the van and starting our bumpy and uncomfortable way back, only now it's quite dark and we can't watch the forest outside. We tell stories to entertain ourselves.

7.40 we just dropped off the guide at his house and are now heading for the resort where we hear the others from the bird group have already arrived. I hope they had more success than we did.

I'm quite disappointed at how this turned out. We drove four hours all the way across Bali and another half hour to the animal rich area- all of this for 15 minutes of walking in deer country!? And of course it's double the travel time since we have to go back. 9 hours travelling. Argh. But what did we see? Another side of Bali- with a different climate and different forest. We saw the incredibly rare and endangered Bali myna. Some bird watchers would give anything to see that. Then the leaf monkeys- also very rare and extremely impressive. We need to add to this whatever the others saw.

8 back at the resort. Time for dinner and bed. We have another early start tomorrow as we journey all the way back across Bali to Denpasar. This town is another tourist spot. There are endless souvenir shops and restaurants and badly dressed westerners everywhere. This is Bali.

Komodo expedition day 9

17 May 2016

4.50 up. The local roosters make excellent alarm clocks. A few minutes later a nearby mosque airs its call to prayer. Behind my room local villagers stir in their kitchens. The Dutch brought Javanese labourers to this part of Bali to work new plantations. These are presumably

their descendants.

The resort serves an excellent breakfast. You know the bananas are fresh when you see the staff cutting them from the tree ten feet away.

8.06 we depart in the same bus for what is sure to be a 5 hour drive back across the island to the capital, Denpasar. Ugh

In David Attenborough's 1950s documentary and book about visiting Bali, I notice some changes have taken place. First of all, the conical bamboo hats that people now wear while working in the rice fields (and seldom seen otherwise) look rather Vietnamese- and in the 1950s the hats were quite different, they were almost flat. They looked a bit like an upside down saucer. Now that I notice this, I realise that this older style of hat is present in the paintings of traditional rice paddy scenes that one often sees for sale.

Secondly, the walls around house compounds were then mud brick. Wallace also mentioned them in the 1850s. There are few of these left. Almost everything is breeze block or brick now.

Since we have so much time on the bus, we conduct our daily reflections, a discussion and summary of what we have seen and learned. This one was quite helpful since our journey out here and back was so long and we saw so little. But we are here to study conservation, not for a holiday. And seeing the face of the real situation of conservation in Indonesia, warts and all, has been enlightening. The national park was full of litter, much human traffic and fishing was seen. The monkeys along the road come to be fed etc. How can such vast areas be 'protected'?

Kelvin shared with us what he had observed when we paid to enter Bali Barat yesterday. The officials came up with various 'miscellaneous' additional fees in addition to the official entry tickets. These amounted to 5 million rupiahs. They were so unabashed as to count the notes and put them in their pockets! This is what is called 'corruption'. One hears about such things in the abstract, but here it was in the flesh. And it is more complicated than one might expect. These people are paid very little and have to make a living. And our guides were conscientious and very knowledgeable. Our transportation was then on top of all this. The lesson we learned here is that corruption is not the wholly black stain one expects it to be. In this case perfectly honest and motivated individuals need it to make ends meet- and in fact are passionate about conservation. Who would have thought?

9.37 we just stopped for a toilet break at an enormous souvenir shop, Krishna (I think). The quality of the things was quite low. But we all had fun looking at all the merchandize. And onwards with this interminable ride. I use the time to work on a public talk I'm giving next month 'Charles Darwin's sexy barnacles'. Most of the students are able to sleep.

1.10 finally arrived as the bus turned off the road into a narrow lane somewhere in the vast untidy sprawl of Denpasar. We have arrived at the accommodation. Ugh! The booking is a hostel for backpackers - which means a pretty shabby looking place with 6 bed dormitories, shared lavatories etc.

One had to remove ones shoes before entering. I had to use the toilet. I almost fell over from the mildew and sewer-like miasma that was there contained. Oh shades of Cloacina! A sign said no toilet paper was to be flushed down the toilet. I emerged with wet socks from the flooded floor. I am utterly disgusted. I'm not prepared to put up with this sort of thing at my age. So I'll book a decent hotel next to the airport. I'd take all the students too if they wanted. But they are very stoical and not so put out- especially those who have done national service.

2.02 walk to lunch at a nearby Soto Ayam place. Alas not very good we think. Here too are three caged birds, of three species. The green Leaf bird sings beautifully despite his shabby surroundings. Yong Sheng let me use his phone which, like everyone but me, has a temp local SIM card providing internet. I booked a room at the Hilton garden inn.

With the delay and an hour spent on lunch, we have burnt up our allotted time at the Bali museum, which apparently closes at 3 or 3.30. Our super slow bus driver, the snail driver, has cost us dearly. 3.35 the bus finally arrived, 20 minutes late.

3.53 the bus has stopped. We will walk to the bird market now. One of our main targets.

In Denpasar I notice some interesting differences in the street food carts, called gerobaks. They have a wooded frame with tin panels and roofs, wheels at front, small turning wheel at the back. Elsewhere there are only two wheels at the middle of the cart and legs at the front and the whole is balanced while being pushed.

If one takes a close look at the brickwork of temples- or temple-like traditional Balinese architecture with it's characteristic red brick with grey stone adornments, the bricks are placed so close together that no mortar is visible between them. Also the surface is so perfectly smooth, it is as if the brick were sanded flat after being placed. It is astonishingly good workmanship. Then I remember something Wallace wrote about the ruins of a split gate temple in Java, and he noticed the same thing there: "The extreme perfection and beauty of the brickwork astonished me. The bricks are exceedingly fine and hard, with sharp angles and true surfaces. They are laid with great exactness, without visible mortar or cement, yet somehow fastened together so that the joints are hardly perceptible, and sometimes the two surfaces coalesce in a most incomprehensible manner. Such admirable brickwork I have never seen before or since."



Bali bird market.

We turn right onto a short lane – it's the bird market. Endless cages are stacked in front of and into many small shops and a cacophony of whistles and calls from countless species of birds fills the air. The documentary team goes to work but I am so drawn to stare at one thing after another that I didn't participate as much as I meant to. Cage after cage held surpassingly beautiful creatures that one could never see in the wild here anymore. Many are in very sad shape. One man who showed us some of his animals, including snakes and an owl, removed a recently deceased owl from one of his cages and threw it away. I can't do justice here to the experience of the bird market. We saw countless species. I tried to photograph each one, but I failed. It was also often impossible to get a photo as when some birds are approached they take fright and hop and flap about their cages in a vain attempt to flee. Others have been hand-reared and are tame and can be held.

There are many other animals here too. From rats and mice (probably snake food) to native civet cats, squirrels, fruit bats, iguanas and many species of geckos, hedgehogs, cats, dogs and one place had about a dozen very young long-tailed macaques. These were chained by the neck very securely so that they could barely move. One can see on their faces that they are frightened, stressed and very miserable. Some are quieter and will allow themselves to be stroked and scratched. A little reassuring contact seems to do them good. They are very social animals and at this age would frequently be held and groomed by their mothers and playmates.

One shop had dipped newly hatched (chicken) chicks in coloured dyes! There are foreign birds too, such as Guinea fowl, doves, parquets, lorries, quail, parrots, kingfishers, starlings and mynas. One man has cardboard boxes of chicks of three or four species- freshly captured from the wild. Some still have their eyes closed. We are handed woodpeckers to hold. Their strange feet have two toes pointing forwards and two backwards to allow them to scurry up and down trees with ease. Another man drives up with a motorcycle. On the back are cages crammed with tiny munias- a very common bird that feeds in the rice fields. He thinks about 300 of these birds are brought in a day. They are only meant for snake food. Like our experience on Lombok with the fish market- the scale of the harvest from nature is staggering. I for one have very mixed feelings. I love to see the birds and animals so close and find them fascinating. I also can at least partly understand why people here want to have them. But on the other hand they are mostly so badly cared for in the market, the death rate seems very high. Probably because many are not worth much. Some birds are two for 50 cents. Others are 10 Sing dollars. A lot for someone around here. One is torn between fascination and a deep melancholy. The market is perhaps 50% chickens which most people overlook as familiar – but there were very many breeds, some very fine indeed.

4.25 Another Fellow of the College, Lina Lim, joined us having landed and is being taken to the ‘accommodation’ by Anthony. Once she saw it, she decides to move to the hotel later too. 5.29 walking back. We all feel emotionally drained from the experience.

5.36 back on the bus and heading to a local flea market.

5.44 arrive. Just t-shirts and cheap watches. This is a market purely for locals- which seems to be a hard sort of thing to find in this tourist ridden place. I was the only westerner in the place.

We order Babi guling, traditional spit roasted pig or suckling pig- ours looks rather large for that. We are served a plate of rice with a great mixture of things- lots of organs, crispy skin, black pudding, soup. But way too spicy for me. Pain. Left in bus.



Eating Babi guling.

7.10 walking to hostel to fetch my bag. 7.26 back at bus, soaked in sweat, and head for the other hostel where Lina gets her bag. 7.51 in taxi to airport hotel. Thank god.

On the way we are caught in crazy streams of traffic converging! It's a very scary chaos. Lina says, don't look! I said amazing they don't collide as the scooters squeezed in-between with an inch to spare and about 5 'lanes' converged around us. Suddenly the driver

spoke for the first time ‘this is jungle! Strongest wins!’ haha.

8.34 arrived at the Hilton Garden Inn. A sigh of relief. Tomorrow we fly to the island of Flores and then sail for Komodo itself! The dragon awaits!

Komodo expedition day 10

18 May 2016

4.10 up. Fetched dried laundry from upstairs which was luckily still there. I fell asleep rather than collecting it. Now I will last through to the end.

6.30 Lina and I depart in hotel shuttle for airport. One has to queue for a security check and metal detector and baggage x-ray just to enter the airport.

At 7 we sit down at the gate and rejoin some of the students. The plane is delayed for half an hour. No surprise there. I’m amused to learn that Kah Jing and the documentary team also abandoned the hovel and stayed in a hotel near the airport. Very sensible.

7.55 we lift off in Flight GA7026, a small ATR72-600 twin engine turboprop of Garuda airlines.

And thus we leave the fascinatingly unique island of Bali. When Attenborough came here in the 1950s he was already able to remark as a matter of course: “Certainly we could not hope to see many unfamiliar animals... We knew the island to be so heavily populated that, except in the western tip, there is very little uncultivated country to harbour an abundant and exciting fauna.” To think that this state has only continued to worsen should give one pause.



9.14 we touched down at Labuan Bajo on Flores.

This island is very arid and brown with a scrubby Australian-like vegetation.

Prof. Tim Barnard from the Department of History, NUS, joins the expedition here and was waiting for us at the tiny and brand new airport. A bus has been booked to take us to our boats. The tiny town here is growing as a result of the Komodo tourist boom that has been gathering pace since the 1990s. There is a brand new hotel, a new airport building and a new hospital. At the rate tourists are arriving, this is going to continue. This utterly transforms the economy of the place and the lives of the people. The local people have always been either farmers or fishermen. Already there are only a few houses left built on stilts.

We stop for a brief view of the harbour from the cliffs above. All of the boats we can see are part of the Komodo tourist trade. We are to be split between two boats belonging to the same company.



Arriving at Labuan Bajo on Flores.





11 we cast off. The three lecturers are on board the smaller boat, which has cabins. The larger boat has a single shared cabin.

The smaller, the *Ayla*, is a 23 meter mahogany built vessel in the local style. The hull came from Java where it was a fishing vessel. Only c. 6 months ago it was converted to a passenger vessel. This conversion was done in Labuan Bajo. There are two decks and two heads or toilets. The other boat is called the *Bintang Laut 3*.

Everyone is exhilarated as the boats chug their way out into the deep blue of the surrounding sea. The sky is bright, the sun is shining, the sea is completely calm. A mercifully cool breeze blows away the hot staleness of the grubby little port. We head first towards little Pulau Kelon, which is only 9km away,

where we can snorkel or climb its high hill. 11.53 we beach the boat on the white sand.

I go snorkelling on the tiny reef. This is much better than the snorkelling we had at Lombok. There are more types of fish and more of them. I even saw a brilliant green mantis shrimp. I swam towards the beach to talk to some students when suddenly something bit my left thigh- rapidly several times. It hurt! I turned to face my attacker. It was a dark purple fish with a yellow spot. I had already observed that these are very aggressive in defending their territory. I clamber up the beach and see that the little bugger has actually drawn blood!

1.15 the boat heads off. A nice lunch is served. Rice, aubergine, onion rings, fermented tofu and fish (travelli). All is prepared in the tiny galley by one of the local crew. The men are all from Flores which has ten language groups. This crew speaks Manggarai.

We pass by beautiful islands which dot the sea all around us. They are mostly innocent of any trees, instead looking more like a mixture of green and yellow grasses. Some from a distance are so bare that you can see all the contours of each ridge and valley.

2.45 we are arriving at a tiny wooden dock at Rinca island. It is as bare and scrubby as the rest around this area. Rincha is the local pronunciation. This is one of the few islands that is home to the Komodo dragon.



At Rinca island.

What a thing to do. Winston Churchill supposedly said something like ‘why would I want to travel thousands of miles to look at a big lizard?’ A good question.

Only eight other boats are moored at this tiny and obscure place. All are tourist boats and one smaller one belongs to a fisherman. Almost all visitors go only to Komodo island. But a lot of wildlife can be seen here Tim Barnard tells us.

2.53 we set off in the dinghy and land at Loh Buaya which is named after the dragons. Their Malay name is Buaya darit or land crocodile.

3pm just off the dock and stepping on the bare rocky shore of a pale volcanic stone and there is a dozing adolescent Komodo dragon just a few feet away. My first wild dragon! It's fascinating to see so close. We walk along a dirt path towards the ranger station beside the abundant mangroves which fringe the island.

At the park, a ranger introduces us to the basics and takes us into the park. Each ranger carries a long forked stick to ward off the dragons.

3.15 we start our walk. Right away we spot a Timor deer grazing close by. There are also long-tailed macaques near them. These must be introduced?

We reach the sagging barracks of the rangers, which are on stilts, and there are three large dragons dozing there and we are quite close. Their eyes and scales were clearly visible in every hoary detail. Once you see them like this you just can't believe that a lizard can get this big.

Then a really big male came swaggering in with that peculiar lumbering sideways gait, typical of all reptiles from their fish ancestors. He really was a monster as he flicked his yellow forked tongue in and out. He has bitten two rangers in the past. A few people have been killed here we are told.

3.42 a wonderful type of bird that lives east of the Wallace line, a megapode, or big foot, is seen in the bushes. It's a pair foraging. This is the Orange footed scrub fowl. Soft colour, feather crest. Another dozing dragon is passed on the trail.

Then a guide came rushing back telling us to abandon the trail and enter a dry stream bed just beside it. From around the corner come the heavy footfalls of a massive dragon. Because we were filming a documentary the guides let us stay this close.

We see a Falcon in a tree, not sure of the species. The guide shows us the palm tree from which the regional spirit is made, arak. It's called *sopi* in Flores says guide.

After the guide had finished I gave the group a little talk about the tree that was all around the trunk of the Palm, a type of strangler fig which is slowly choking its host to death.

Next we see Megapode mounds, scratched up with their eponymous feet and used to incubate their eggs. One also often sees areas of dirt they have scratched around during feeding. Along the trail there is a lot of water buffalo dung. But alas we didn't see one.

The dragons congregate around the ranger station because they smell food. They are never fed. I wonder if these trips in vain then waste much of their time and energy? The guide says people come to Rinca every day. There are about 700 Timor deer and 600 water buffalo.

5 back on dinghy and we return to the *Ayla*. We are heading next to a nearby Pulau called Kalong, which means bat, i.e. Bat island.

5.33 freshly fried bananas or pisang goreng are served at table. Delicious.

Kalong is just a mangrove patch in the middle of a bay. Bats roost there no doubt to be safe from predators. As there is no food there, they fly over to the main island at sunset. Just as we arrive this mass exodus begins. With the sky stained orange and red at sunset, these large and ungainly animals flap out in a stream over the water and our boat. There must be thousands of them. Seeing this prehistoric looking aerial migration is certainly one of the highlights of the expedition.

6.15 head back to moor to a buoy off Rinca for the night. The breeze is so refreshing. The stars are so bright in the clean clear skies and Mars shines like a bright red torch.

7 the *Bintang Laut* ties up alongside. The crews of both boats merrily shout and joke in Manggarai. The men are very friendly, most speak good English and they are happy to answer lots of questions. With the boats tied together we are all reunited.

7.25 dinner. Rather spicy for me. We are told that one cannot swim here because there are salt water crocodiles in the area!



Fruit bats at dusk.

8.20 we hold our final reflections discussion aboard the *Ayra*. The documentary team record it as usual. My impromptu notes for introduction: Jakarta. April Asia. Lombok. Fish market and sharks. The underwater life. Bali Cycling. The overland odyssey to Bali Barat. What we didn't see. And the complex context. Bird market. Still emotionally exhausted. Flores and boat. Komodo dragons in the flesh. Still alive. But maybe not a conservation success so much as an animal no one wants to kill and lands no one can turn into farms or build towns on...My own feeling. Our expedition is not over. And one does not change ones mind like that. It takes time.

Each student then spoke in turn while the rest struggled to stay awake after dinner and a long day. We hear some diverse and surprising views as a result of what we have seen. Some refreshingly frank. 10.15 we conclude. This was very worthwhile.

10.58 I remember that we should try to see some bioluminescent creatures in the sea so we drop a bucket with a rope over and over the side and the disturbance in the water causes little greenish-white stars to ignite for a second and then fade away. Several of us enjoy Bintang beer and conversation till 1.50am.

Komodo expedition day 11

Into the Dragons' lair

19 May 2016

5ish I woke up as ropes are pulled across the deck over my cabin as the crew casts off the moorings. Then the big diesel engine is started and the boat comes to life with its characteristic background rumble. So the *Ayra* heads for Komodo while the passengers sleep, many on deck in the cool sea air.

6.23 up when a crewman knocked on my cabin door and shouted breakfast. Ugh. Outside it is another beautiful day in paradise. The same sort of scrubby islands are still close at hand.

One if these is the famous Komodo. I expected my first view of it to be a significant moment. Instead I had been looking at it for quite a long time without knowing it. That's a bit of a disappointment, but as the anticipation of landing on this famous island builds, that is nothing to worry about.

We round a promontory and a small native village with tin-roofed houses and mosque

in the centre comes into view in the distance. No tourists visit it. That must be where Attenborough landed in the 1950s.

Some distance away is an enormous concrete jetty. This was built in recent years to accommodate big cruise ships. However the corrupt firm that built it did not bother to determine if the water there was deep enough for such ocean going vessels. It wasn't. So the cruise ships that regularly visit this bleak but romantic outpost are obliged to anchor far out in the bay and their thousand-odd passengers are ferried to and fro in small boats.

Komodo seems greener and more thickly clothed with vegetation than the average island in these parts. One of our crew tells me that the most recent human killed by the dragons was a boy from the village in 2006. He had gone into the bush to relieve himself when the animal attacked and bit him.

7.20 we dock. I feel it swaying under my feet since we have been at sea for a bit. We walk to the simple covered area where a Komodo-born ranger gives an introduction and safety instructions.

7.54 our walk starts. The first animal I see is a wild boar snuffling about some rubbish near the ranger station. Then we see a small and more colourful 3-year-old dragon, or possibly a female since these are much smaller than the giant males. We see a Timor deer quite close and unafraid, browsing in the thickets. Then we see another bird of the same species of megapode as at Rinca.

The guide tells us how young dragons live in the hollows of the soft decaying pith of dead but standing sago palm trees. We are very lucky to see one of these actually sticking its head out into the morning sun.

I've never seen forest like this. The plants are often acacia trees and all is unfamiliar. We have come to another world. I could spend days exploring here. The guide tells me that Rinca's vegetation is about 70% savannah and 30% forest whereas Komodo is the opposite with 70% forest cover and only 30% savannah. I hear elsewhere that both islands support about 3000 dragons each. There is a fine black bird with a serrated tail. The guide says it's a *Wallacea drongo*.

I spot some strange small suspended objects or flattened tubes on a tree trunk about 20mm long. They seem to be silk, covered in sand and bark for camouflage. These probably held larvae. Someone spots weaver bird nests up in a tree and near them is a large, untidy nest of sticks. A Firebird flies from nest.

We see an eagle with white and brown wings perched on a tree in the woods. It takes no notice of us so I can get a good look with the binoculars.

We then leave the forest and climb a crumbly rocky hill with fine views of the surrounding hill and bay. Near the top I notice some strange stark white lumps on the ground. I guessed what they were and the guide confirmed- Komodo dung. The white colour comes from the large animal bones they swallow and digest. There is also plenty of deer hair.

9.15 we arrive back at the ranger station after making a loop of a couple kilometres. We find the remains of a deer skull in the dry river bed.

Then we get to admire one last big dragon up close, lying near the beach. We take pictures of and with it. The most massive hulk of reptile flesh does open its large dark eyes and look at us blankly. For thousands or millions of years it has been the top predator in its environment.

9.33 the tour ends. Our young guide's name is Donna. He is from Komodo and speaks the dwindling Komodo language.

We have to run the gauntlet of rows of souvenir salesmen selling identical tack- wooden dragons carved from native hibiscus, fake pearls, fake dragon teeth they claim are real but are clearly just bone. The dragons' teeth are in fact quite tiny. One man whispers to me he can sell me a real one. The sellers are all from Komodo.



A large dragon dozing near the beach.

10 walked back to the boat along the massively and ridiculously out of proportion jetty. It dwarfs our little boats. While we waited, I saw a sea eagle fly in and swoop down to catch a small fish near the jetty and return to shore to eat it from its roost, and then do the same again three more times.

10.11 we sail a bit further back the way we came.

10.45 we anchor at so-called pink beach, further down Komodo, for snorkelling. Here the eroded remains of red Foraminifera mix with the sand to give it a pinkish colour. It is one of only seven pink beaches in the world.

This is by far the best snorkelling we have had. It's a lively little reef which is swarming with fish of many species. Much of it seems to be anemones and soft corals. Few other creatures than fish can be seen. I try to photograph all the novel species I see, especially the brightly coloured or striking ones.

I join the students on the beach and explore the rocks under a cliff at the waters edge. I see the fastest snails ever! If touched they bolted across the rocks at amazing speed.

We go aboard the *Bintang Laut* for our final discussion. I talked about the origins and anatomy of the dragons and why they look and walk the way they do (because of their fish ancestors) and Tim Barnard talked about the social history and recent developments.

1.35 the eight of us on the *Arya* return via the dinghy and we set off back for Flores. And so we leave the fabled island of Komodo.

The journey back is pleasant. A nice lunch too though the breeze is lacking. Everyone sleeps but me. I work on photos and journal.

5.34 we reach the grubby dock of Labuan Bajo on Flores.

5.57 we are all on the bus to a hotel. Our flight out is tomorrow afternoon.

We drive through what is called the old town high street. It's a mixture of local and touristy shops. I spotted yet another style of street cart here- two wheels and much smaller.

6.05 we arrive at Bintang Flores Hotel, a new Western style place. Very nice. The first chance to have internet access again since leaving Bali. But the wifi is dreadful- does not work in my room and at the lobby I can barely download an email.

Komodo expedition day 12
Hobbit hunting on Flores
20 May 2016



Route from Rinca (green dot) to Komodo and back to Flores. (Strava)

6.30 up Breakfast with Kah Jing and other team members. The food was not as bad as the vile dinner they served last night with its frozen prawns and tinned vegetables, the worst food I've had on this expedition. The students all went out to the local fish market for dinner but I missed it, not hearing what they planned until too late.

10.09 we are all on buses and depart the hotel for our last excursion, this time in the land of the hobbits, the mysterious early hominid creatures that for many thousands of years roamed this island along with a pygmy elephant, Stegadon.

Flores was named by the Portuguese in the 16th century, even though it is not flowery, but very dry and desert-like. The people grow nut trees and coffee depending on the local conditions. In 1851 the island was given to the Dutch. Most of the people are Catholics, something one finds in former Portuguese colonies like East Timor. The Dutch made no serious efforts to convert the people to their religion. The guide says foreign missionaries were still coming here until 1986 when the government declared that all missionaries must be Indonesian citizens.

We stop briefly at a restaurant recommended by our local guide, Basco, to pre-order lunch for later. And on we go to the cave, Gua Batu Cermin or mirror stone cave.

10.50 we stop after a short drive and head off on foot for the cave. Everything's close by in Labuan Bajo. There are only two traffic lights in the whole town!

A park guide takes the lead after our tour operator pays the proper 'fees'. We walk along a footpath through a very strange forest which consists mostly of small, and tightly packed stands of bamboo. The small branches are covered in thorns. The terrain is covered in boulders and soon I can see sheer limestone cliffs through the bamboo. Then dark pockets or small caves can be seen as the limestone is pockmarked with caves of different sizes.



The guide explains that in 1951, Dutch missionaries first explored these limestone caves.

They contain many fossilised corals. So this whole formation must be uplifted coral reef. I give another impromptu lecture to explain to the group what we are standing in and under, the compressed and later uplifted (from the sea bottom) remains of millions of years of coral reef growth. It must have grown in a place of subsidence in order to be so incredibly thick as we could see from the cliffs towering vertically over us. Corals only grow a few millimetres a year and only live in shallow surface waters.

Before we reach the entrance there was a large beehive hanging under an overhanging rock above us. Like those I saw in East Timor, this is the sort of open comb that is covered with living bees.

Hanging down the sheer cliff next to us are long thin tree roots like water hoses lowered from above. One thick one was covered in dissolved minerals which dissolves and flows downwards when it rains. But the roots were fighting back, as they expand with growth, they crack their white mineral casing.

The high cliff beside us is split by massive fissures and up into one of these we climb, past an enormous column formed by dripping mineral rich water.

There are massive caverns with part of the roof collapsed so they are well lit. Everywhere the rock has been eroded into fantastic shapes and textures.

In two groups the guide takes us, wearing hard hats, into a tiny entrance on one side. One has to crouch very low to crawl through this but one can soon stand up again. The passage is narrow but it extends upwards an enormous distance. After a short walk the passage opens up into a large domed hall.

On the ceiling and in crevices leading up are many streaks and accumulations of bat guano. The bats have flown away since earlier visitors disturbed them. On the floor some distance away from the group I was amazed to see a gigantic cricket, maybe two inches long, prowling the floor. It probably eats the bat guano. The guide then showed us a giant spider hiding in a crack. Supposedly it eats bats.

In the ceiling the guide pointed out a feature in yellow stone that he said was a fossilised sea turtle. It isn't. It's just stone that vaguely resembles a turtle outline, not a turtle skeleton. Some tree roots even made it down to this deep gallery. We were shown other passages and features such as stalactites and whole walls of intricate shapes or delicate patterns formed by dripping water.

As we were about to leave I spotted a tiny bat hanging alone in a fissure in the ceiling. It must have been hanging by one leg as the gentle breeze through the cave made it spin a little. It was close enough that I could see its little ears and nose twitching as it probably scanned me with its inaudible sonar.

Outside we scrambled and climbed over the playground of rocks and cliffs before finally the guide said it was time to go. The cave was certainly one of the highlights of our expedition.

2.52 we are back on the bus and heading for lunch. I gave my last mini-lecture over the bus microphone, this time on the hobbits and what we know about them and the consequences of island isolation to allow new species to evolve but being for the same reason precarious and particularly susceptible to extinction.

2.11 I bought some gifts in a souvenir shop next door and near the till I saw something that stuck out from the usual tourist kitsch. There were rows of small water bottles filled with dirty brown liquid, one dark and one light. Some had a white scum floating on the surface. It looked like honey. But if you tipped a bottle the contents were far too thin and watery to be honey. I asked a sales assistant and she said that this 'Madu bessar', a honey drink. The dark one was from 'stone' and the lighter from 'wood'. I bought one of the light ones. Neither Tim nor the local guides knew what it was. I tried it. It was very like honey but perhaps watered down. Eventually after many enquiries I learned that it is honey, this one from bees who live in trees.

The students asked me to say a few closing remarks and I thanked them for all their hard work. There followed some special thanks and gifts for some of the core organizers.



2.47 depart for airport which is just two minutes away.

4.10 we lift off from Flores in the same Garuda turboprop. We will cross the Wallace Line for the last time. But we had one last adventure in store for us.

5.38 we touch down in Bali. We wait for ages around the baggage conveyor and bags just never come out. Eventually more and more of us are getting nervous about catching our next flight.

When we finally do get our bags, we rush to the other side of the airport for our Tiger Air flight to Singapore. I arrive as perhaps the second person. Anthony is speaking in Indonesian to a lady at the desk. More of us arrive. The lady says the check-in counter closed at 6.15. It's now 6.21 and the flight departs at 7. We can still make it if she would take the trouble to help. She won't.

I couldn't believe that she did nothing to help a group of 25 passengers for her airline. Anthony and others tried valiantly and things became more ominous and stressful as the minutes went by. The lady just won't budge and we cannot get through to anyone else who will help.

Eventually it becomes clear that we are going to miss our flight. Then things become even more frantic as we make calls and send rapid texts and messages and some run here or there to check details, flights and many other things.

To make what felt like a very long story short, there was another flight to Singapore at 10pm by Jetstar. One final hiccup, Kah Jing's expedition account card won't work. So I bought the 25 tickets with my card. At least they will all get back home safe and sound tonight.

It's been a stressful evening but the thing to emphasise, I think, is that all is well and we will soon be back. And, after all, the expedition has been a brilliant success.

8.30 we queue for the security check- it takes ages. This flight is delayed too...by half an hour.

10.30 we finally board an A320 Jetstar flight JQ116 to Singapore. The Chinese lady in the seat beside me seems to think that my shoulder makes a comfortable pillow.

1.22am landed safely back in Singapore.

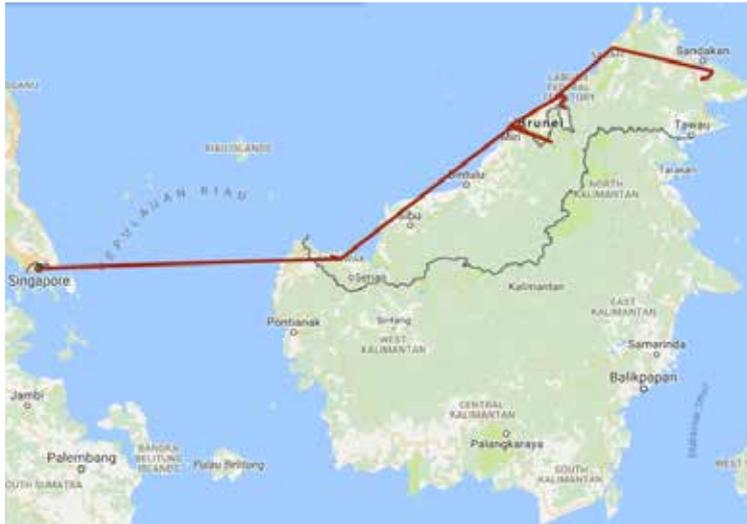
Our odyssey has sadly come to an end. During that last twelve days, eight islands and thousands of miles flown, driven, sailed, walked, swum and ridden we have seen extraordinary places and things. We have met as broad a range of people as one could imagine, more in fact.

The group certainly learned a lot and grew with the experiences. And we had a lot of fun. Their organisation and professionalism was unsurpassed. I'm sure that Tembusu College has never known a more successful student trip. And all of NUS could scarcely have seen anything to compare to it. Surely this will inspire others to forge new expeditions to new destinations.



The Komodo expedition team with a dragon, on Komodo.*

The Borneo expedition May 2017



Route of the expedition from Singapore, Sarawak, Brunei and Sabah. (Google maps)

Borneo expedition day 1

8 May 2017

Today fifteen of us from Tembusu College embark on our expedition to Borneo, the third largest island in the world, home to 20 million people and shared by three countries. It has some of the oldest rainforest in the world it is said.

9.15 most of the group has assembled at Air Asia counter 13 ready to check in. We queued for some time to use the automated check-in machines but the two of us who are not Singaporeans could not be 'processed' so we had to queue at another counter. On the way to the gate one of the students asked me, looking at my long sleeve shirt, 'are you going to change when we get there?' I had to laugh. It is a myth that a short sleeve or t-shirt is somehow cooler. The ambient temperature is the same. In fact the more of your skin that is in sunlight the hotter you will be.

12.01 take off in an Airasia Airbus A320-200 bound for Borneo.

I had the good fortune to be seated next to an elderly American gentleman who spotted me reading David Attenborough's *Zoo quest for a dragon* (1957). His name was Rob Stubbing and he said he had worked in conservation in Borneo for forty years. We talked about many things and it turned out we knew many people in common. One thing that sticks in my memory was his answer to my question about any prospect of hope for saving the forests here. He said that legislation here did not work because it was not followed out or enacted locally. But as more foreign companies demand that the blasted palm oil comes from so-called responsible plantations that don't kill off the orangutans etc. that this was real pressure that seemed to work. Hmm. Something to think about there.

1.02 touchdown at Kuching. I'm in Sarawak at last. How exciting to finally be here. Wallace spent longer in Borneo than any other island in the region.

Once through border control we were met by a local lady named Rose from the Malaysia Nature society and a van of Orient travel & tours.

There was a bit of chaos as we bought local phone SIM cards.

2.21 we depart packed like sardines with our bags in a large van. It starts to rain. Rose tells us that the residential buildings in the city limits cannot exceed four storeys as well as much other introductory information about Kuching and Sarawak. All the buildings are very new from my perspective. I check in to Pullman hotel and the students at a hostel just down the road.

3.25 heading over to the students.

We go out to explore along crumbling colonial streets near the river. This mostly Chinese district looks very like Penang with its crumbling ornate facades.

3.50ish we go into a local kopitiam, thick with the smell of smoke and burnt cooking oil, which serves both halal and vegetarian food to suit some of the students dietary preferences. 4.05 as we eagerly devour this excellent food heavy rain suddenly erupts outside. I had a local dish called crispy Mee kolok. Very different from what I've had before and very good.

4.32 the rain has stopped and we set off for the Old state mosque. It is built on a low hill but is unfortunately a new modern building and very ugly. Not worth a photo. The steps leading up to the mosque all have numbers painted along them a few inches apart. I asked our Singaporean Malay student Athira and she said it was to help people remember where they left their shoes. The grassy slopes of the hill all around are covered in grave markers, little posts of rotten wood or stone. There are two for each person, representing the head and feet but actually quite close together. Almost all are leaning precariously in various directions. Not a single one stands up straight. The cemetery looks like it has not been used for many years.

Below is the Sarawak river and along it was pass a small dry dock. Large brass plaques near it quote from an old local newspaper describing the modern wonder of this dry-dock when it was opened in 1908. It still looked to be in excellent condition, though empty. As we passed by many little shops I spotted something that amazed me. On a table were various electrical goods including Bakelite light switches and bulb sockets that were identical to antique ones in the UK.



Brooke Astana.

We crossed over to India Street, a tiny Indian market area now sadly marred with a grotesquely modern roof structure. On the corner was an old man with a few tables and a hand-cranked buffing wheel with which he was polishing little stones for jewellery. He used superglue to attach the stones to a ring as two customers stood watching intently. We walked through a tiny lane near a mosque.

And then to the Sarawak river! I was very glad to stand there and look across at the Brooke Astana. Although the current building dates only from 1870 by the second White Rajah, Charles Brooke, it is I think on the site of the original Rajah's bungalows where my protagonists Ida Pfeiffer and Wallace stayed in the 1850s. I recognized the view from many paintings and engravings. Across the water is a bombastically hideous giant government building monstrosity that looks like an alien movie set.

At the water's edge a ferryman in an ancient wooden sampan waits for a customer to cross the river. These boats are narrow with a pointed front and an elegantly curved roof. The back part looks like it can slide back to cover the ferryman. The boat had a narrow plank rudder and I noticed the most bizarre way of controlling it from the front. Along the outside of the hull, just inches above the waterline, some plastic pipes and wire were stuck together and just hanging

from some cord and connected the rudder with the driver. He simply pushed or pulled this long rod and it moved the rudder at the back. Later I saw another sampan which had a single long piece of bamboo, no doubt the more traditional material. The boats were powered by little lawnmower motors.

Not far away we saw the Brooke memorial, erected from grey stone in 1924 in honour of Charles Brooke. It looked like a WWI cenotaph. The brass plaques look like they have been crudely re-attached. Perhaps the Japanese tore them off during the occupation?



The memorial stands in front of the old courthouse buildings from 1883 which were in use until 2000. The style is a simple but elegant neo-classical/Mediterranean one with a lovely courtyard. Sadly now the building is relegated to a trendy cafe-restaurant.

Near one of the doors on the verandah was a large old safe. I reckon it was c. 1900ish and labelled as a “fire safe”. A student asked what that meant. I explained it was meant to survive a building fire. How? I don’t know but I expect it was insulated as well as being strong, perhaps with asbestos. I then ended up explaining something of the history of asbestos. What interesting tangents we end up following on these expeditions.

The students seem amazed that I can tell the age of buildings and antiques by their style. That one is obviously 1900ish-1920s, the other recent post war, etc. I try to explain the differences between some buildings along the street. Look how plain the ones dated 1950s on their fronts are compared to those with the detailed plasterwork near them. Note the neo-classical pilasters etc.

As we walk around this interesting city it does have all the feeling of being in peninsular Malaysia. There are the usual unfinished rusting building projects and missing access covers on pavements leading to many makeshift covers of wood etc. instead and many just ominous gaping holes waiting to swallow the unwary pedestrian. I bet that would make some sort of negative selective pressure for those who walk along absorbed by their phones. Here they would gradually vanish down the sewers.

6.45 we pop by Ting & Ting the first supermarket in Kuching to get supplies to make lunch tomorrow since we will be away from any food sources. The front of the building with its gaudy little coloured tiles looks 1960s.

7.25 we return to their hostel for the daily debriefing and that’s the end of the first day. Things really kick off tomorrow.

Borneo expedition day 2

9 May 2017

8 I meet my local contact, Borneo Tom, as he styles himself, and his local wife and young son at the students’ hostel. Tom is from America and has settled in Kuching, which he loves. Together we set out in the van for Matang Wildlife Centre about a 40 minute drive away to the west. In the van on the way we presented Tom with a complimentary copy of my book *The Annotated Malay Archipelago* to thank him for helping us. He has arranged a special tour for us with one of

the conservationists at the centre.

8.53 arrived. We meet biologist Leo Biddle (from Ipswich). He's quite sunburned and has his head shaved and wears camo trousers and wellies. He tells us about this state-funded rehabilitation centre and why the rescued animals here often can never be released to the wild. Those that have lived too long with humans can never learn youthful survival skills etc. because that learning period is over. They can do nothing but live out their lives in a beneficent captivity.

Leo is a font of information. I learned that the reason that Orangutans have such large teeth and unusually powerful bites is because they often rip off and chew tree bark. We tend to think of them as fruit eaters, but fruit is seasonal and quite rare in the forest. There is a poster in the shelter where he talks to us. It has pictures of people who were terribly injured by orangutans. I had never heard before that they are so dangerous and have so often injured humans. Of all the orangutans kept in such centres over the last 40 years, not one has ever been released into the wild!

Leo is a good speaker and teaches us all sorts of things, but I thought his manner of speaking and asking overly simple questions a bit odd such as 'what would happen if a died in the forest? Would it fall over?' It then came out that he thought the students were not from university but from school and that they were about 13 years old! What a strange mistake to make.

He is very sceptical about any effectiveness of the centre. He thinks there are no benefits to allowing the public into such places to gape at the animals. The most important thing for the animals would be to lose a familiarity with humans.

Amongst his remarks are the usual conservationist ploy of trying to apply moral pressure to a handful individuals not to ride tamed elephants or pay to release turtles etc. These moral crusades are in my opinion a complete waste of time. It's impossible to convince the public at large to behave in some supposedly moral or responsible way to save elephants or whatever. Legislation banning elephant rides etc. could actually do it, not making small numbers of people feel guilty. But the moralizing is all most people have access to in order to promote their cause.

There are 650 animals in the centre of which 29 are orangutans. Leo leads us on a short leisurely walk along well-prepared paths through the forest to the various animal enclosures. I am astonished that someone had warned us about leeches during this walk. First we see the small and adorable Sun bears in an open-air enclosure.





Then came the highlight, the orangutans. We saw 10 individuals. They lounged about and the young ones played, but they took no notice of the noisy humans watching from a hide. Leo says they are so habituated from their time as human pets etc. that most of them like to smoke cigarettes! One of the older ones will even point and gesture if it sees someone smoking. I remember hearing once that only humans could point and gesture like that. Wrong again.

Another thing I learned is how dangerous they are. There have been hundreds of attacks from these habituated animals when let loose in the reserve with tourists free to roam. They have bitten and attacked many people. Leo tells us of one man who raised a pet orang for many years and one day it bit off his hand and foot!

We move on to a massive steel cage and I was awe struck by the big male behind a forest of steel bars. He is a massive creature, an alpha male with big cheek pads, throat bag and long hanging hair. Leo had paid from his own pocket to construct this cage to keep the male alive.

Leo said orangs don't walk upright naturally, they learn it from humans. That's not correct. In fact they move a surprisingly large percentage of the time through the trees on their hind limbs. This has led some to suggest that the upright walking of our ape ancestors started in the trees rather than on the ground.

We move on to cages of little grey gibbons as well as macaques and hornbills. There is one long-tailed lascar. In other enclosures we see porcupines, civet cats, and binturongs or bearcats.

Perhaps the most beautiful of the mammals were the Bornean clouded leopards. They were sleeping by day as usual. One of them is blind in one eye. Leo says tourists often throw stones at the animals to wake them and get them to do something. One had blinded the poor leopard cat.

In a large aviary we see several owls and nearby the surprisingly large Sambar deer. We are shown yet more enclosures with a huge Reticulated python and a large monitor lizard. Near them are the Salt water crocodiles and the extremely endangered False Gharial with its long narrow fish-catching snout.

12.25 We returned to the visitor centre and take our packed luncheon. We walked only 2.3km in 35 minutes. We then say goodbye to Leo who has taken so much of his valuable time to show us around. We gave him a copy of *The Annotated Malay Archipelago*. Finally we drive back to Kuching with Tom.

1.50 we alight next to the river in town. Then another highlight of the day for me, we took a sampan across the river! These very old wooden boats intrigue me. Once inside I noticed another strange feature that allows the boatmen to drive from the front. There was a cord running under the roof to the back of the boat and then around a pulley and tied to the starter rope on the lawnmower motor. With a sharp pull the man started his motor and in a minute we had putt-putted across the calm brown river.



2.15 We then walked to the Brooke gallery housed in the 1880 Fort Margherita. This is a small white plastered fortress with cannon overlooking the river. The exhibition is sponsored by the Brooke Trust. I was amazed by the number of personal objects that had belonged to the so-called White Rajahs of Sarawak, the Brookes. The quality of the displays and cabinets was strangely impressive. I later learned they had been brought from the UK. And there was of course a panel and display case on Wallace. After we had finished, one of the organizers (Liza Sideni Gallery manager) took us outside to show us a recently discovered species of sundew growing in the grass nearby. They were incredibly tiny! Their diameter was scarcely that of a penny. What minute insects they must catch? Strangely the ground was not marshy, but dry and sandy.

I looked further down the ravine where it was more damp and saw none.

Tom then gave us a brief talk on the museum and Sarawak history, as he sees it. He said the restoration of the fort and the exhibition were very controversial because local people hate the memory of the Brooke's.

4 We head off to tour some of the traditional kampung houses along the river. This seems very familiar to me from other parts of Malaysia.

5.19 take a ferry boat back across the river to the Chinese side. It costs only 1 ringgit. The group says goodbye to Tom and his wife and we walk back to the hostel.

5.40 we have a quick daily debrief about what we saw and learned today as I have to head off to dinner. I suggest they be aware of the perspectives of Leo and Tom today and think further about what it all means.

6.33 arrive at Tom's condo along the river. Even here they give condos stupid names like riverine emerald. He greets me dressed in a sarong and t-shirt. The view from his balcony over the river and far afield with Santubong mountain in the background is breathtaking. As we chat the call to prayer begins to blare from the loudspeakers of many mosques, they are not synchronized so after a minute there is quite a discordant series of calls overlapping each other. I am treated to beef curry with rice and vegetables made by Tom's mother-in-law.

Borneo expedition day 3

10 May 2017

6.18 up. Rush to edit my journal from yesterday. No time for breakfast.

7.28 out to meet the students.

7.36 we depart in the van with Rose for Bako National Park.

8.08 after a 24km drive we arrive at the car park surrounded by a rather squalid village of tin-roofed houses, called Bako.

8.30 we depart on three narrow fibreglass outboard boats from Kampong Bako and head

down river towards the sea. The park can only be reached by a 20-minute boat ride. The river has a lot of rubbish floating in it and the houses on stilts along the river banks look almost timeless.

8.45 We land on a sandy beach near limestone cliffs dramatically sculpted by erosion into fantastic shapes. We have to take off our shoes and wade ashore.

Immediately I see lots of living things. There are hermit crabs scurrying around. I pick one up and show it to some of the students. After a few seconds the crab will come out and see what is holding its shell, which is my fingers. The entire surface of the beach is covered in the little balls of sand made by sand bubbler crabs. They take wet sand into their mouthparts and filter out any edible particles and then deposit a perfect little ball of sand. They fan outwards from their little burrow and leave thousands of these little balls like some strange batik design all over the beach. But if one did not look closely, one would see nothing.

9 We are lucky enough to see a Langur monkey on the beach. This is very rare since they usually stay in the trees. The boulders and cliffs are encrusted with barnacles and tiny black mussels which from a distance look like a coating of seaweed. 9.30 reach park entrance building.



9.45 head out on trail led by Rose who stops every few feet to talk about a species of tree or whatever. And we are even luckier- we see a Bornean bearded pig near the visitor centre. It is quite tame and forages about taking no notice of us. It's eyes are so bright they look almost as if illuminated. The snout looks far too long for a pig, and they are indeed bearded. This almost totally obscures the dangerous tusks at the front.

10.15 huge excitement! (for me anyway) on a boardwalk through the mangroves we see wild Proboscis monkeys feeding quite close by. I can see their eyes and the facial features as they munch on the youngest leaves, quite indifferent to the presence of noisy humans. Alas they move off quite soon.

10.25 we start climbing the path up boulders and tangled tree roots past waterfalls as we climb the escarpment through the jungle. We walk past some Long-tailed macaques, they look identical to those in Singapore. They are also quite unconcerned by us. Nearby Rose points out a small wax structure on a boulder. It is a Stingless bee hive. The shape of its opening keeps out the rain. As we move on up into the forest I am surprised at how awkward and unsure most of the students are about walking over uneven terrain. Too urbanized.

Once we reach the top, which is a large granite and sandstone plateau, the environment is very different. It is quite sparse and arid with very different vegetation to the tangled jungle forest below. Here are several species of pitcher plants with their curiously modified leaves forming deep reservoirs that trap insects which the plants then digest. This supplements their diet in nutrient poor soils. Usually these grow in swamps and marshes, but here they grown on rocky, sandy ground. I find a large wriggling larva in one. I tip out the contents of another but it is not water as I have seen before. Instead a thick slime comes out like a bowl of snot. Charming.

12.30 we reached an impressive granite cliff over a beach on one edge of the peninsula.

The view is stunning, but it is so hot I prefer to sit in the shade. We have our lunch. Many of the students still spend seemingly half their time posing for silly photos to post in Instagram. This is verging on the inward-looking bubble I was worried about. I hope they will look outwards more to see the amazing wonders all around. There is something to see or discover at every turn in Borneo. Giant ants here, slender lizards on the rocks there. Weirdly eroded patterns in the rocks unlike any I have ever seen before.



1.10 we are stranded on the beach because our boat was taken by others. Other boatmen spread the word. But this gives us more time to look around and we see some small fish and mudskippers in the stream coming down from the interior and meeting the sea. There are also patches of ugly rubbish piled up, I assume, by the tide. In the end three boats come at different times to take up to five of us at a time.



1.30 I leave the beach and we are taken back to the visitor centre. The ride back is very pleasant because zooming along on the boat provides a refreshing breeze after sweating in the forest and plateau all day. Along the way the boatman takes us by a famous limestone outcrop jutting several meters out of the water which has a large mass of stone perched on a narrow base at the water line. One day it will topple into the sea.

We rest for a bit back at the visitor centre. Rose wanders around looking for things (the right thing to do) while we sit around on benches.

And she strikes gold- she finds a large and beautiful tree snake very low and close and so we can walk over and see it very close up and take pictures. As it very slowly moved up the bushes a pair of Bornean black magpies are chirping their alarms and hopping down close to the snake- trying in vain to scare it away. They probably have a nest above which the snake can smell. Their cries are in vain however. Snakes cannot hear. Eventually the snake climbed so high it was gone so I

don't know if it found the nest.

2.10 we set out on another trail for a short walk as there is little time until our boat comes to take us back to Bako.

But again we are gloriously rewarded. Rose spotted a colugo or flying lemur curled up under the low branch of a tree. It seems more colourful than the ones in Singapore, with whitish spots on its otherwise magically camouflaged back.

We had not walked far when the students disturbed a large gecko which ran up a wooden post and hid on the back side. I carefully looked around to see where it was and with a rapid swipe of my left hand pinned it. I then grasped it firmly behind the neck to avoid being bitten and showed the students. Its tail was flattened and made wider with skin flanges and later I found that it had folds on its belly that can extend outwards like wings. It was a flying gecko. Rose had never seen one, neither had I. What an amazing creature. Nearby is a young Malayan water monitor sunning itself. These are so common in Singapore that we don't look at this much.



*

Our time was up so we headed to the boat dock. As we walk back the last 4 or 5 of us are extra lucky. We spot a troupe of silvery langurs feeding on leaves in a tree along the path. A

final treat from Bako.

This has been an excellent excursion. How lucky and privileged we are to have seen such extraordinary creatures in the wild and so close up. This could only happen in an effective nature reserve, where the animals are not hunted or persecuted by man. They simply go about their lives and we are able to get a good look at them. Anywhere else we would most likely have seen nothing since any sensible animal would run or hide on the approach of humans- and a noisy group of chatting, laughing and brightly attired city people are surely the easiest to spot and avoid. 3.05 we reach the dock at Bako village.

3.40 I'm dropped off at my hotel to get cleaned up for the next event.
5.15 I meet the students at their hostel and we walk to a nearby café to hear a talk by Dr Jason Hon, from the World Wildlife Fund, who is involved with the Heart of Borneo project.

7 we walk back to the hostel for the group discussion of the day. Until 7.50.

Borneo expedition day 4

An unexpected adventure

11 May 2017

8.29 rush down to check out and be picked up by the team to go to airport.

8.45 fetched from hotel by the van which seems from the outside to be bursting with students and bags. We completely fill it; there are no spare seats.

At the airport Rose helps us through check-in and we warmly say goodbye to our amiable guide to Kuching.

Since we arrived at the airport nice and early, we have a long wait for our flight. At the food court I spot something new (to me) called Mee mamak, a Malaysian version of mee goreng. Rather sweet. Later Athira told me we have it in Singapore too. Today we will fly to Miri, a town at the northern corner of Sarawak, near the border with Brunei.

The flight takes only about 45 minutes. We will then take an even shorter flight to Mulu, site of Gunung Mulu National Park about 100km to the east, on the other side of Brunei. Mulu is famous for its elaborate network of massive caves. All of the brochures and tourist books boast about it being a UNESCO World Heritage Site. I have to say this title doesn't impress me at all. So what? Who cares if a committee somewhere has voted to confer a title on a place? This is no proof of a site being wonderful. I think writers should praise a place by actually describing it, not by wasting space repeating UNESCO World heritage status. It doesn't really say anything about a place. I really don't understand the fascination with titles or awards.

11.10 Malaysian Airlines (MAS) says our flight is delayed. As compensation for this inconvenience we are given a meal ticket. But it's valid only at the two fast food chains here. Gah. I can see the small twin-engine turboprop sitting out on the tarmac waiting for us.

11.25 oh no! Our flight has been cancelled due to a fault with the aircraft! Suddenly all is chaos. What do we do now? They offer no other flights to Mulu today.

Eventually they offer to fly us instead to Miri later this afternoon and on to Mulu tomorrow morning.

We go find some tables to consider our options. Laptops, phones and notepads come out. The team kicks into action. It's amazing to see them at work. Checking details, different groups attending to different options and problems, getting info needed to decide what to do next. Does another airline fly to Mulu? Should we just go to Miri instead and forgo Mulu? What from our itinerary can be salvaged if we go to Mulu late? We had a full itinerary there with three activities booked with guides, and these are according to the park's timetable. If we miss them, we lose them.

Update. There is far too much going on to record. But in a way this intense experience is rather fun or perhaps I should say exhilarating. Some of the students expressed similar feelings. The emergency has drawn the group more tightly together I suppose or infused everyone with a common purpose.

Update. MAS now say that accommodation will be arranged by their colleagues in Miri

and the staff here won't know where we will be staying. I have a bad feeling about this.

Update. Ok. After much planning and deliberation here is what is happening. We will take the flight to Miri this afternoon and fly on to Mulu tomorrow morning and hope to see as many of our planned sights there as possible. We will arrive too late in Miri to see anything there.

The airline has booked a hotel for us tonight and will transport us from and to the airport for free. The students have taken care of 100 other matters I've not detailed here. Having seen the way the expedition team calmly got to work and sorted all of this out, I have to say I am proud of them.

2.45 we board a twin-engine Boeing 737-800 for flight MH0642 to Miri. I hope this flight doesn't vanish without trace like that notorious MSA Flight 370 that was never found.

The flight path took us over the sea sometimes as it streaked at 800km/h northeast across the edge of Borneo. My cycling app Strava can still receive the GPS signal at altitude so I can see our speed and distance travelled live. I just have to be sure not to save it as a "ride" or my statistics such as how many kilometres I cycled this year would become invalid.

As we made the approach to land one could clearly see the thick multi-hued carpet of virgin forest next to vast tracks of cleared land and plantations. The latter look so sad and ugly in comparison.

3.50 touch down near the coastal town of Miri. It's a small city with a population of about 235,000. It grew up after the discovery of oil here at the start of the 20th century. When the Japanese launched their offensive on Southeast Asia, Miri was their landing point on Borneo. They wanted the oil. Then the allies bombed the hell out of it to cut off the oil for the Japanese.

So we have landed in Miri. One of the first things I notice is a large sign with a list of prohibited goods that may not be imported. These include "all goods from Israel" huh? "parabolic antenna" what? and "lightening arresters containing radioactive material." Phew, good thing I left mine at home.

So now what? We ask around and are directed to one of the check-in counters to find out about our transport and accommodation. The airline staff at only one desk take a long time to fill in little forms by hand that provide a taxi ride to a hotel, the hotel booking, and a taxi journey back to the airport. All our passports and boarding cards have to be collected, then returned.

4.58 at last I'm in a taxi heading to the imposingly named 'Mega Hotel' in Miri. The students follow in a small fleet of red taxis, two students per taxi as the airline coupons prescribe.

The drive lets me have a look at this part of Sarawak. We pass what look like housing for the poor. Perhaps Malaysian version of HDBs? Most are single storey terrace houses on low cement stilts. All painted the same pastel yellow in two shades. Each has an identical satellite antenna pointing skywards. The ubiquitous motorbikes stand around. Here and there are the usual abandoned and incomplete building projects such as a large brick building with no roof with the wooden scaffolding still clinging to the walls. Apparently the site has been left standing for some time.

The roads are pretty. They have clearly worked hard to make them so. They are either lined with trees or flowers. But most buildings and structures have that shabby, run down or deteriorating look so common in Malaysia. Further on one sees lots of Chinese shops. It reminds me of Johor and Plentong where I have spent a lot of time exploring (actually I got lost) on my mountain bike.

I have almost unconsciously overlooked the fact that most signs and adverts here are in English. Indeed there is a very high percentage of English spoken here, more so than other parts of Malaysia I have visited. I think everyone I have met spoke very good English.

5.15 I arrive at Mega Hotel.

5.55 the very lengthy check-in process finally done. Lots of forms, passports in a large orange stack, except for my red burgundy one, signing forms etc.

Hmm. I think this might as well be called the Mega Shabby Hotel. But it will do. I pop by the restaurant to see what free meal is provided courtesy of the airline. And what a delight! There is a special menu for victims of Malaysian Airlines who are no doubt regularly exiled to this place. The menu bears a sticker that reads “MAS STRANDED SET MEAL MENU 2017”. Yes, we are stranded. This happens so often that they have a special menu. The students head out to see the sunset here which is said to be very beautiful.

So the plan is, we head to the airport tomorrow morning at 7am (so we can enjoy sitting around an airport for another two hours). And then hopefully MAS can manage to fly us on the short hop over to Mulu. Then, as the airport is right next to the park entrance, we will hoof it over as fast as we can, dump our bags there without checking in, and head straight to the first caves. We have called and emailed the staff there and they have kindly agreed to guide us at a different time since we were delayed. Then we will have to rush to another cave system, explore it, then wait to witness the mass exodus of bats at dusk and then, if it is at all possible, try to make the night forest walk. I'm sure something will go wrong but we will do what we can.

Borneo expedition day 5

Into the Heart of Borneo

12 May 2017

4.30 up. Edit journal and upload to FB.

6.45 down for breakfast which is decidedly not shabby. I think the students like this little luxury after their hostel.

7.15 taking taxis back to the airport. Fingers crossed all will run smoothly today.

I found a souvenir shop at the airport that actually had some antiques amidst the tourist kitsch. There were old Chinese ceramics and some old krisses, real blow pipes etc. I wanted to get something from Sarawak so I settled on a sarong that seemed to be a traditional design. And there's time to polish my book on Pfeiffer on my laptop at the café before we take off.

9.15 we board a small ATR 72-500. This is a twin-engine turboprop built by French-Italian aircraft manufacturer ATR since 1989. It seats about 60.

9.37 take off. After a few minutes the random patches of small-holder farms give way to vast, vast tracts of palm oil plantations in straight lines with regular roads separating each geometric block. As this unvarying scene passes by mile after mile at our cruising speed of 457km/h I feel a little sick to my stomach. How many millions of forest trees and millions upon millions of animals were destroyed to make way for this disgusting oil? It's not just the orangutans that are gone.

9.50 finally the ugly palm oil plantations have given way to native forest. It's so varied, so multi-hued and undulating in comparison. It's wonderful! Could this be the corner of Brunei that we fly over on the way to Mulu? Brunei, so wealthy from its petroleum, doesn't cut down its forests and they are said to be in very good condition.

9.56 we touch down at a tiny airstrip sliced out of the forest at the base of the hills in front of a mountain range and walk a few feet to the tiny terminal building which is open to the elements. There is no baggage carousel, they just bring the luggage trolley over by hand and give the bags to passengers.



Deer cave.



10.16 we piled into cars sent by the park and are driven 5 minutes to the park visitor centre. We sign in and receive blue wrist bands to show that we have paid. Then we quickly dumped all our bags in one of the hostel huts and away we go.

Our guide is named Ismail Ballang. He is from the Penan people. Trained by his grandfather as a “herbal doctor” he guides tourists twice a week. He speaks good English which he says he has picked up from tourists etc.

For our first excursion, we are heading to the famous Clearwater cave.

10.45 we step down to the narrow and fast moving river and board a very narrow long boat c. 30 feet long with a narrow front and a small outboard motor at the stern. There is a driver and another young man at the front to help steer. The boats are very low and narrow, no doubt good for shallow water but surely easy to overturn if an unwary person stood up. The boat is pushed out into the stream and the motor grunts into action and we are soon speeding at 15km/h up the narrow winding river between dense forest alive with the calls of birds and insects. The cool river air blowing past is incredibly refreshing in this climate.

At one point we pass plain unpainted wooden houses on stilts along the bank with laundry drying on the verandahs. A woman in a sarong stands washing clothes in the river. I wave and she smiles and waves back. It’s a fleeting glimpse of the lives of real humans.

10.56 we arrive at the village of Batu Bungan where the Penan people live. Our guide was born here. The Penan were a nomadic mountain people who were traditionally hunter gatherers but most settled in this and another village in the last generation or two. They speak their own language.

There are still 300 Penan people living as nomadic hunter gatherers in the mountains. They are said to be the last forest nomads in this part of the world. So not far away from us were still “wild” humans living the way our ancestors did for 200,000 years. Like most such hunter gatherer tribes, the Penan have a sort of animistic belief system. They believe in lots of spirits in streams, trees, animals, rocks etc. But this is not exactly a religion. They do not believe in a god or any proscriptive set of things they have to say or do or believe without evidence or by compulsion of their leaders. Such belief systems are very likely the original form of human belief systems before the more recognizable religions emerged in the last 7,000 years or so since the advent of farming and domestication.

There are about 10,000 Penan people today. The villagers live by hunting, fishing and gardening. They are almost all Christians now as a few cross motifs in their handicrafts indicated and as Ismail rather annoyingly revealed when he several times tried pushing his religion on us. Christian missionaries began converting the Penan in the 1930s. The big modern monotheisms always seem to eradicate the more ancient animist systems, either by force or persuasion and now almost the entire earth has seen the extinction of the ancient local belief systems that once characterized every tribe, almost every valley and village, in favour of the new mass religions. There is clearly something about them that out competes the more ‘primitive’ systems. If the last 300 Penan hunter gatherers were to move to villages or die out, this would be as tragic as the extinction of the orangutan because an unbroken way of life stretching back to the dawn of humanity would thus go extinct forever.

In the village there are not just simple wooden houses on stilts but also some long concrete ones around a playing field. No doubt some deal was done for those somewhere when

it came time to make this place a national park.



We have barely entered the village when someone calls out ‘look at those butterflies.’ I turned to the right to see something on the ground near the stilts of a house and my heart leapt! It was the Rajah Brooke butterfly! It is one of the most beautiful insects in the world and was discovered by Wallace in Sarawak in 1855 and named after the Rajah Sir James Brooke. Wallace stayed 539 days in Borneo, from 29 Oct. 1854 to 10 Feb. 1856, longer than any other island during his voyage.

Here were two magnificent examples of this butterfly, their colours so vibrant they seemed almost to glow with their own illumination. The large wings are in impenetrable black with a series of about seven iridescent green triangles pointing back towards the abdomen. The eyes seem black but the neck is a bright crimson. When seen from the side the black body also has streaks of brilliant red with tiny flecks of blue there and under the wings. The butterflies were even bigger than I expected. They were drinking salts from the mud and flapping their wings and so they allowed me to kneel very close to watch and photograph them. I was so excited I couldn’t help giggling. After so many years of admiring this beautiful butterfly from illustrations, here they were alive and free and wild in Borneo right in front of me. It is a moment I won’t forget.

Ismail took us to the centre of the village where there was a covered pavilion with long tables. A half dozen Penan people were there to sell handicraft items to tourists. There were woven mats, rattan rucksacks such as they still use, and mini blow guns with strange little wooden bayonets on the end.

Although these items are made for tourists, they are still essentially ‘real’- in the sense that they are items made by the people of the village with their traditional local materials, and some of them are very close if not identical to items the people in this area still use, such as the rattan rucksacks.

As I looked at the various items, an old man came walking into the village wearing only a pair of shorts with one of these rattan rucksacks on his back, though his was one of the few I saw that appeared to have been woven from plastic strips.



Over his shoulder was a long blow pipe! It too had a short bayonet on the end, but of steel. At his side was a *poeh* (parang) in a wooden scabbard, secured around his waste only by a single thin piece of rattan. Two small dogs came up to greet him. Ismail told me later that such men go hunting in the early mornings for animals which they eat or sell to other villagers. It takes two poisoned blow darts to kill a wild boar. An elderly couple sitting quietly watching us vulgar tourists, had large holes pierced in their ear lobes, but rather higher up than is usual.

I wanted to get one of these nice handicrafts so I bought a small rattan bag to replace my cotton tote bag for carrying my things during our day excursions. Ismail told me the pattern woven into it represents Tiger footprints. He also says his surname means tiger. I am a bit suspicious of this since tigers have been extinct in Borneo for about 10,000 years, far beyond the memory of any group or tradition.

11.24 we are herded back on to the long boats and head further up river. As we weave around corners it is impressive how the driver manoeuvres such a long narrow boat against the currents. There are frequent submerged logs and rocks. They slow down as we pass an enormous limestone cliff which is stained mostly black and full of holes from erosion like a rotted tooth. We come to a fork in the Melinau river and our boats take the right one, this is the Clearwater river.

As we chug up this river I feel so lucky and privileged to be able to experience this extraordinary place. But at the same time that feeling is tempered with a sense of urgency because all of this is so fleeting and soon it will be only a vague memory.

11.34 we arrive at the final landing spot which is completely shaded under the forest canopy. There are rest huts and benches here for tourists and many long boats and their crews wait in a quiet pool in the river nearby. Their decadent passengers no doubt stomping all over the caves above.

The caves of Mulu are in a narrow formation of hard limestone that just skirts along the edge of a much larger formation of sandstone behind it that makes up the mountains of the interior. The limestone was formed under the sea millions of years ago as microscopic organisms died in their billions over the years and accumulated and were later compressed into stone. Much later as tectonic forces moved and squeezed, the limestone bed was curved upwards on one side and bent, causing fractures and faults. The whole formation was eventually uplifted to make dry land, part of the island of Borneo. But limestone is easily dissolved by rainwater, especially rainwater charged with lots of carbon dioxide from tropical rainforest growing on top of it. The water seeps into the cracks and faults and over millions of years dissolves away tunnels inside the limestone. This is the source of the great caves of Mulu. One of them is made much bigger by the collapse of a great part of the ceiling. The remaining roof is the overlaying layer of limestone that is harder than the layers below, thus forming a strong roof. But given millions of more years the result is inevitable, all of this limestone will eventually dissolve and be washed away.

11.40 we start our ascent of 200 steps to Clearwater cave. It is by some measures the largest interconnected cave system in the world, 207km so far are known. It has the longest underwater river in southeast Asia.

As we climb up stairs through the forest Ismail sometimes stops to point out interesting plants. Only a few of the students at the front hear what he says. Most are further behind and lost in their own conversation. I try to speak to all of them from higher up the stairs to explain the tree at hand- it is a young strangler fig. It grew down from a seed deposited in a bird dropping from above. Once it reached the ground it puts down roots and then grows up the host tree. It grows around it too and eventually, having used its host to gain height and access to the precious light, its host, entirely encircled, is no longer able to grow (trees grow by expanding outwards) and so the fig, in effect, strangles it to death. Eventually the host tree will rot away and the strangler fig will stand alone as a hollow tube or column, a sort of silent memorial to its fallen host.

We reach the first cave. It is huge. There are swiftlets dashing in and out of the gaping entrance festooned with plants and vines and ferns. Dripping with moisture it is green with algae. We take cement steps down into the cave. At last I get to use my powerful (and far too heavy) torch which I have for mountain biking at night. It bursts into light and must be about 80% more powerful than any other light around, which is quite fun I have to admit. Its beam can light up any part of the massive cave, no matter how high or how far away.

Ismail points out some bizarre shapes in the rocks. They look to me at first like a

miniature version of the Giant's causeway in Ireland with its octagonal columns of basalt that are so regular they look almost man-made. But these are tiny, narrower than a pencil and they point in the direction of the cave opening. Supposedly these are the result of cyanobacteria colonies in the rock that leads to this strange pattern of erosion. I simply can't describe this. It looks like some CGI effect for Mordor in Lord of the Rings.



Further down into the cave we come across some bones from a wild boar that fell down into the cave, judging from the accumulation of deposits around and on them, thousands of years ago. Several are clean, a clear sign they have been handled by humans. One can see some ribs and leg bones, some embedded in the cave floor now. The longer I knelt there looking at the bones, the more I saw. A jaw became visible, it was so embedded and flush with the limestone that one did not see it at first. There were three or four molars and a large incisor.

On we go deeper into the cave. All around us are limestone formations in the most astonishing shapes. Not just stalactites and stalagmites but what look like massive flows of rock from a cavern above that have become frozen. Some look a bit like frozen yoghurt that has been squeezed out on the walls. All of this is from dissolved limestone in water being left behind drop by drop and trickle by trickle, over millions of years. And the overall impression of this place is that the cave is simply huge beyond belief.

12.42 we emerge again into the light and the forest and then walk back down again.

12.50 we reach the rest area at the base. A rest is part of the programme but I used the time to learn from Ismail about the Penan people, and other things about this part of Borneo. I tried chasing a large brown butterfly to photograph it but it would never settle on one spot. Until, that is, it settled on my phone itself with its wings blocking the lens! It drank from my sweaty fingerprints and then, without so much as a by your leave, fluttered off again.

1.00 we head back down the river in the longboats. We go faster with the current than against it, my cycling app Strava shows we are going about 24km/h.

By 1.15 we have already returned to the visitor centre. There is a canteen for lunch. I scan the menu for anything actually local to this part of Borneo and there is indeed one item 'Taste of Mulu'. So I order this. It comes with rice, some excellent vegetable curry, cabbage, satay, slices of tomato, cucumber and pineapple and – something very different. There is a pile of glossy bright green veg in the middle. And looking closely, its leaves looked just like ferns. In fact it *was* fern. It is called here Paku. This was a type of fresh edible fern from the local forest! It was very good though if one chewed on it too long it took on a slimy texture that would coat the mouth in a rather weird way. I asked one of the canteen staff about it and he came back a while later with a sprig of a different sort of fern, telling me this one was also edible.

Lunch finished the students are happily chatting away and joking together. Right next to our table is the gift shop, though from the window it looks like they have some of the locally

made handicrafts. I go in to investigate and I found some wonderful things. There were small knives with long straight handles which the shop assistant told me was used for splitting and working rattan. In the same basket was a large parang in a wooden scabbard made of two pieces (right and left) lashed together with rattan. This seemed exactly the same as the one worn by the old hunter I had seen in the village. On the outside of the scabbard was a smaller sheath made of a different wood. This one was for holding one of the small knives called a *darbad*, for detailed work.

But far more interesting than these were some objects standing in the corner in a tall basket, not for sale, but as decoration for the shop. These were real artefacts, they were antique spears and a blowgun with a steel bayonet. They were all made of ironwood which is surprisingly dense and heavy, close grained and a rich dark brown. I wonder how old these were?

At 2.35 we depart for Deer cave which is 3.2km away through the peat swamp forest on slightly elevated boardwalk, again led by Ismail. Because of the unstable substrate, many of the trees here have buttresses and air roots, but they were not mangroves.

Along the way we encountered some amazing insects. Most common are reddish millipedes. There was a strange looking hairy caterpillar that looked a bit like a xmas tree-but poisonous. I found a little snail that was bizarrely flat in cross section. In the evening I found a very large one that seemed to be the same species. Most striking perhaps was a very large stick insect. When touched it raised a hind leg and held it in the air to frighten its attacker. A few more Rajah Brooke butterflies fluttered by. In a crack in a fallen tree we saw a large black scorpion. A tiny pigmy squirrel was scurrying high up one of the trees. I don't think I ever saw such a small squirrel. The trees were just the opposite. Some of them were true giants. To stand right next to one is quite interesting. Before you is a living thing 1000% bigger than you. And it is home to hundreds of epiphytes and parasites and endless insects and birds and so on. There were also beautiful flowers. Ismail stopped to show us some of "his" herbs including ones used to cure stomach pain, diarrhoea and high blood pressure. He told me that they use the word Dyak still, as a general word for the people of the interior. That is the term Wallace always used and indeed was still in use when David Attenborough came on his first expedition here in the 1950s.

We rest for 15 minutes before heading up to Langs cave which we enter at 4.12. This is smaller than the last one. We walk into the narrowing tunnel and the ceiling gets quite close. In some strange hollows or holes in the ceiling we see a tiny insect-eating bat taking shelter all alone. I could see its little nose wrinkling as it probed us with inaudible sonar. Nearby were some birds' nests on the ceiling- they looked like they were made mostly with moss, not the saliva sort that people make that strange delicacy from, birds' nest soup. Next we see some extremely fine filaments hanging from sections of the cave like hair. These are the traps of the Sticky worm. The slightest breath of air through the caves makes them bend and sway. Then we reach a much larger gallery where the cave opened up into a large open space.



At 4.40 we entered the much more spectacular Deer cave, so named because deer used to visit it to lick the salt. They don't anymore now that humans frequent it. Twelve species of bat live in the cave. We enter under a low hanging ledge carved out by a river long ago. Once you come around a bend and the main opening hall is suddenly before you. It is a moment beyond description. It was one of most awesome spectacles I ever beheld.

I could not believe my eyes that the cavern could be so vast. One could not see the ceiling clearly because it was so far above, and the gallery was so long that one could not clearly see the end. It was the biggest 'place' or covered space I have ever seen. It is said to be the largest enclosed space in the world. Just the mouth of the cave is 174 meters wide and 122 meters high.

High above parts of the ceiling are black. The guide says those are bats. But they are so far away one cannot see them, just a black colour over a large area. One can hear a distant chattering from them. But down below where we are is manifest evidence of the bats above. Below the bats is, of course, guano. Lots of guano. From a distance this black substance which has rained down on the rocks from above looks like chocolate frosting. But as we continue on deeper into the cave you come closer to some of the accumulations of guano and the smell is not to be recommended to the faint of heart. The reek of ammonia is at times almost choking. And when you get really close to the guano you see the crumbly, loose and glossy texture of it. And you also see that it is alive and seething with a multitude of cockroaches and other insects. Some of the guano deposits are from colonies of birds. In these areas, if you look closely, there are many feathers and pieces of moss from nests and eggshell fragments, and not at all uncommon are unbroken eggs (at least they looked whole).

The guide spots some 'glow worms' and tells us to switch off our torches. I'm invited to "try it". It is in fact a type of centipede. I am supposed to pick it up from the guano. So I do and wow- from the darkness where my hand must be there suddenly comes a bright green light from the body of the centipede. In fact some of the glowing green comes off on my fingers. The more I agitated it the more it would glow. But it lasted only an instant and dimmed quickly. In some places the guano is slowly encroaching on the walkway and the hand ropes are dark from it. After a short time you cannot smell it anymore. Next we saw some not-too-recent animal footprints in the guano, a Mongoose the guide says. And everywhere in these enormous caverns the strange shapes of slowly growing limestone deposits and water erosion. I forgot to mention that the caves are all illuminated by light fixtures so we really didn't need to bring our own lights as we had been told.

On the walkway there is the body of a dead bat, now covered with white and yellow mould. Next we see a long broken old bone near the path. It's said to be a deer bone. A little stream or long shallow pool follows the walkway for a bit. In it are many tiny cave crayfish, they are totally colourless. I also saw a small crab. For an instant I saw something else- but I have no idea with it was. I think it looked like a small pink blob with short tentacles on it that, when my light shone on it, disappeared into the mud with a quick motion leaving only a little cloud of silt.

As we turned a loop and headed back towards the entrance of this monstrous cave, the light from the entrance illuminates long strings of water droplets falling from the ceiling. They fall so long down this great distance, and are so well illuminated against the blackness of the ceiling and walls behind them, that they seem to fall in slow motion. It's a magical sight and everyone stared in amazement.

5.45 we emerged from the giant mouth of the cave. There is a strange species of plant that lives at the opening that has only one big leaf. In ten minutes we walk back down to the rest area where many other visitors are seated along a semicircular array of benches in front of the rest hut to await the emergence of the bats at dusk.



At 6.15 the bats begin to appear in waves high above us. There must be thousands of tiny bats in each group. They come out strung into long, thin streams. As they move, these streams of bats undulate in a serpentine manner that is incredible to see. It looks coordinated but of course it isn't. Each bat follows another bat or two in front of it. Binoculars are not much good as the bats are so small and moving so quickly. After a few minutes another group appears snaking its way quickly over us and then breaking up as the bats peel off to hunt insects in different parts of the forest. Eventually a Bat hawk appears high in the sky, but I did not see it chase or catch a bat.

By 6.29 it's over and the guide says it's time to leave. We have a long walk back along the forest boardwalk as the night darkens. I take my torch back out of my rattan bag and look for anything I can see along the way. And there's lots to see. Not least are the frequent little bats wheeling this way and feasting on insects. How many tons do they consume a year? Or a century? It boggles the mind. And much of the matter snatched from the forest in this way ends up as guano on the floor of the caves.

Along the way back I saw many more interesting insects including the same sort of chunky stick insect, two species of large geckos and the same scorpion again. I shined my light in at him in his crack in the log and he obligingly came out turned around and went back in again. He was not just black but had a sheen of blue on his thick claws. The forest is much noisier than it was during the day. There are calls from all around. The loudest are from frogs that keep chirping with what sounds like a "wok wok wok!" These were often very close but no matter how carefully I searched, I could never see one. (Later back at the hostel I went off the boardwalk and started pulling leaves away to find one I could hear calling and for one brief instant I saw its legs as it leapt into cover. It was a dull grey.)

I was the last to get back to the park centre at 7.15. Most of the students were already in the restaurant. As I walked up, Andrea told me that there was a huge beetle in the ladies' room. She kindly went in to check that no one was there so I caught what I guess was a female rhinoceros beetle and took it out to take a photo and show the students. It was a beast and could almost push my fingers away with its powerful horny legs.

7.35ish we had dinner at the park canteen. The food was very good.

8.12 we have our daily debriefing about what we saw and thought about today. But we saw far too much to so quickly digest. I explained the history of the limestone, the reason the bats fly in these massive formations and a few other things.

8.55 I take a Marriott shuttle to the eponymous hotel and arrive in 5 minutes just as it starts to rain.

Wow- what a place! It's a bit grotesque that there is this massive and luxurious resort in the middle of the forest. It's tastefully done though and all the buildings are high up on stilts and many of the original old trees are left all around next to and between the buildings so that it really feels like one is in the middle of the forest. For some reason I was upgraded to a suite. Fine by me. Strangely the desk in my room contains a Gideon bible and the book of Mormon. The hotel in Miri also had such a bible. This seems odd for a Muslim country like Malaysia. Anyway, that's the end of a very eventful and extraordinary day.

Borneo Expedition day 6

On to Brunei

13 May 2017

5.30 up. Amazing suite. Place is huge. Pool. Dining hall. Very posh indeed.

8.50ish Check out. As I wait, I talk with the hotel receptionist. She is also Penan, and comes from a village about 40 minutes downstream by long boat; she was born in a longhouse. She speaks Penan, Malay, Iban and English. Iban she says is the lingua franca of these parts.

9.10 leave hotel. I chat with my driver who comes from yet another tribe but I could not catch the name. I ask him about the Penan who still live as hunter gatherers in the mountains. Has he seen them? Oh yes he says, but they are shy and avoid outsiders. Are they dangerous? He laughs, oh no. Are they naked? Do they wear clothes? Only loin cloths. Of cloth I ask? No, of bark cloth. Incredible!

9.15 at the airport I find Keng Gene at the small airline counter and guess what? Our 10.10 flight has been delayed to 12.15.

9.22 KG and I arrive back at the park centre where the students are in the canteen. A young local man is cleaning tables nearby so I go over to chat with him. He is also Penan. Are all the people working here Penan I ask? No, there are people from four tribes including Iban. He too was born in a longhouse. He says he likes working here. I ask about his schooling, was it in his village? No, it was in another place. He was sent to live in the school and returned home once a month.

The 'Discovery centre' or rooms of explanatory info panels about the caves and wildlife next door to the canteen are excellent, really top notch. Dian Shao was talking to a local man- I am delighted to see this. It turns out that this man was the person we saw abseiling down the mouth of Deer cave the day before. He is also Penan and works for the park. While hanging from a rope like a tiny speck at the opening of the massive cave he was in fact taking some film sequences for a National Geographic Society documentary. Was he afraid? Was it difficult? He smiles, it's very easy, he says.

When we are driven back to the airport, I ask our lady driver some more questions. She is not Penan but from the Berawan people. She says most of the people in the area are Christian. She was also born in a longhouse, and it has a name, Langtrawan(?). She says 700 people live in it! All of us in the car are astonished. Amazing, one cannot talk to local people enough. We have barely learned anything at all, but the few things we have, have come from this.

10.50 we arrive back at the airport. The pretty receptionist is yet another Penan. 'Thank you' in their language sounds something like 'Jiankaneen'. I try this a couple times at the shop or canteen and get a big smile each time, though I think it's more at my terrible pronunciation than anything else. But people like it if you make at least some effort.

There is a long and terrible story about the Penan vs. the logging industry and the Sarawak government which is part of the larger back story to this place. They are losing and the fat cats are getting richer from the destruction of the forests.

12.10 time to board the plane. As we do a blast of hot jet wash hits us in the face, yikes. 12.29 takeoff. 12.49 landed back at Miri. But our bags never appear on the carousel. We wait and wait and around it goes, empty.

1.13 bags finally appear. Strangely, there are three different digital clocks over three carousels, and each shows a different time! And the best is ten minutes off the actual time! Our chartered bus is waiting to drive us to Universiti Brunei Darussalam (UBD) in Brunei.

1.30 we depart after getting some snacks.

2.17 we arrive at the border. We have to alight and show our passports to a Malaysian border guard in a booth. Back on the bus.

2.35 at Brunei border control desk. Another mix up. No visas are needed for the two of us who are not Singaporean. UBD said we did. UK citizens just get an automatic 90 days for

free.

2.50 on our way again. This is my first time visiting Brunei. So far there is nothing to see. We are entering at what seems an obscure rural land crossing although there is a lot of traffic. The border control office was quite dilapidated, not what I expected.

Not yet through the border complex, our driver stopped and took a form into a large building. That was 27 minutes ago. What on earth is going on?

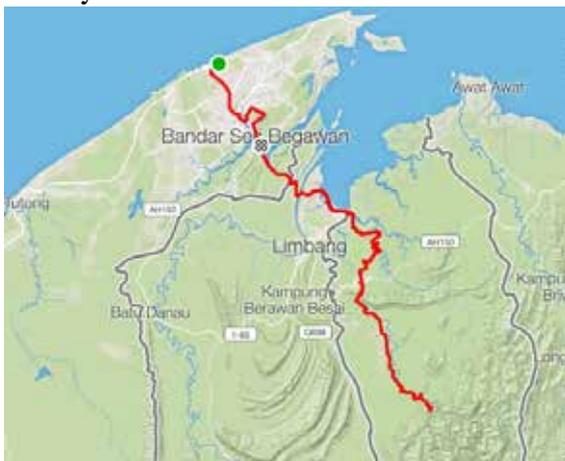
3.22 he's back! No word of explanation, but then he seems to speak very little English. So now we are really on our way into Brunei.

3.31 yikes! The roads in Brunei are terrible! I am bounced all over the place by the badly patched potholes. With the suspension on this old bus I wouldn't be surprised if someone gets motion sickness.

3.55 stop again. The driver points to a shop where we can get SIM cards for our phones. In fact he is mistaken, and about the next shop and the next. The fourth (along the same street) has them but the price is exorbitant so we skip them and get back on the bus.

5.15 we have reached the spacious and sprawling modern campus of UBD and are warmly welcomed by student 'ambassadors' and their lecturer, Mr. Harris Ar-Rafi Bin Mohd Zaini. Our next adventure starts very early tomorrow morning- virgin forests to explore and much more.

Borneo expedition day 7 Into the heart of Brunei 14 May 2017



Route of the team to Kuala Belalong field studies centre. (Strava)

5.33 I arrive at 'The Core' to find the students given a rather Spartan catered breakfast of fried eggs, bread, jam, cereal, tea, coffee and shockingly - Nutella! Palm oil spread! The devil's own deforestation juice. Perfect fodder for a group here to examine conservation and deforestation.

6.07 we depart on our day's excursion to the remote Temburong District rainforest in a minibus for the jetty on the Brunei River with three students from UBD. The NUS students all sit at the back and the UBD students at the front and there is an empty row in-between. How are we supposed to forge ties between groups/universities like this?

So I talk to the UBD lads. They are very nice and happy to answer my questions. They say the population of Brunei is only 400,000. It's land area is five times as big as Singapore which has a population of about 6 million. I learn many things about their country. We pass a gigantic bombastic Islamic-looking building which I am told is the former offices of the prime minister. There seem to be more mosques in this city than anywhere I have been before.

Throughout the day I learn about Brunei from our nature guides and some of my students. Brunei is of course a sultanate and the vast majority of the population are Malays, and Muslim. Only about 10% are Chinese. Others are indigenous groups such as Iban. There are almost no Indians.

The country, or at least the sultan and government, are immensely wealthy due to the vast oil and gas fields discovered here in the 1930s. Hence the many immense mosques and public buildings. These are often on a scale that is just too large and showy to be beautiful. These all adopt Moghul, Arabian, neo-classical and other foreign architectural forms. There seems to be nothing distinctly Bruneian at all. Until recent years they only built houses over the water, so they

seem to have no local architectural styles or traditions of their own. There are also no old buildings or structures in Brunei, nothing older than the 20th century. This is odd for such an old country. The benefits for citizens of Brunei are considerable. There are no taxes for starts. They have free health care and free education. The currencies of Singapore and Brunei are fixed 1:1 and are even accepted legal tender in either country.

Recently Brunei is undergoing an increasing process of Arabization, the drift of the current Sultan. The entire country is dry- the sale of alcohol is nowhere permitted. Cigarettes have been taxed out of existence, though of course smuggling of both vices exists and an import allowance is allowed when entering the country. There are rumours of Chinese restaurants where one is served alcohol in teacups or tea glasses. I have never seen such a high proportion of women who wear headscarves, virtually all. This is a great change here from just twenty years ago I am told.



The Bruneian students I talked to seemed to know rather little about history or other parts of the world. I was asked “what are the best food in British? [Britain]” for example. And one had seen a documentary about Hitler that seemed to portray him in a positive light. I didn’t meet any who really knew who Darwin and Wallace were. But English is very widely spoken and everyone learns it at school, as well as Malay.

This might not seem like the logical destination for an expedition investigating nature and conservation. We were asked to come here by STEER that co-funded this expedition for the students.

6.36 The minibus journey was 22km. Luckily the rain has stopped. We arrive at a car park beside the Brunei river where I am amazed to see an entire town on stilts out on the water. I have never seen anything like it. This is Kampung Ayer (water town). It is home to 40,000 people and is the largest and oldest water village in the world. People have lived here for over a thousand years. No wonder there are no old buildings in Brunei. Starting in 2013 a new cement housing development has began which no doubt makes more permanent houses but they are also uniform and regimented and look quite soulless compared to the collections of older wooden ones, all slightly different. Everything needed for a town is here on the water. They have piped fresh water, electricity, schools, a hospital and a fire department.

Our group is met by guides Tom Chong and a Jeffrey Ann of Freme Travel. Mr. Harris from UBD joins us. After donning life vests we board a pretty shabby c. 30 foot fibreglass boat with enclosed cabin and a 200 horsepower outboard motor. These seem to be the local water taxis.

6.48 we depart and speed down the tidal river past the houses on stilts until, after a few minutes, the river narrows and then only nipa palms line the banks. All trace of humanity (almost) is gone.

7 the channels get narrower and more winding as we zoom along at 50km/h. Someone says this is like the boat scenes in Apocalypse now. Nipa palm has many uses. The leaves were used for roofing material in earlier times.

7.05 the nipa palm begins to give way to mangrove as we break out into Brunei Bay. We pass through Malaysian waters since Brunei is cut into two portions by its neighbour.

7.11 we pass back into Brunei waters, though there is no marker I can see. Just a few

scattered fishing boats can be seen in the distance. The boat meanders back through a mass of narrow river channels which are calm compared to the bay. They take the corners at speed and in the middle of the river. I wonder what they would do if another boat was coming from the opposite direction?

7.33 we reach the village of Bangar and alight at a quiet ferry terminal. This is the Temburong region with a population of about 10,000. Murut and Iban peoples live here. The population is 50% Malay.

7.46 we board a small minibus and head off down narrow windy roads through forested hills and along fast flowing rivers.

8 we see a longhouse, I think it is the first I have seen. It is also a very wide house. It's not like the wood and bamboo structures I know about from the 19th century. Now they have, of course, glass windows and modern materials such as a tin roof. I am told that inside there is a common corridor in front of all the individual homes. Traditionally Dyak longhouses were open their entire length.

8.11 we arrive at Freme Rainforest Lodge along the Temburong river. This is a very remote place and roads don't go much further. It's only long boats after this. The Iban village here is called Batang Duri. They also have a longhouse but I didn't see it.

Here on a nice covered verandah we are given a delicious light breakfast of fried banana (called Curcur pisang rather than pisang goreng, more orange and with more flour than one sees elsewhere), curry puffs and Pulut panggang (roasted glutinous rice rolls with some prawn material wrapped in banana leaf and pinned together with a toothpick). Just below us is the river and on the other side a steep bank completely clothed in dense forest.

8.50 we are to depart on long boats for a 45 minute voyage up the Temburong river despite the rain.

I have a bit of a panic. I have no rain coat or anything waterproof. My clothes, my hat and all my things will be damaged if they get wet- and I will freeze and be miserable. Almost everyone has already put on a lifejacket and boarded one of the long boats. The nice lady cleaning the tables must have seen my look of distress and asked if I would like some plastic bags? Yes please, I say with relief. I wrap up my wallet, fan, sarong and put another around my rattan bag and another over my panama hat. Aha I have a mini umbrella in my bag. I can't put this up as it would be blown away, but once I am seated cross-legged in the narrow little boat I open it and huddle behind it - one edge is on the floor and the other covering half my face. The driver starts zooming up river and the rain is battering away- but hitting me from the front. With a bit of squirming to stay under cover my little makeshift rain gear actually mostly works. The sides of the boat are so low that the water is inches away, and the river so swollen and choppy from the rains that a lot of water splashes in. And despite the brim of my hat, I have rain in my face and specs pretty much the whole time. It was pretty miserable. But we were pushing up through priceless virgin rainforest in one of the most remote places I have ever been. So I try to watch the forest but all I manage to see besides the beautiful entangled foliage are a pair of long-tailed macaques. At some spots, especially the many bends in the river, the currents and rapids are pretty hairy. The driver is very skilled at managing these and the frightening cross currents that could easily spin such a long craft out of control.

There comes a fork where the river Belalong flows into the Temburong. We turn right into the new river. It is a dramatically different colour, a fresh green compared to the dirty brown we have just left. And not long after we approach a landing jetty. Thank god it's over. This boat journey was an adventure in itself, and not without real danger.

9.20 we land at Kuala Belalong field studies centre deep in the jungle in the middle of miles of virgin forest and far from any inhabited area. This is not open to tourists so we are very lucky to be here as the guests of UBD. Everyone is soaked despite the rain wear some were lucky enough to have.

Upstairs in the forest hut research station we sit down for a briefing about the centre by

Teddy the centre supervisor. He looks terrified and is clearly not used to public speaking. We hear a bit about the history of the centre founded in 1990 and some of the amazing things found by scientists here.

10.20 we get a tour of the small centre of wooden cabins perched on stilts along the river bank. Upstairs is a laboratory where at the moment some American researchers are currently working. They showed us some of their recent collections of snakes, frogs, insects and a terrestrial flatworm. Their specimens are destined for museums. Wallace's work is still ongoing. The students appreciated this chance to get very close to these exotic animals and learn some things about them from real experts.



10.55 just as our tour ends the rain has stopped so we can proceed with our journey into the forest.

We board the longboats again and head a short distance down river to the national park entrance to hike to the canopy walk. 'Entrance' is bit of an exaggeration since there is nothing to be seen when we motor up to the spot in the river, just forest with some wooden steps coming down to the water's edge.

11 we start climbing up a muddy and slippery trail through the

forest with entwined roots criss-crossing the trail. It looks like the sort of thing I ride my mountain bike through all the time so I feel quite at home. There are long climbs of stairs past majestic trees wreathed with epiphytes and parasites of all kinds. Giant butterflies sometimes flit by us and insects fill the air with music. Our guides sometimes stop to let us rest or point out interesting plants such as rattans or the sprawling buttresses of the larger trees.

11.50 we reach the 'canopy walk' which is used by researchers investigating life high in the trees. It is not what I expected. It is just a series of scaffolding towers stabilised by cables fixed to the ground or trees. It is 40m high and 150 long. There are a series of perhaps six narrow towers made of metal pipes clamped together, with walkways between them. Only two people can be on any one of the bridges at a time. The guides say it is inspected daily for safety. This is not reassuring. If it were not precarious, why such frequent checks?

Inside each tower are a series of ladders which bend a little bit under your weight. As I climbed up and up, I soon began to question the wisdom of this. The tower felt distinctly unstable and the height was far more than I thought it was looking up from the ground. By the time I got to the top I could not take my hands off the rails and as the tower swayed a bit from side to side it was pretty scary. But since I had climbed so high to see the view I took pictures of the undulating forest that spread in all directions as far as the eye could see. I looked very diligently into the trees and branches all the way across and really didn't see anything. There were no birds and just four species of butterfly.

It's just a game for the students, the dizzying heights and so forth. We might as well go on a roller coaster ride for all this is worth for studying nature. On the way back down the last tower I did see something very interesting. There was a group of gnats (?) hovering and flying about in one space halfway down. They seemed to glow brightly white like fireflies. Once back at the start I looked around for anything else to find and spotted a plastic bucket under the boardwalk filled with rainwater which had mosquito larvae and many little frog tadpoles from jungle frogs. There was a dazzling reflective gold spot above the eye of each frog. I caught one that had already grown its hind legs to show the students how frogs in the forest have evolved to

lay eggs and produce tadpoles away from bodies of water. It was about the size of smallest fingernail.

1.04 we head back down the mountain. The forest sounds were very beautiful and I wanted to make a recording but I had to wait a very long time for the students to go far down the steps because the din of their laughing and shrieking drowned out almost everything else. It was a long wait. Once they were no longer audible the forest seemed to really come alive. I think we should all have sat down and been quite silent for half an hour. This would have really allowed us to experience the forest, at least in part. Just as I started to make a film of this magnificent forest, a new call came from the trees above, I suppose a bird but it almost sounded like a monkey calling. Magical. Whatever it was, it waited until long after the noisy humans were gone.



Unfortunately one of the students fell on the slippery stairs and bumped her tailbone. This was painful for some time but not a serious injury. Apart from this, I think only insect bites and sore muscles have affected the team so far. We've had no leeches, snake bites, poisonous plants or man-eating crocodile encounters.

1.30 we reached the river and took to the long boats again.

c. 1.50 returned to Freme Rainforest Lodge where there was a very nice lunch prepared where we had had breakfast. I had a very interesting conversation with Jeffrey, one of the guides. He is particularly intelligent and well spoken. He had pointed out a dammar tree in the forest and I was very keen to see it because I knew about dammar from my Wallace research, but had never knowingly seen one. Dammar is a tree resin. The pieces I was shown were in rock hard lumps.

These can be heated and made soft and pliable and then used like a glue or waterproof seal and much else. Some kinds have a pleasant incense smell when burned. The blades of the spears and knives I saw at Mulu made by the Penan were secured with dammar.

3.17 we head back in another minibus. Jeffrey and Tom tell me many more things about Brunei. They are frank with their opinions but at the same time clearly love their country, although ethnically Chinese. 3.40 arrive back at Bangar terminal.

3.48 heading back via the Temburong river at 55km/h as this boat has dual outboards. I am happy to see that since lunch my students have been chatting with the local students. I guess it took a while to break the ice. It's very good to see them learning from each other and making friends. They have a lot more in common than one might at first think.

3.55 I was just telling Tom that I might as well spend the time on the boat journey back watching the mangroves along the banks as we go on the slight chance I might see some Proboscis monkeys. Within seconds of saying this I saw a big orange creature high in a tree. It was a Proboscis monkey! Below it another made a big leap and landed bouncing on a lower limb. I was so excited! I shouted above the sound of the motor to the students to see it as well. I

watched with great attention the rest of the journey but saw nothing more. Just one brilliant white egret.

4.33 we returned to the jetty where we had started in the morning, and said goodbye to our amiable and helpful guides.

My overall impression of this day's journey is that it was a great adventure, we travelled to very remote places indeed. The long boat cruise up the swollen river in the rain was hard core expeditionary stuff. But alas we saw almost no wildlife. I suppose the reserve is just not big enough and too many people travel out there so that the animals have mostly retreated even deeper into the forests.

5ish we all return to The Core at UBD with the plan to do a quick cleanup and head, of all places, to The Empire hotel to watch the sunset and then have local food. These are the recommendations of one of the UBD students. My shoes and trousers are bespattered with mud and there is no time to get anything washed before leaving tomorrow.

5.53 in minibus again with the students and four UBD students to my hotel.

6.02 arrive and led by one of the local students, we walk through the enormous glittering lobby and past the toweringly bombastic columns to the gigantic pool complex (KG says it looks like it's for dolphins) to the paved shoreline where we sit and wait for the famous sunset. Alas there are too many clouds and we see little. (By the way, during my stay I never saw a single human at the pools.)

I thought it would amuse the students to see my crazy hotel room so I take them up for a little tour and unload all the freebies from the mini bar etc. on them. Mini-bar is a bit of a misnomer since there are only soft drinks and tonics.

7.15 we leave for dinner in the minibus.

7.36 arrive at a local restaurant our student guides recommended. Every female head in the place wears a hijab. And everyone stares at us, and especially me the only westerner. The place is full so, rather slowly, it is decided to try another branch of Aminah Arif.

7.50 back in the bus and head elsewhere.

8.11 we try another branch of Aminah Arif. Again everyone stares at us when we enter. But there is room and we settle at a long table.

I ask the UBD students to suggest something local. So we had Ambuyat which is a thick sticky colourless goo made of sago starch and eaten with a bizarre joined chopstick-like bamboo instrument called a Candas. One dips this in the curry sauce, then into the glutinous mass, then turning and pulling upward one retrieves a bite-sized mass between the prongs. (This was not easy and took me several tries not to just pull up and have nothing on the Candas. With a proper glob on the Candas it is then dipped liberally into the curry sauce and turned round. One then eats the whole in one bite. Another plate for dipping had spiced beef tendon. The dipping is done communally. None of the dishes were as spicy as I feared. It was a pleasant meal all round.

9.45 in the bus again, this time to a local supermarket because the students will not be supplied with a breakfast tomorrow.

10.43 finally dropped off at my grand hotel. Very tired.

Borneo expedition day 8

On to Sabah

15 May 2017

8.22 the students in the minibus pick me up so that we can make our visit to the Singapore High Commission in Brunei. How nice to see them dressed in real shirts and dresses. (The odium for most was too much and they discarded these as soon as they were back for the usual t-shirts...)

8.46 we arrive at the residence of the High Commissioner of Singapore. It is the largest of any Singaporean high commission in the world. It looks almost like a bunker.

The students were shown to a conference room where they sat around a long table. Tea was provided. I went out to look at some of the photos on the wall of the reception area. They all showed either Lee Kuan Yew or the current PM visiting with the Sultan of Brunei.

His Excellency Mr. Lim Hong Huai, High Commissioner for Singapore, and Mr. Raymond Chew the Deputy High Commissioner, came up unexpectedly and introduced themselves. We chatted for a while about our expedition, where we had been and where we were going. He was not sure what to say to the group so I gave Mr. Lim a bit more background. Then we joined the students in the small and terribly overly air conditioned conference room. Mr. Lim gave us a brief history of Singapore and Brunei relations. He may have said something about conservation.

Later the students asked some questions. Mr. Lim's answers were long and very 'diplomatic'. In the end he graciously thanked us for coming. I mentioned that we had a common friend in Ambassador-at-Large Tommy Koh who is the Rector of our College and a strong supporter of conservation.



10.25 back on the minibus and heading somewhere for lunch.

10.40 we arrive at 'The Mall' for lunch. This is the only mall in Brunei, hence the emphatic name. It's rather empty and not very interesting. At the food court upstairs I find a mixed rice stall with lots of local things- I decide to try everything so spoon a bit of each item onto my plate. Very good, and again nothing too spicy.

12.19 on we go back to our accommodation. Students are laughing hysterically about more selfies. I wish they were as enthusiastic about anything on this expedition as they are throughout the day by selfies and such.

2.25 arrive airport. We say goodbye to some of the representatives of UBD who came to see us off. They have been delightful and gracious hosts.

2.45 We gather the group together to have a quick pow wow regarding what to do in Sandakan. If we take our current flight we will miss part of the conservation content prepared for us by our hosts. If we take a later flight we will be able to experience it all but need another night there and arrive back in Singapore a day later. (This means I will miss the first mountain bike jamboree of the year in Johor I could have joined. Already booked and paid for, damn. But the expedition comes first.) The students decide they should stay on and fly out later.

3.55 board Royal Brunei Airlines flight BI825 for Kota Kinabalu, Sabah, Malaysia. The aircraft is an Airbus A320.

4.11 there is a prayer broadcast plane-wide in Arabic. Pious Malays hold their hands up during it. What an extraordinary thing. It is unimaginable to have a prayer broadcast on a European airline.

4.24 we take off and the glittering mosques of Brunei slowly slip away behind us.

4.47 landed in Sabah. 5.15 we board our chartered bus outside the terminal building.

5.19 on our way. Light rain.

5.43 arrive at their hostel and my hotel is a two minute walk away. This journey was so short we could have made do with taxis I think.

We all meet nearby on the boardwalk at the edge of the sea to watch the sunset. It's very beautiful and the colours changed from reds to oranges to reds and then back to orange. The experience is somewhat marred by the occasional breeze that blows the abominable stench from the water under us into our faces.

Then we set out to a local Pasar malam (night market) for dinner. It's a large market selling all manner of food and drink. It's very busy with people browsing, shopping, eating and so forth. I noticed one lady dump a large bucket of filthy water into the sea at the side of her stall. Some stalls sell dried seafood items by the thousands, sea horses, squid and that mysterious delicacy, sea cucumbers.

I see some things new to me so get Apam balik (Malay pancake), Kuih sawalah (glutinous flour cake with palm sugar). Both are very good though the latter is extremely chewy. Then for the mains I order a Martabak jawa. This is nothing like a murtabak in Singapore. The bread is a very thin dough laid onto a bath of boiling oil and the contents are placed directly onto it and then it is folded. Hence there was not nearly as much mass as I would expect. Tired at the end of another long day.

Borneo expedition day 9

Sabah coast to coast.

16 May 2017

Sabah is the northern Malaysian state in Borneo (Sarawak is the other). It is a distinct territory now as a legacy of once being British North Borneo. We are in Kota Kinabalu (formerly Jesselton) the capital of Sabah. The population is about 450,000, which is more than the entire country of Brunei. Unlike Brunei, the racial diversity here is enormous. There are many Chinese and other ethnic groups as well as the Malays. Walk to hostel.



9.50 eight of us take taxis to the Sabah Museum. The main exhibit at the entrance to this large though outwardly dirty museum is the 22m-long mounted skeleton of a Bryde's Whale. (The famous Singapore Raffles Museum whale skeleton is in a museum on Labuan.) Next is an extensive display of pressed plant specimens from the region. Other rooms house displays of paleontological and archaeological finds from the many caves in the region. There are stone cutting tools dating from between 16,000 to a staggering 235,000 years ago.

Another large room houses displays on maritime history of the region. There is of course also a section on head hunters. This includes not only swords used in head hunting but actual human skulls collected and displayed by various Sabah tribes of head hunters. There is also an old blowgun and reproduction bamboo darts. The next section displays basketry and the many woven products of Sabah including rattan rucksacks, sun hats and winnowing baskets. The artefacts of the many different tribes are all different, but all seem recognizably Bornean. Upstairs is a natural history section with a mounted Sumatran rhino skeleton and a stuffed skin. The latter animal, captured in 1987, was a very aggressive male who died shortly after capture. He turned out to have been shot by poachers on three different occasions as the wounds on his body showed. The Sumatran rhino is now almost extinct in the wild due mostly to habitat loss and greatly accelerated by poaching. Another room displays a huge range of ceramics including large burial jars used by one of the tribes of the region.

Next door is a small railway exhibit. There is c. 1910 locomotive built in Leeds and an old wooden carriage one can walk through, though the interior is gone except the lavatory.

The museum gift shop is also very good indeed. They sell replica blow guns, one of which was virtually identical to a real one, just the bayonet was crude. There were also Sompotons, a mouth organ made from a gourd with bamboo pipes. The bamboo pipes are secured to the gourd with strong and air-tight dammar. The book selection on offer was outstanding except for the edition of Wallace's *Malay Archipelago* which alas isn't mine but one of those countless reprints with an introduction by a scientist and Wallace admirer.

While I was at the museum with seven students, another group of four had a fortuitous adventure. They were on the boardwalk when they were approached by a boatman who looked a bit like a pirate. He was offering boat tours of the water town next to Pulau Gaya, just across from the boardwalk. They did not have enough time for his full tour, but they agreed to go on a shorter one of about 40 minutes for 40 Ringgits. The boatman took them on a speed boat across to the water town off Pulau Gaya in just 12 minutes. There they found a whole community of displaced people originally from the Philippines. There was even a school. They had no piped fresh water but by it in large bottles from the mainland.

I was surprised and delighted to hear about their excursion. This is exactly the sort of thing I hoped the students would do- to be curious and explore and find out about new things. Bravo to them.

12.20 take taxis back to hostel. Lunch in local kopitiam.

1.35 we all take a chartered coach back to the airport.

1.54 arrived airport. In one of the souvenir shops I spotted something that we had so far never seen- bark cloth. This was the cloth-like material produced by the Dyaks in older days. It is rather stiff but still flexible. This garment is of course made for tourists and I found it less soft and pliable than the large folded garment collected by Wallace in the 1850s. His piece is still in family possession.

The other interesting thing to be found in this airport was two large shops selling frozen fish and edible bird nests! Who buys a large frozen fish before a flight?

Our destination is the city and district of Sandakan, on the opposite coast of Sabah. The flight, on another Boeing 737-800 aircraft is just half an hour. During the flight I can see a lot of oil palm plantations, but not such large or unbroken tracts as in Sarawak. We landed at 4.53.

Sandakan was the capital of British North Borneo until the Second World War when it, like the rest of Southeast Asia, was overrun by the Japanese. They built a POW camp to house about 1,500 mostly Australian POWs captured at Singapore to use as forced labour to build a military airfield. By 1943 there were 2,500 prisoners there. Allied air forces bombed the airfield and Sandakan incessantly and it was finally abandoned in 1945. The Japanese sent the remaining prisoners on death marches and otherwise killed many. By the end of the war, apparently none had survived. Despite the destruction a few pre-war buildings survive including some Chinese temples. In front of a small police station I saw the shell of an American 500 pound bomb hung up for use as a bell. Nearby on a low hill stands a tall narrow clock tower from 1905.

The Lower Kinabatangan area of Sabah is said to have the richest concentrations of wildlife left in Southeast Asia. Yet the local tourist board booklet actually boasts that Sandakan is "now a busy centre for the oil palm industry."

We are headed first to a small town called Sepilok, 25km from Sandakan. It is best known as the site of the Sepilok Orang-Utan Rehabilitation Centre, within the Kabili-Sepilok Forest Reserve (4,294 hectares). It was the first rehabilitation centre for orangutans, opening in 1964. About 60-80 orangutans now live free in the reserve. The local tourist board booklet claims that orangutans from the Centre "eventually return voluntarily to the wild." This is contradicted by what Leo told us at Matang Wildlife Centre. He said that no orangutans had been reintroduced to the wild. It just doesn't work if they have been familiarized with humans.

We were met at the airport by a local man named Mark Benedict, Programme

Coordinator of APE Malaysia, a tall young man with spiky hair. He is very friendly, very informal and rather energetic in his enthusiasm. APE Malaysia (pronounced 'ape') stands for Animal Projects & Environment. They are a conservation-minded educational/tourist organization that claims to help with conservation of endangered species by coordinating volunteer work to improve habitats etc.

We leave the airport in a coach and are driven to a small and somewhat isolated collection of bungalows called Sepilok Bed & Breakfast. Mark introduces his colleague Mohammad Harith, Programme Coordinator with APE Malaysia. Just a few steps away is a large reception or meeting hut with tables, a screen and a digital projector.

Mark gives a brief introduction to the area and the programme for the next few days. From the way he speaks and the material he presents it sounds as if he is accustomed to addressing school children rather than adult university students. For example, he asked "who here knows what bipedal means?"

6.10 we are shown to our accommodation. It's very basic. There is again a bible in the drawer of the bedside table, this one also in Malay.

7 dinner at the nearby dining hut just as it starts to rain. We are served a nice dinner of rice and fried fish and chicken with vegetables. Mark and Harith dine with us. The proprietor is a friendly lady who tells me that there are various establishments in the area catering to different levels of clientele and she describes her own as the lower end of the price spectrum. All around us is dark forest. Hanging on the wall for decoration is an old hand-made Dyak rucksack made of some sort of bark with rattan shoulder straps. It feels immensely strong and is perhaps waterproof unlike a woven one.



8 after dinner there is a further briefing: 'Training in scientific animal behaviour' at the meeting hut again. Obviously animal behaviour is not scientific, the observers are, instead Mark outlines an overview of how researchers record animal behaviour and he distributes forms so that the students can do so tomorrow. He claims they will be contributing to science but this seems highly unlikely and is probably just an educational tactic.

But the exciting thing is that tomorrow we will visit the Rehabilitation Centre and be inside the enclosed reserve with semi-wild orangutans! Gosh. Gulp. He tells us how to behave, what distance to keep and that we may not take bags or insect repellent inside with us. (I recall Leo's descriptions and photos of the severe injuries inflicted by orangutans on humans.) On one point only does Mark drop his cheery high school coach style 'let's go team' manner. "You are not here to take selfies with orangutans. If that is why you came here, go home." I quite agree. At the end Mark and Harith hand out t-shirts bearing their programme logo and ask the students to wear them the following day "so we can take a group photo." Again, this is school children stuff. But then, NUS does the same thing. It also treats its students like children.

At 8.40 we adjourn and it's an early night as we will be off first thing in the morning.

Borneo expedition day 10

Close encounters with Orangutans and Sun bears

17 May 2017

8 breakfast served at the dining hut. Not very good. Cold rice and fried noodles. We had to come to breakfast with our bags packed as we will not return to this place. The lads from APE

joined us.

At breakfast I heard that some of the ladies had talked long into the night about why should we bother with conservation and then went on to discuss religion. Good stuff.

8.48 we all depart in the coach for a short four minute ride to the Sepilok Orangutan

Rehabilitation Centre nearby. The rehabilitation work is paid for by tourist revenue, which brings in 1-2 million a year. Those with proper cameras have to pay 10r to enter, on top of the entrance fee.

We are first directed into a small lecture hall (imagine appropriately basic architectural standards) for introductory remarks by an Irishman. His comments were rather silly and overly simple- aimed at tourists who know nothing and can barely read. The room is full of grey-haired western tourists. No doubt they have money for exotic trips to see famous animals like this. After the intro they played a UK-made video. Tear jerking funding appeal- adopt an orang, they're cute.

As everyone knows, orangutans are one of our closest living relatives and the largest arboreal animal. They are said to be as strong as four men combined. Only about 20,000 are believed to survive in the wild. There are about 200 orangutans in the centre and reserve here.

9.30 when the film is done we are free to do what we actually paid to come here for which was not to be preached at or begged from, but to see the animals. Onwards!

Mark says 300 orangutans have been released into the wild from this centre. I don't know how to reconcile this with Leo's statement that none have ever been released. Maybe Mark means into the reserve and Leo meant the wild proper. As Mark talks I spotted with my binoculars two strange birds perched atop a dead tree some distance away. They are black with broad orange beaks gaping open. I am told these were Dollar birds.

We are about to enter the orangutan area. No bags can be brought in, and especially no insect repellent which the orangutans might steal and drink. Our hands and shoes are sanitized to avoid infecting the animals. And so we proceed into the forest on a raised boardwalk

9.42. Right away one can see dark shapes of bunches of leaves and branches high in the trees, orangutan nests. Even I can sense that these are far too common because the animals are more densely packed here than they would be in the wild.

This is virgin forest that has never been cut down. Indeed the sounds of this forest seem richer than those I have heard elsewhere. The insects and birds create an incredible music. Sadly this is overshadowed by all the incessant talking and silly joking. It's rather annoying and admonitions to be quiet and experience the place never work.

Mark points out how tall and straight some of the trees are in a virgin forest. He said some were 40m high "taller than the Empire State Building." I raised my eyebrows at this since that building is 102 storeys or 400m high! These trees have been taken in logging all over Borneo for many decades because of their excellent qualities as timber.

9.52 just minutes later something very exciting is seen in a tree very close - it's two macaques. One is the familiar greyish long-tailed macaque, but the other next to it is a yellow or orange-ish short-tailed macaque! I have never seen one before. Mark says they can mate and produce hybrids. Right on queue the grey male takes the female's hind quarters and quickly copulates with her and then sits down as if nothing has happened, as macaques always do. The students all laughed and shrieked with embarrassment. A nice thing about other primates is, I think, they have no such feelings of shame for their natural behaviours.

We are about to move on when there is a rustling in the branches a few meters to the left of the monkeys. I saw something dark fall from higher in the tree but it did not continue to the ground but must have remained stuck somewhere in the tangle of leaves and branches. I took up my binoculars and trained them on the spot. At first I saw nothing but vegetation. Then I saw the glowing eye of a Crested serpent eagle! It's wings were rather inelegantly sprawled over the leaves but it had caught something. I could see it bend down and pick at it's prey but leaves blocked my view it. I thought it must be a bird. No feathers came off as the eagle bit at it. But

then for one instant I saw a mammals tail hanging down, like a rat's but a bit darker and thicker. (Alternatively, I might have been quiet mistaken and it could have been a snake- but I had a clear view and stick with mammal.) Then the macaques started moving towards the eagle so it abandoned its prey and flapped off a short way and perched in the open where I got a slightly blurry photo of it. It called a few times mournfully in frustration.

We walked a short distance further along the boardwalk that makes its way through the otherwise dense forest, to the orangutan viewing platform. A few yards in front of this was the raised feeding platform amidst the trees. As we arrived a man had just dumped a pile of bananas and some other fruit on it from the woven rattan rucksack he was wearing. He then descended a ladder.

To my surprise and disappointment the viewing platform was full of a large crowd of perhaps 150 noisy and revoltingly badly dressed tourists. What an unpleasant sight after strolling through this magnificent forest. I several times went further down the boardwalk to escape from all the chatter (despite the signs demanding "silence") in hopes of seeing more things and maybe an orangutan headed towards the feeding area.

10.15 the first orangutan, a juvenile, comes in on one of the many ropes to the feeding platform from surrounding trees. It swings by its arms one after the other. Halting it effortlessly swings a hind leg or two to hang, with body still upright, from the rope. This might as well be a zoo. It feels indistinguishable to me from an animal in a zoo with this huge crowd of people. Perhaps intimidated by the several short-tailed macaques already feeding on the platform, the orangutan never came down.



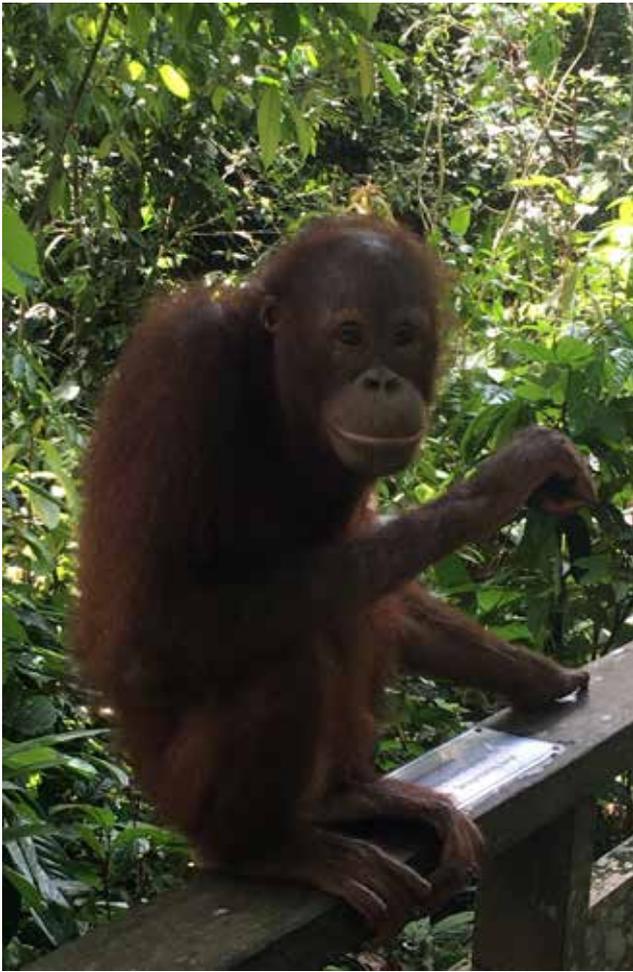
A short-tailed macaque.

More short-tailed macaques arrived. I got to see them very close. They look so different from the common long-tailed, more colourful and with the base of the tail standing upright like a baboon. A mother walked right by me on the hand rail with her nether regions swollen large and bright red like a balloon. She was ready to mate again though she had an infant trotting along behind. Under the boardwalk, on its supports, and unseen by the herd of tourists, a big male was following her.

His sexual organs were also brightly coloured. He was large, muscular and powerful looking. They vanished into the forest.

10.25 most people have impatiently dispersed. Good riddance. So few orangutans coming to the feeding area is actually a good sign, it means the others have chosen to feed in the wild of the reserve on their own. 10.30 Mark has us move on too, to the Outdoor Nursery.

10.40 I stayed behind to watch other things and the group was some way ahead. As I walked to catch up an orangutan came into view on the handrail of the boardwalk and began walking in the same direction towards the Nursery. I followed fascinated to be this close to an orangutan without any barrier between. She occasionally paused to look back at me and a few tourists behind me with their cameras almost in my ears. A ranger and one of the students was ahead of her and keeping about the same distance. The ape made no reaction whatever. On she continued. By this time the tourists were getting bolder and one couple in front of me spent all their time with their back to the animal trying to take selfies of themselves with the orangutan behind them. God, what idiots. They had one of the most extraordinary animals in the world just six feet away and all they cared about was their stupid photos! The tourists kept pressing me closer to the



Rosa.

orangutan whom the ranger called Rosa if she paused too long. At one point she paused and sat on the rail and with a squeeze defecated loudly. A diet of too much fruit I think! Again the tourists laughed and giggled.

At the Nursery the students observed the young orangutans outside in an exercise area and filled in forms. There were two adolescent orangutans outside behind one-way mirrors so that they would not get used to being close to lots of humans. While sitting inside here I saw in all five young ones on platforms, hanging from ropes and on the ground. Mark said this was the third stage of rehabilitation.

11 the nursery closes and we are ushered out. Now we return to the entrance.

In conversation the students show themselves to becoming more sceptical about all of this. Was this all working? What on earth could resolve all these complex problems with shrinking forests and endangered

animals? One, for example, as we walked along together on the boardwalk between the trees, said without any prompting from me on the topic, that his feelings had recently changed about what he valued. He had decided he didn't need to worry about getting another photo for Instagram but wanted instead to actually look at and experience the rare opportunity at hand.

11.38 back on the coach and heading to lunch. I'm surprised that this was it for the orangutan centre. I expected more than minutes of forest boardwalk and three artificial orangutan encounters. And I did not think we would be in the company of a mob of tourists.

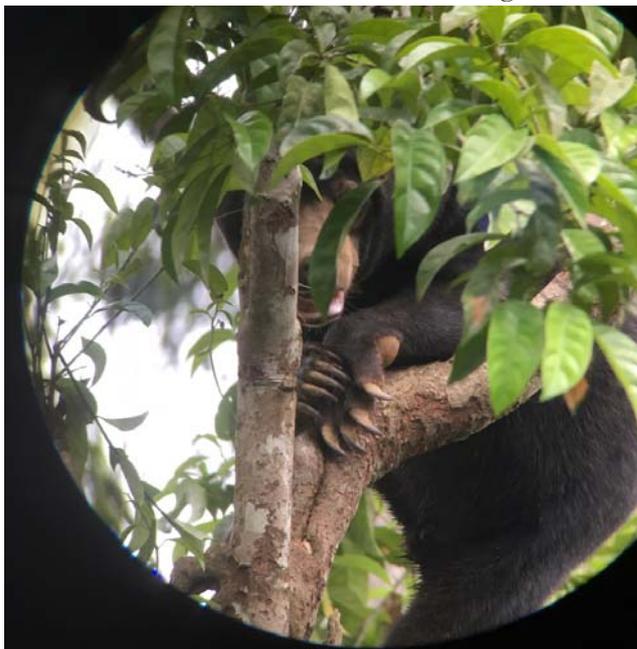
11.40 stop at the end of a short little lane for lunch at Banana cafe and restaurant. The lunch is but indifferent but Mark is a font of information. He barely gets to finish his lunch he spends so much time talking and answering my questions. The palm oil industry is the number one source of revenue in Sabah and tourism is the second. The Sepilok reserve is about 43 square km of virgin forest, but it is an island with palm oil and other plantations all around it.

12.40 back at the Centre, now we walk to the Bornean Sun Bear Conservation Centre. There is a short introductory presentation by a pretty young lady from the Centre, Miss Belinda. She is from KK and studied conservation biology. The Bornean sub-species of Sun bear is half the size of the mainland species. Another example of island dwarfism it seems. There are 44 bears here now. Of the eight bear species in the world, these are the most arboreal and weigh about 60kg. It's warm and we have just had lunch and some of us, including me, are finding it hard to stay awake.

1.18 onwards to the bears, again along raised boardwalks through the forest. Wow- just as we reach the hide or viewing platform there is a Sun bear high in a tree directly in front of us! What a fascinating animal! I take some photos and films with my phone through my binoculars and a viewing scope set up on a tripod by Miss Belinda. This is very hard to do but the photos

are far nicer than my phone could otherwise manage. The bear is breaking branches and biting the bark.

Then heavy rains start. We are stranded in the hide. But the bears love the rain and this was obvious. Young ones were scampering and playing on the ground and at one point four climbed the same tree in play. At other times two played at biting and chasing each other high up in a tree. One gets the upper hand and the lower one descends rapidly bottom first, followed closely by the one above. This is fantastic. They take no notice of us and are just being themselves and we are lucky enough to be able to watch them. This is far better than the orangutan encounters. The bears are fed four times a day on fruits, sugar cane etc. As we linger, stranded by the torrential downpour that still gets us wet inside the hide, I am introduced to the founder and CEO of the Bear Centre, Wong Siew Te.



2.30 back to the bear centre building now that the rain is lighter. In a nearby canteen we have a tea break. There are curry puffs and sweets.

3.30 we begin the long drive in the coach to Sukau. At the back of the bus many of the students gathered to talk about religion. So I joined them and very interesting it was. I admire the way they could discuss their differing religions or indeed lack of any (about one third) so amicably and with such mutual affection.

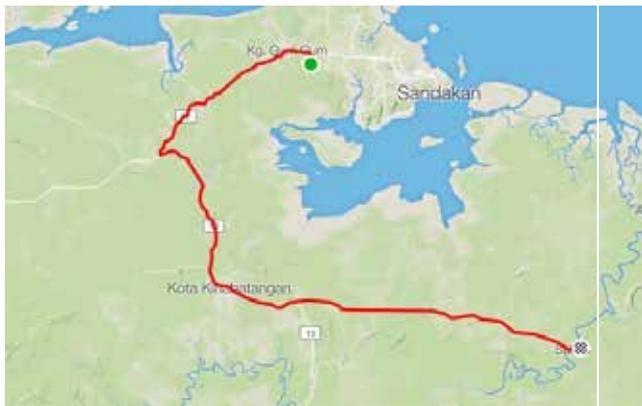
Our long drive takes us through endless miles and miles and miles of oil palm plantations.

5.45 we stop along the side of the road and Mark gives a little talk in the coach about the nature of the palm oil industry which ended with the usual sort of moral exhortation 'we all have a role to play' etc. etc. No we don't. Hardly anyone will be able to make any difference to something on the vast scale as the international palm oil industry. Legislation has a role to play, not the opinions of random members of the public. That's my view anyway.

5.35 our coach could not reach the village we are headed to because the roads became too bad so we have stopped short near some houses on stilts beside the mighty Kinabatangan river, Sabah's longest at 560km. Two minibuses will take us and our bags the rest of the way.

5.44 we continue on over a terribly potholed road, it eventually narrows to a dirt road passing primitive wooden houses on stilts with children playing and scooters going by. This is a very rural, remote and 'impoverished' part of Sabah.

5.50 reached Sukau. The people here are called river people or Orang sungai.



Sepilok to Sukau. (Strava)



Oil palm fruits by the roadside.

5.53 after a drive of 110km we arrived at Sukau Greenview Bed & Breakfast, a very basic little resort with detached bungalows. It's right on the Kinabatangan river. There are crocodiles in the river we are warned. There is no longer any phone data network out here. Mark says that to dress appropriately in this predominantly Muslim area we need to wear shorts that reach at least to the knees and ladies should not to reveal too much skin. I'm wearing my expedition trousers anyway so that's fine.

The room is very dirty and primitive, reminds me of the cheapest accommodation I used to get at Tioman, though this has more amenities. No wifi in room, just the restaurant.

6.30 Mark gives another impassioned briefing upstairs above the restaurant.

7.35 he finishes. Dinner was supposed to be at 7.

We walk along the road in the darkness to dinner at the home of a local family. How interesting. The skies and stars above are crystal clear. The students are very excited to see this. We spotted a Wood owl perched on the power lines. I shone my light on trees and shrubs the whole way but never spotted any eye flashes from animals.

7.50 arrive at a very simple, traditional wooden house on stilts and are warmly welcomed. Up the steps to the verandah. We remove our shoes and sit on a large carpet in the middle of the large central room. The bare wood walls are painted pink. There are a few low settees around the wall and about seven very old and faded photos framed on the wall as well as some script in Arabic. Our hosts speak no English. They have perhaps ten books along the wall. They have few possessions.

I was surprised that in answer to my question the uncle (owner) said, through Mark, that the house is only fifteen years old. The wood certainly looks older. A kitchen area is behind the main room and on the left, as one enters the front door, is a raised step which seems to lead to three bedrooms. The lady of the house sits on this step watching us smiling, in her hijab.

Mark says the owners are Orang sungai (water people). The old couple appear, from the old photos on the wall, to be grandparents. We were served rice, curry chicken and vegetables and a homemade sambal chilli.

We sat in a circle on the floor of the main room. Mark suggested we eat in the local style with the hand, although utensils were provided. Everyone did so. There were two water dispensers near the table, one to wash the hand, with a plastic bucket below, and the other for drinking water. There were many jokes about the strength of the homemade sambal chilli which I did not dare try. The style and construction of this house were remarkably similar to the c. 130-year-old house I visited in Ternate in 2013. 8.44 we thank our hosts and walk back.

8.57 back at the restaurant of our place Mark embarks on yet another lecture. This one entitled 'wildlife corridor.' We are 130km from the sea and yet the river here is tidal. He discusses the nuances of forest cover in Sabah. The river is so brown and cloudy because of soil erosion from logging. It was formerly clear. The river is lined with forest, but beyond is plantations. So it's a belt or corridor for wildlife.



We are located exactly where the controversial bridge was to be built over the river. David Attenborough and others lobbied to stop its construction. It has just been announced that it will be stopped. But since those in power will gain from its construction, I fear it will not be stopped for long. And then this unique ribbon of aboriginal habitat will be broken. 9.48 Mark finishes - half are falling asleep. To bed as we have an early start tomorrow for what promises to be a great adventure.

Borneo expedition day 11 The Kinabatangan river runs through it 18 May 2017

5am up. I think there is a rat scurrying on the tin roof of my rickety little chalet.

5.37 I take my laptop over to the restaurant to use the wifi and rush to edit and augment my journal from yesterday so I can upload it before heading out today. If I don't, I will get behind and have trouble catching up.



6 breakfast is served and the students trickle in but I am not finished.

6.30ish as breakfast time is about over my extremely slow and interrupted upload is finally completed. I quickly eat a few mouthfuls. Breakfast consisted of toast, fried eggs, baked beans and mee goreng. I rush back to my room, get my bag and head to the dock (attached to the restaurant).

6.45 we depart in three small outboard boats (not long boats as in Brunei) on the Kinabatangan.

The broad and somewhat swollen river has more debris, wood, rubbish and even large logs and tree trunks floating in it than I have ever seen in a river before. Almost all of this flotsam is wood from the forests. Our boatman has to sometimes steer around them or slow down if he hits a branch too large. It is not long before we begin to see wildlife in the magnificent forest that lines the river for over a hundred kilometres to the sea and far inland from where we are, about halfway between the sea and the source of the river.

6.49 we see a White-bellied sea eagle perched on a branch overhanging the river. This is the largest eagle in Sabah. He takes no notice of us but eventually flies away.

Not long after we see an outcrop of limestone along the water's edge. Here under a small outcrop is a cluster of black little swiftlets with their mossy nests clinging to the stone a few feet above the water. The boats go in quiet close but the birds don't mind.

As the boats continued their slow progress upstream, I kept scanning the forest ahead with my binoculars looking from one mighty giant tree to the next for the shape or colour of an animal or any movement.



Proboscis monkeys photographed through binoculars.

7 We spot a pair of Oriental pied hornbills with an adolescent youngster in the same tree. This is the same species as in Singapore.

7.09 Further off we see another Serpent eagle sitting on a power line. 7.17 I spotted a group of Proboscis monkeys with my binoculars. The boats headed in for a closer look. It is a family group, a large male and his harem of females. Some are feeding. A mother with youngster is clearly visible. Their long noses are indeed comical. 7.33 I spot another interesting creature, a Stork-billed kingfisher, the largest in Borneo. It has a massive red bill.

7.37 I spotted through the binoculars some swaying of leaves high in a tree to our right. I kept watching and aha! it was another group of Proboscis monkeys. These were rather obscured by leaves but we did get to see one take a great leap from one tree to another. 7.44 a long-tailed macaque.

7.48 I saw a Black eagle in a tree. Very large with an orange beak that turned grey near the tip.

8.15 Another Serpent eagle. Alas then the boats turned and headed back. I could do this all day.

8.22 the boats landed us at a narrow spot amidst the forest-clothed bank. We stepped ashore on the muddy bank. So far we have travelled 11.8km by water.

Next we head into the swamp forest along an almost non-existent game trail. There are deep muddy patches and overhanging vines and branches. It's easy going for Mark and me but some of the students are such urbanites that a bit of mud or a tree trunk across the path not only slows them down but must be endlessly discussed and joked about. The students make so much noise its hard to hear the forest, or even appreciate what a remote one we are lucky enough to be in. Throughout this walk I repeatedly asked them to be quiet and explained why. Yet there were not 30 seconds of quiet.

Mark soon pointed out some deep round Pygmy elephant tracks and a pile of dung, perhaps a month old. There are only about 1,500 of these gentle giants left. I would love above all to see one here. My other wish is to see a wild gibbon. The Bornean rhino is now extinct in Sabah. (Indeed, tragically, it is all but extinct in all of Borneo, its native home.)

The forest gets denser. There are hordes of mosquitoes, ants, leeches and vines of viciously barbed rattans hanging down. Mark next spots some large pig tracks. I had shortly before seen two spots in the 'trail' where they had been rooting around. I know these signs well from Singapore and Pulau Ubin.

Later we pause by an absolutely enormous strangler fig, its buttresses high enough and so widely spread out that we can walk through them like archways. This tree long ago grew around a host tree that has long since died and rotted away leaving no trace except its outline in its killer's trunk.

Other interesting plants and insects are seen and photographed. Alas no birds or mammals, but then they could hear the noisy people talking and laughing etc. from a long way off. Someone spotted a little leech attached to my trousers, I flicked it off. Then Ashley found a little one on her leg. It was slinking its way up and had not bitten yet. I grabbed it and everyone had a look. But then someone spotted two huge leeches on the edge of a leaf bordering the



trail. They sensed our warm mammal bodies and blood and were frantically feeling and groping outwards back and forth to catch someone. I pulled off the leaf they were on to show it around. One began to move back towards my hand. I turned the leaf around. Same thing happened again until there was a lithe little leech on both ends so I tossed the leaf away. Lastly I spotted a small green stick insect, very fine and delicate.

9.30 at some point near the water the trail ends and we board the boats again. But this is not the river we left, this water is calm and still. It is an oxbow lake, an old bend in the river that has become almost entirely cut off from the main channel. The boatmen motor across to the shade of the far side where we tie up for a snack which was sadly only boxes of warm lemon tea and packages of cocoa layer cake- essentially sugar and palm oil.

9.55 After this fine repast, we idle over to the end of the oxbow lake where there is a large area of short bright green water reeds. These are an invasive species of Water hyacinth from South America. It is part of the day's programme to apparently torture the hell out of these things.

First Mark demonstrates how to pull them up by the roots (they float but have a large mass of hair-like roots hanging down). One then twists off the stems and puts them in an old 50kg rice sack. The root mass then had to be wrung out which was more labour intensive than the rest. A seemingly endless supply of muddy water kept coming out. This was also put in the sacks. This work was carried out under the full sun, but by reaching so often into the cool water and getting pretty wet and muddy from the work, it was not so hot. The boats were soon covered in muddy water and pieces of plants. We amassed a sizeable store of these reeds, c. 12 large sacks.

10.26 we head off again. The breeze from the boat's speed is a godsend after the work on the hyacinths. Looking back at the large area of floating reeds, I see that we didn't make the slightest dent in the area covered. Mark last came with a group about a month ago. At this rate the patch of invasive reeds will never shrink at all.

10.50 our boats pass a large flat ferry at the shore with a big lorry on it full of, guess what, palm oil fruits and a second one about to drive on. This was just on the verge of a plantation that was visible through the break in the native trees where the ferry ramp was. These ferries go up and down the river now and then pushed by a tugboat.



All the way back I looked for wildlife just as diligently in the trees with my binoculars but saw nothing. In the heat of the day many creatures retire to cooler spots. A principle well mocked by Noel Coward with his, 'mad dogs and Englishmen' (1931).

Then Ashley felt a leach on the back of her leg, behind the knee. She rolled up her shorts and there was the little devil. It had nice yellow striping on it. I gradually flicked it off with my fingernail. It was then photographed a few times and then got what it deserved, it became fish food.

11.07 back at base. In all we travelled 24km, as my app Strava shows. The programme is free until lunch at 12.30.

Lunch today was very nice, consisting of rice, soy sauce chicken, scrambled and fried eggs with green peppers. I work on my journal more and deal with various correspondence and NUS matters etc.

At 2.15 the next part of the programme began. We were to turn the collected Water hyacinth into homemade paper and fertilizer.

The first step was to tear off the good clean green leaf stalks and put them in buckets until we had enough. The rest, and all the roots, were put in piles on the ground. We were given long parangs and instructed to chop it all up very fine. While it was fun to chop stuff up with a blade again after a long time, I eventually got a blister. I was surprised to see how awkward most of the students were, not striking hard and striking at a sharp angle so that only the tip of the blade hit the pile rather than the long flat edge. One could do with one flat stroke what 20 pointing strokes achieved.

The clean stalks had their leaves removed and were taken to the porch of the central house and slowly (very slow in fact) chopped into half inch bits with scissors. About 3 or 4 students attended to this. Then two cups of the bits were added to a kitchen blender with a loose cup of green paper fragments torn up, 5 cups of water, and then blended into a puree.

This was then poured into plastic trays of water. A plastic screen or mesh stapled to a wooden form was submerged in this soup and if lifted out slowly and evenly left a sludge that was to be the paper. This was taken to some newspaper, inverted, and carefully tapped for ages get it to come off without destroying it, seldom successfully. (My own attempt failed.) If it did come off mostly in once piece, it was left to dry.

All the while students were still hacking the hell out of the piles destined to become fertilizer. Finally all of that was scooped into rice sacks and carried down to the dock.

At 4.15 Mark took 7 of us with two wheel barrows to a house a short way down the road.

This house was very interesting. The owners must be a little house-proud or perhaps just very tidy and industrious. The area all around this large cream-coloured house with matching beige trim was swept clear. Benches in front, the verandah and even along the front lower edge of the house itself had innumerable flowerpots, many made of old water bottles, with flowers and such carefully planted. All around the house is an orchard of fruit trees. There's a durian,

coconut, mangosteen, jackfruit and so on.



There is also a small garden where the family grows seedling forest trees. We have come to collect 100 of these year-old saplings of six species of local trees for planting tomorrow as part of APE's programme of reforestation. Mark has paid 4 ringgits apiece for them, which seems rather steep to me. These are taken back to our place in the wheel barrows and also placed by the dock. The paper making people are still struggling. After all of this work, we have to clean the parangs, the paper trays, buckets, rubber gloves and so on, and return them to a small shed.

Now all of this was fun and not bad exercise. But the conservation and educational value and wildlife content was nil. Similarly, the amount of labour expended to make a few sacks of fertilizer and some absolutely terrible homemade paper can only be judged a huge waste. No farmer would do anything of the kind to make fertilizer. It was overly labour intensive, extremely slow and inefficient. So I think this whole part of the programme was a waste of time. I would rather have gone down the river in the boats or explored more forest in the hope of encountering more wildlife.

At 5 is tea with some local pastries. A most welcome refreshment.

6.53 the group heads for dinner at the home of the local family again. I ask Mark several questions about the family. The father sells petrol at a little stall across the road. The petrol, probably sold in litre bottles, he acquires I know not where. (I have seen this throughout East Timor and in Indonesia.) The mother works as an administrator in a school and since 2009 runs a homestay from their house. I noticed some of the few books on their wall were from Westerners, no doubt gifts from former guests.

Dinner was rice, soy sauce beef, kang kung, and stir fried star gooseberry and the by now famous sambal chilli. It was all very good. Curiously, tonight almost everyone ate with utensils. Perhaps four of us did not. No one had announced or suggested the idea of eating with the hand this time, so it was not done. And then the mother came with a special treat, a large tray of fresh homemade doughnuts. They were delicious.

I asked about an old kris that stood collecting dust in the corner behind the Koran on its book stand. The kris belonged to the father's great-grandfather and was said to have last been used during WWII and to have killed Japanese soldiers. (Probably a bit of family invention or exaggeration?) Most of the inlaid mother of pearl decoration on the hilt and scabbard had fallen off but it was clearly very old. The blade was still quite sharp.

8.50 we left with many friendly goodbyes for our gracious hosts. The darkness of this rural setting with no street lights, the clear skies and the stars again brightened our way back.



Sitting at the restaurant back at our place many of the students sat talking. I brought my laptop to finish my journal. Australian tourists at the next table asked me if we were the group from the university? We chatted for a bit. They then told us that they saw 20-30 elephants on a boat trip today! They showed pictures and even videos with the elephants trumpeting! Those of us at my table said almost in one voice, we *must* do this too!

This seems far more important than tomorrow's afternoon APE programme, a presentation by Mark on 'wildlife trafficking'. Ashley talked to Mark asking if we can change things a bit to make a boat trip to see elephants?

He said we need to listen to his lecture and that the students had already negotiated for a much abbreviated, and much cheaper, version of his usual tour package. That's all true one has to admit.

9.55 another intense group pow wow ensues at my table- what to do about the elephants? After all, we now realize, we all just paid c. \$100 more to extend our stay an extra day because Mark emailed that it was important we not miss the lectures on the last day. Now that we know how basic and school-child level these are, we feel rather stupid to be paying that much money and taking an extra day only for that. Whereas there is nothing we would like to see more than Pygmy elephants in Borneo!

10.02 Now KG has gone over to chat to Mark to try our latest ideas. Having scanned the programme, I pointed out that there was so much time for breaks and empty time that we could easily do a 3-4 hour elephant seeking excursion without skipping any of APE's content.

KG is back. Mark points out that we would have to wait until after we came back from the tree planting in the morning (perhaps 11am I guess?) to hear if the elephants have been sighted by anyone along the river, and if so nearer or further than they were today. And also one would have to ask the boatmen how much that distance would cost. So we can't be certain if

tomorrow's elephant hunt will happen or not. And if it does, it would cost more money. Can all the students afford it? (If they can't, I think I will just pay for them myself. It's not that much after all in the grand scheme of things.) After all, as I just told those at my table: one of the most incredible animals on earth, which is almost extinct in the wild, lives in this very area, which we may never visit again. What could be more important and valuable for us than to witness them for ourselves?

Borneo expedition day 12

Replanting forest and seeking wild elephants

19 May 2017

5.50am to the restaurant. Two westerners sit sipping coffee. The students have not appeared yet.

The muddy brown expanse of the river flows incessantly by with a mist slowly rising from the forest on the opposite bank. The dawn is brightening and the last of the night's crickets are still calling while the dawn chorus of birds has joined them. I could sit here all day and just watch the river flow past. All the logs and branches drifting down make it an ever changing scene. Breakfast is served at 6. Later I have to remember to take my daily malaria pill.

I have seen very few chickens in rural Sabah. This is odd because normally Malay villages have many free-roaming birds. There are also no fighting cocks to be seen. Mark told me that was not really part of the local culture.

A journalist from BBC travel has emailed asking to interview me by phone on Wallace, Ternate and so forth. Her questions all expect answers that either contradict the question, are not interesting or are misled by old-fashioned conspiracy theories regarding Darwin. So I will have to steer things in a historically accurate yet hopefully still interesting direction. She wanted to ring today but I explained I am not easily contactable here so I have asked her to ring me on Saturday in Singapore.

After breakfast, at 6.45, Mark had the whole team line up on the dock. Our first mission of the day is to plant forest tree saplings in gaps of the forest. We formed a human chain down the dock to the boat and handed the sacks of saplings, fertilizer mulch, water and tools down to the boat.

6.55 we set out in two boats downstream. Along the way I have my binoculars out to search for wildlife in the forest lining the river while I can. High up in one tree I saw what seem like the largest pigeons I have ever seen. They are Imperial pigeons. Later I saw another Serpent eagle, Long-tailed macaques and a large glossy black bird in flight with a short tail.



7.16 we arrive at a featureless spot on the bank after 5.2km. The boat presses its bow

against the steep bank and we clamber out and up the bank before passing all the cargo up along another human chain. This is a grassy area surrounded by trees. Mark says that in the 1970s when they were logging here, the logs were stored at this spot before being moved into the river. The compacted soil was latter colonized by grasses which prevent the growth of young trees. All around are saplings planted earlier, each with a wooden stake (just a thick twig) next to it to mark its position. Near one of them is a heap of old elephant dung. Then we head further inland to the area we are to plant with trees. Overhead a huge Purple heron flies by.

A short walk further inland brings us to another clearing. This is where we are to plant 100 trees. It will fill a gap that will allow orangutans and other forest animals to pass through without leaving the cover of the forest. Mark had previously paid local people to clear the tall grasses and weeds with parangs. He then demonstrated how to dig a hole the right depth with a post hole digger and spade, place a bit of our homemade mulch in the bottom, put in the sapling, fill in the hole, line the surface with more mulch and then cover the ground around with dry leaves and grass so that the wild boar will not see an area that has been dug up and start rooting around there.

At 7.26 we start. I'm rather keen to do this work since I am very familiar with all of this from many years of gardening and digging etc. I got to work in earnest, cheerfully assisted by Athira who would add the mulch and sapling to the holes I excavated. It was hard work digging in the clayey soil, often filled with roots that had to be chopped through. And in the tropical heat and humidity it was almost suffocatingly hot to work so hard. Pretty soon I was utterly drenched with sweat. Each time I hit the ground with the post hole digger several drops of sweat would fly from my head. Athira also kept me supplied with drinking water. I eventually drank more than three litres. The Malay boatmen are amused at my rapid progress and came over to watch, although they don't speak any English. The older man wears a parang with the usual Bornean wooden scabbard, secured around his waste with just a piece of string. In the end I planted 26 of the 100 saplings, by which time the students had planted all the rest so our job was done by 9.45. Alas I have worn open the blister on my hand from the mulch chopping yesterday. This tree planting was a satisfying project, for once I felt we had done a little bit of good. But whether any orangutans will survive in the wild by the time our trees are fully grown is sadly rather doubtful.



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The group after planting 100 forest trees.

We took a well-deserved break and had more lemon tea packs and palm oil and pandan cakes.

By 10.20 we were back on board our little boats. Oh god the breeze on the boat felt good. But just two minutes later we stopped at another spot and climbed ashore. Mark showed us where he had planted trees like ours four years ago. They were already about 20 feet tall! One tree here shows signs of being used as a scratching post by elephants, and its already think enough to withstand this. There is more elephant dung here but quite old.

As Mark explains things to the group, I cannot resist walking a few paces away and scanning the trees just in case I might spot a wild orangutan. High in a tree not too far away I spotted a dark mass of foliage on its own- clearly an orangutan nest. The leaves are still green. It's fresh. An orangutan slept here within the last week!

10.40 we board the boats and head back to reach our place at 11.10. Despite scanning the forest with my binoculars, I saw no wildlife to speak of.

My clothes were not only utterly drenched with sweat but also covered in dirt etc. Even my shoes (my only pair) are wet for the first time. I lay my things out in the sun to dry. I had a quick shower in my mouldy little bathroom where the door has to be secured by twisting a piece of wire around a screw in the doorframe. Back at the restaurant I have an interesting conversation with a Christian and a Muslim student about their respective beliefs.

12.15 lunch is served- very good indeed given the appetite I have worked up.

1.23 Mark's next lecture 'wildlife trafficking' commences upstairs. He repeats his mantra that 'we all have a role to play' to help with conservation and solve these big problems. He argued that legislation doesn't work because there is still a demand for wildlife, such as in pseudoscientific medicines. In my view, one can never solve such problems by persuading people to be good and moral either. One can only persuade some, and demand will not die because of that.

Then he immediately gave his second talk. Conclusions Part 1. This has been brought forward so that we can go on an extra unscheduled trip at 4pm, in search of the wild elephants recently spotted in the area. The students were set some questions to answer and broken into small groups. Singaporean students seem to be raised on group projects or at any rate to love doing such group things- so they instantly and fluently do as they were asked.

2.35 a heavy rain shower hits. I'm nervous this might jeopardize the elephant trip.

3.18 it's stopped. Saw a Common iora, (yellow breast) a bird I never saw before.

The students then gave group presentations. The less said on this score the better. These would not pass muster in my Tembusu seminar. If any more confirmation were needed that they are assigned school children tasks, the open boxes of crayons on the desk seems to say it all.

3.54 that's finally over. But Mark proceeds to add some further final remarks such as: 'No matter how small it is, you are still making an important impact.' What? This is a contradiction. If the difference you make (for example in not eating shark fin soup) is utterly miniscule, then no, you are not making an important impact. You save not a single shark by refraining from eating soup. Just because the motive is noble does not excuse shoddy reasoning and downright false claims about efficacy.

Nevertheless, although Mark has his own views or agenda, it's not overly intrusive. He is also extremely knowledgeable and well versed in his chosen area of interest and natural history. He seldom could not name a bird, mammal, plant or insect that I asked about, even when vaguely described.

He tells us that one of the boatmen who has been driving us about here was an illegal logger before he started working regularly for Mark. Now he no longer cuts down trees but drives tourists around. Mark thinks this is how eco tourism can save the forest etc.

This is the same flawed logic we encountered on the Tembusu College Komodo

expedition last year. We hired a group on Lombok who have converted a handful of the thousands of local fishermen to drive tourists around instead of catching sharks. But I have no doubt whatever that this has not saved a single shark and could never be expanded to employ the majority or even a significant fraction of the fishermen. There could never be enough tourists there to replace fishing as a livelihood for most of these people. The fact that 6 or so no longer do so makes no difference to the daily, monthly or yearly catch of sharks of the other few thousand fisherman.

4.07 yikes, he embarks on yet further closing remarks. We should have been in the boats heading for our longed for elephant quest 7 minutes ago. Keng Gene and I exchange anxious glances. We are losing time for which we are paying extra money to hunt for wild elephants. This is eating into our precious 2-3 hours!

4.22 still going! Even the boatmen downstairs are shaking their heads with a grin when I go down to get a fourth cup of coffee from the restaurant to keep me awake.

One is really a prisoner to these eco tourist operators and is treated not like the paying customer that one actually is. This is just like on Halmahera during my 2013 Wallace expedition when the owner of one of these said we had to go to bed at 9.30pm because he felt like retiring himself and shut off the lights in the restaurant area of his resort! That's just one example of how his guests were practically told what to do.

4.24 a last 'shock' video to motivate us to save the planet by showing albatrosses that died from swallowed plastic on Midway island and finally the presentation is over. We rush to our rooms to grab some things and then back to the boat dock.

4.29 we set out up river in two boats to search for wild Pygmy elephants. We are resigned to the fact that we will probably won't find any, but we have to try.

4.48 I saw a beautiful Rhinoceros hornbill flying over. Wonderful! Later I'm pretty sure I saw a pair of Bushy-crested hornbills perched in a tree with my binoculars. I scanned both banks as best I could the whole time for wildlife. But it became quite tiring to be attentive for so long while scanning so many trees. I try to search the gloom behind the trees and especially the grassy areas along the banks, desperate to see wild elephants on this our final cruise.

4.57 ooh! I saw something quite amazing. A giant black squirrel with a chestnut brown belly. This was the Sabah sub-species of Prevost's Squirrel.

5.15 we approach a part of the river where several small tourist boats like ours have stopped and their occupants are all looking into the forest on the left bank. Some boats are edging right into the reeds along the bank. There must be elephants there! The anticipation and excitement on our boat was intense as I could see as I looked back at the students.

5.18 I looked intently but there seemed to be nothing but jungle to see. Then all of a sudden we heard the very loud and unmistakable shrill trumpet of an elephant! The thrill and elation in our boat was indescribable. We had found them after all!

Our driver slowly idled up towards the shore. I searched with my binoculars. We could hear great snaps of branches and the rustling of leaves but not see anything through the thick vegetation. I then saw a place where the branches were moving, and so high above the ground that it must have been an elephant's trunk. And then I suddenly saw it- I had been looking at it all along but because the body had not been moving, I could not register it as a living thing. My god it was immense. These Pygmies are not tiny. This glorious animal was now only c. 25 feet away from me. I never saw it totally unobscured but there were clear patches with no leaves. I don't think the others on my boat could see much as they had no binoculars. I could see the texture of the skin so clearly I could almost touch it. Also in plain view were its ears gracefully flapping back and forth. There below was a short curved tusk, slightly yellowed at the base. A giant leg kicked at the ground. From the forest far to the right came the occasional trumpet or deep body-piercing rumble that we have all heard in documentaries. But nothing, nothing can compare to hearing these sounds from free wild elephants in their native home, and close enough to feel the rumble in one's body. I'm not sure if I saw another individual given how

patchy my view was through the leaves.

The driver tried looking elsewhere but we could not see the others. Our other boat came up and told us that they had seen a huge crocodile swimming in the river and – glory of glories! they had seen a wild orangutan mother in her nest with an infant!

5.48 our boatman turned to find the orangutan.

5.49 A large bird flies over, it is a Storm stork. Sadly less than 500 of these graceful birds survive in the wild.

5.55 we found the spot. To our left, high up in a tree is the dark shape of the broken branches and leaves of a nest. We can clearly see the orange hair of a wild mother and baby orangutan laying in it. As she settled down to sleep, she sometimes moved her arms to hold on to a vertical branch, a bit like resting one's hand on the head rest or bed frame. Then the infant did the same thing. Later it sat up and looked about a bit. I could see its little protruding snout clear enough to see its expression.



I tried desperately to get a good photo by holding my mobile phone up to my binoculars but it is extremely difficult to get it aligned to the tiny spot that will work, then it was hard to find the spot where the oranges were and the damn boat was unsteady from waves and to top it all off the light was quickly fading. But to see this with my own eyes was a dream come true. At the final hour of our Borneo expedition I had seen a real wild orangutan.

6.04 to my deep regret we are heading back, but it will soon be dark.

6.16 another Storm stork swept over. Could see its pointy and deep yellow beak.

6.20 wow! we see two groups of Proboscis monkeys roosting in the bare branches of tall trees along the water's edge. I made more photos and videos with my binoculars trick.

6.31 passed another tree full of them but it's getting quite dark so our driver did not slow down. From time to time he hit some thick branches floating in the river because they could not be seen. This is rather dangerous without any lights.

6.50 we arrive back at our dock after dark. The whole journey was 23km.

7.35 dinner. 8.10 Mark calls us back upstairs for the final session of his programme, Conclusions Part 2. He distributes a little test or questionnaire to see how much they learned. Then he handed out a feedback form. Then came an unexpected treat, Harith had been taking photos and videos of us since they met us at the airport. He had edited them altogether into a very nice and funny video set to music. Mark then gave each of the students a certificate, and even one to me. We, in turn had gifts for them which were presented by Keng Gene.



But yikes! We have to be up and packed at the restaurant area at 3am in order to make our flight. So there is no opportunity to reflect further on this eventful day just yet.

Borneo expedition day 13

Final adventures in Kota Kinabalu and back to Singapore.

20 May 2017

2.30am up as my phone alarm goes off. Less than three hours sleep, ugh.

3.35 to restaurant. There is no breakfast as I expected, just more cheap packaged Malaysian snacks like biscuits and cakes. All replete with 'palm oil goodness.' Our bags and the 15 of us cannot all fit in the minivan which has reached our place so it has to take the bags and then us in three trips across the dirt road full of potholes until it reached the paved road where our coach awaits. 4.16 the last of us depart from our resort.

4.25 we reach our coach and so continue on to the airport at Sandakan.

6.18 arrived at airport. Here we have to say goodbye to Mark and Hadith from APE Malaysia. Mark's facetious remark before we would eat certain foods that contained the vile palm oil, "enjoy some palm oil goodness!" has become the joke of the expedition in my mind and I find myself repeating it now.

While we wait to check in, I ask him a few more questions. His mother tongue is Kadazan, but does he know how the Dyaks of Sarawak pronounced their word for orangutan, Mias? Wallace always used it. Mark confirmed that my pronunciation was correct. But he also told me that the other groups in Borneo had quite different words in their own languages. And what about the contradiction with Leo about rehabilitated orangutan releases? He said Leo must have meant that there had been none from the Matang centre.

During the short flight to Kota Kinabalu I finally see the famous mountain, Mount Kinabalu, the highest point in Borneo. It's much more impressive than I imagined. Sitting on top of the larger mountain range, there is suddenly an abrupt, essentially vertical pillar of dark stone that is itself apparently much higher than the range it sits on. It was as high as our plane as we flew past it, although we were by then descending. 8.25 landed at KK.

9 We put our bags in storage in order to spend the few hours layover here looking about before flying home. 9.16 most of us take taxis into town.

9.30 I walk around alone a bit through the local market along the shore. Nearby there are sea foods such as small sea cucumbers drying in the sun on the pavement in plastic trays.

9.45 several of us have lunch at a small kopitiam. The food and my kopi peng are the same as in Singapore.

10.28 Ashley, Val and I head off for what I joke will be a pirate adventure. When our group was in KK last time, some had hired a boatman and his small outboard to drive them across to the water village Kampung Gaya and show them around this strange town built on

stilts. We walked over to the boardwalk were soon accosted by a man selling such boat excursions. ‘How much?’ I asked. ‘100 ringgit.’ he said. ‘For how long?’ I asked. ‘As long as you want.’ ‘Really? such as five days?’ He laughed. “No, one hour.” Ok, we will pay 100RM for a one hour boat tour. We walk a short distance through the covered market stalls and board a shabby little fibreglass outboard with a young man at the tiller. I note down that it is 10.45 as we speed across the pretty blue sea. The village stands just in front of a small island of the same name.

When we reach the water village it is quite a sobering sight. The boat just idles along the perimeter. This is an entire town of the very poor illegal Filipino immigrants living in makeshift shacks, but shacks on stilts over the sea. Even the stilts are just crooked branches, not straight timber. Everywhere people are sitting in their houses, hanging up their laundry, washing, or waving at us decadent wealthy tourists who have nothing better to do than motor out and stare at them.



There are power lines out to these houses and there are many television antennas. We see one house that has fallen in the water, just the top of the roof is above the water. We are told that it was hit by a boat. Around the corner is a much larger building, also with just a corrugated tin roof but with a home-made miniature dome of tin that was once painted gold, the local mosque. The boat takes us around to the far side to show us the school. This is a very large series of well-built and tidily painted buildings. However the stilts on its jetty are almost rotted through.

The ‘guide’ then suggests Ashley have a go at ‘driving’ the boat. She sits next to the boatman and steers for a bit and is then shown how to use the throttle. We sped along at almost 40km/h which with the small waves at sea can make a boat like that bang about a bit. It was great fun. Then Val was given a chance to do the same. We saw a small covered jetty where men were waiting, presumably to be picked up by boat. The ‘guide’ said we could pay 10RM and land there and walk about and explore this water town. A larger boat was coming by with three very large plastic containers in it. We were told this was drinking water. It sells for 5RM for 5 litres in the water town.

The ‘guide’ kept pointing Val, and then Ashley again, towards the direction of the KK boardwalk where we had begun, even though we had been out for only 15 minutes. I was offered a chance to drive it but I have driven so many boats in my life that I was not interested in steering this one for a couple minutes. And so the boat touched back at the cement steps at the market at 11.08! The ‘guide’ indicated with gestures that we should alight. I showed him my watch and said “it has not been an hour, it has been 23 minutes.” After some hesitation, he spoke to the boatman and we were driven off along the coast which took us past the local fishing fleet at its moorings. This was quite interesting as we got a good close look at all these fishing boats. The style seems just like those in Indonesia. Some were made of wood but most appeared to be steel hulls. The boatman went out a few minutes and then circled right back to where we had started from. It was now 11.23! The ‘guide’ now tried another trick to get rid of us. He pointed at the petrol canister, which was a large translucent plastic container. “No petrol” he said. The boatman picked it up and sloshed it around. “That’s enough for two more hours.” I said. What a pirate indeed! He was trying hard to get us to leave. The others were not interested in pressing the matter either so we got out. I figured getting ripped off like this was worth the story.

We spent the rest of the time exploring the local markets. The fish market was vast with endless different types of fish, squid, octopus, snails, clams and so forth. Along the market stalls that sold dry goods I spotted a small rabbit(?) cage with a black mother cat in it and perhaps three kittens just a day or two old with their eyes still closed. But there were also two kittens inside that were a couple weeks old. All were laying about suffering from the heat. The mother was panting. One of the babies had fallen out of the cage but its head was stuck in the bars. Knowing Ashley's fondness for cats I pointed it out to her. I asked the man sitting next to the cage, at his 1890s Singer sewing machine, if the cats were his? No, he said, and pointed at the wall behind him. They belonged to someone inside. I went in and found a woman selling jewellery and trinkets. I asked if the cats were hers? Yes. Are they for sale? No, she said, but I could buy one if I wanted. (I was hoping to find out why there were in a cage in the heat.) Careful not to sound reproachful or judgemental, I said perhaps it would be nice to give them some water since it was so hot? She just shrugged. I asked if she had a little plastic cup, such as the two on the counter in front of her filled with plastic beads for jewellery. She handed me an empty one. I went out and gave the cats water from my bottle and then sprinkled and flicked some with my finger tips on them. None of them drank while we kneeled there but the mother cat began licking the drops of water I flicked off herself and a kitten.

12.15ish the three of us ran into three others from our group at the market and took a taxi back to the airport for 45RM.

The group gathered together on some seats in a corner to discuss final reflections on the expedition. All but one said what they found most memorable or most interesting about our expedition, or what its impact had been. I was touched by what Matthew said about my influence on his outlook. I then ended with a brief recapitulation of where we had been and the most amazing places we had visited and the most wonderful creatures we had seen. I praised them for the hard work in organizing the itinerary, flights, accommodation and so forth. For me I think the most impressive parts of this expedition- things that we saw excepted- were the two occasions when the group was galvanized into action by problems that needed to be solved. First was when our flight to Mulu was cancelled and the second was when we realized that wild elephants were not far away from Sukau, but another trip was not in the programme already agreed with APE Malaysia. By any measure, this expedition has been a great success and an incredible experience. We have all seen places and things we had never imagined before and we have learned a vast amount about the peoples, places, wildlife and the apparently irresolvable complexities and paradoxes of nature conservation in Borneo. As Keng Gene said in his final reflections, now we need time to think about and digest all that we have learned.

2.52 our plane takes off. 4.47 landed safely in Singapore. The end of the expedition.

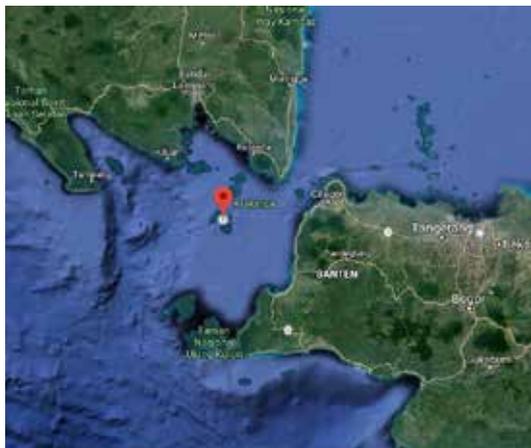
Postscript: Two of the students on this trip later wrote to me. These are the sorts of letter any teacher would be proud to receive. They are reproduced here, anonymously, at the risk of appearing immodest but I include them as evidence that expeditions of this sort really do benefit students in many ways.

“Dear Dr John,
thank you for being so supportive of our plans since we began planning the trip last year, and for sharing your knowledge and experiences with us throughout the trip. I also appreciate your effort to get to know each of us better, and share your thirst for knowledge with us. During the trip we saw how insatiable your curiosity is, and this curiosity has definitely rubbed off on some of us. Thanks for inspiring us in this manner, and for encouraging us to learn throughout the trip with your enthusiasm as well.”

“Dear Dr John
during this trip I was amazed about your enthusiasm for the nature all around us and you were always seeing things that no one else saw. I was conscious of photographing my surroundings, but I guess mostly taken for the sake of upkeeping my social media accounts, namely Instagram. But the experience of your example has gradually made me change my perspective. Instead of thinking about what a good shot it is for Instagram, I don't care about that anymore. Instead I just look at away from the lens of a camera and through the natural lens that is my eyes. On this trip to Borneo, under your guidance, I underwent a paradigm shift. Thank you Dr John for all you did to make us see the amazing things around us.”

The Krakatoa voyage February 2018

Professor Martin Henz from the School of Computing and Faculty of Engineering at NUS has for some time been leading a campaign to convince the university to sponsor sailing voyages for students and staff. The benefits of such unique experiences are many and so far he has been very successful in persuading the university of this. A few years ago he approached me to ask if I would support, with a written testimonial about the advantages of student expeditions, his campaign. I happily did so. The group he has founded is called NUS Seafarers.



Krakatoa lies between Sumatra and Java. (Google maps)

In January 2018 he approached me with an opportunity to organize another voyage, this time to the fabled volcano Krakatoa (Krakatau). I had read so much about the famous eruption of Krakatoa in 1883 that I could not resist the temptation. There was not much time to recruit students and organize the logistics and finances. Martin dealt with all of these urgent practical matters. Twelve people in total were recruited, including two alumni who had taken my Darwin and evolution module.

Krakatoa voyage day 1 24 February 2018

12.34 we landed in Jakarta and made it alive through Jakarta traffic but the marina is in such an obscure industrial area that our taxi driver got lost over and over, could not understand Google maps, asked for directions six times before we (me and two students) made it to Batavia Marina.

This is a rather posh place- a modern yacht club and restaurant. And moored just outside, there she was, our ship- *Four Friends*. My first impression? Gosh she's much smaller than I remembered. I had taken a day trip on the ship around Singapore a few months earlier. The ship is a stays'l schooner, that is with two masts. She was built in Malaysia in 1997 of Chengal wood. Her measurements are: 19m long, 5m beam, 2m draft, 32tonnes, 2diesel 125hp engines.



The *Four Friends*.

There are many fascinating aspects about her construction that left me wandering about and exploring and examining the joints and supports all over the ship. There is some fine woodworking.

She is owned and operated by Captain William Blake. He is a great and witty story teller and a man with an active dry sense of humour. For the past forty years he has sailed all over the archipelago and had more adventures than Indiana Jones. He was once a professional salvager of shipwrecks and has carried divers and scientists to many islands.

The ship had two crew. Agus, the boatswain, is from East Java.

He has been on board two years he says. The cook was named Dagang, he spoke almost no English but was also very nice and a great cook as well.

3.47 after a charming lunch at the marina we head for a place called Block 71, as recommended by STEER which has funded most of the students.

4.28 arrive at a large office building in the centre of Jakarta where on the 8th storey there is an organisation called Block 71 Jakarta.

The 'Community development manager' named Ersan told us about the organisation. They 'incubate' start-up companies in conjunction with NUS. I really don't understand any of this sort of thing. There are many events happening in various parts of this floor.

We get word via Whatsapp that the student who was ill can now join us. But her flight lands at 8.40, too late to get our passports to the harbourmaster in order to set sail tonight as planned. So- we shall have to leave tomorrow instead. We must see what the captain says.

5.40 we order various Grab cars and leave- immersing ourselves in that sluggish dirty river that is Jakarta traffic.

6.35 our drivers get lost and bring us to the same dead end!

6.50 our two cars are still lost!

7.07 we have now driven, very slowly, many miles to the south of the marina! We are going to die in this van...many roads that are clear in Google maps are blocked by gates.

7.10 oh no another gate blocks us. We are so close now.

Aha we find the tiny road through to the marina.

7.17 we are back! Thank god. All but three are now here. The students play billiards in front of the bar as we relax for a few minutes.

7.42 the captain takes us upstairs to an amazing museum of old wooden ship models. Wonderful. These were once stored in the nearby VOC museum that burned down recently. The captain explained many fascinating things about the different types of ships.

8.15 restaurant dinner. What a long day despite having done so little.

The passport/harbourmaster permission business still needs to be attempted at 10...

Krakatoa voyage day 2

25 February 2018

Bizarre and unprecedented bureaucracy prevented us from sailing last night. We slept onboard for the first time, some on deck, others on benches in the deckhouse, others in bunks in the three cabins below. My spot was stifling and uncomfortable. This morning Dagang made our first breakfast: white bread with bacon and omelettes with local spices. The students went shopping for provisions while Martin, the captain and I enjoyed a few hours of conversation about history, science, religion, primates, Bali etc. etc.

But now at 10am we have our forms and passports back. We just have to wait for the final port clearance. We will soon depart for Krakatoa. Captain Blake says the winds have changed so we may actually get some sail up from the start. How exciting. The launch was brought from nearby and secured astern with ropes.

Onboard captain Blake explained the basics of our initial navigational needs. Then the team of the first watch was taken to the wheelhouse and the floor hatches opened and we inspected the safety boxes in the cramped workshop in case we need to abandon ship. Then the steering was explained. Some of us scrambled down into the tiny space to see how the rudder mechanism works as someone above turned the wheel.

12 after a phone call the captain tells us that even the 'special payment' has not expedited our forms so we must continue to wait. He says that he has never had such a problem in 40 years sailing in this region. Just our luck. So we go through the man overboard drill in the wheelhouse.

1.15 lunch aboard ship. Curry rice and soup sayer.

1.30 captain gets a call and eventually screams 'oh fuck!' Then we hear that the captain

has been told that the harbourmaster will not clear us to sail with as many as 15 passengers. Yet the captain routinely does this in Indonesia. The 'special payment' has apparently not been accepted either. I do a bit of fishing to kill time. Nothing to be caught in this filthy marina.

2 the captain and Martin have gone to see the harbourmaster personally rather than rely on the strangely under-achieving agent.

3 still no word from them. I fear we will not be able to depart today again.

3.55 I text Martin to find out what on earth is going on. He replied that things look mildly hopeful and we may actually get out of here tonight.

4.07 wow the captain and Martin just appeared with four Indonesians, two in officers uniform. They were all smiles and took lots of photos of the ship and then of all of us. The harbourmaster himself stood with us smiling! What on earth?

We are now free to go! Krakatoa here we come! 4.38 the captain just started the engines.

4.40 we depart! The ship cruises at about 9.5km/h. I fished. Captain taught students to steer, to set a bearing and much else. It's all much more challenging and complicated than one would think.

7.45 dinner served by moonlight. Fried rice and scrambled eggs on deck.

Captain had to shout at the students to turn off lights and sit down at table as he could not see through them at a particularly tricky part of the sea lanes.

After this many went to sleep and all was quiet. I sat near the bowsprit and the scene was paradise. The half moon shone brightly amongst scattered clouds and bright stars twinkled in between. The sea was as calm as a mill pond and the engines just a gentle murmur in the background. The loudest sound was the gentle waves as the bow of the ship ploughed its way through the water. The air was calm and fresh. Near me Agus had his mobile phone and was quietly singing some Islamic song. Far off on the distant horizon were flashes of silent lightening from time to time.

I thought I should try to get some rest but thinking that lightening might reach us, I went to the deckhouse rather than the deck. 10.30ish I went to bed. I don't think I slept much.

11.30ish light rain started. Most were sleeping on deck so they and their cushions were brought in to the deckhouse. All the windows and hatches were shut and tarpaulins rolled down around the wheelhouse.

12.15 I was roused for my watch. The others were already in the wheelhouse with Eugene at the wheel. The radar showed massive rainstorms ahead and around as the captain said "we were advancing into the jaws of hell." He gave orders to change course to avoid the worst of it. There followed a cat and mouse game of our little schooner turning this way and that to avoid the massive yellow blobs approaching on the radar screen. Bright flashes of lightening illuminated the darkness again and again as the rain pelted down and our little craft tossed and pitched about. Our speed was down to only 4km/h.

12.44 we stopped as one of the kayaks was seen to be breaking loose from its ropes on top of the launch. We pulled it up close in with the ropes and Agus leapt on to it. I directed a powerful torch at the ropes in front of him as he drifted far away behind. In five minutes when he had finished we pulled him in again, drenched.

1am a heavy storm hit us. Alarming swells began from starboard.

1.05 strong currents push us off course. I took the helm for quite a while. It was a constant battle back and forth to try to keep our bearing of 275. How many movies have I seen that looked just like this? And now I was turning the wheel of a little ship lashed by a storm? Amazing.

1.36 I was asked for my medicine against seasickness by two of my watch. Later a third person. I had bought some just in case I might not prove to have any sea legs. Fortunately I never needed it.

And on it went like this. The rain eventually grew much less but the waves remained and the flashes of lightening kept making the sea and the ship suddenly visible. As the ship is all

closed up, the diesel fumes become rather unpleasant.

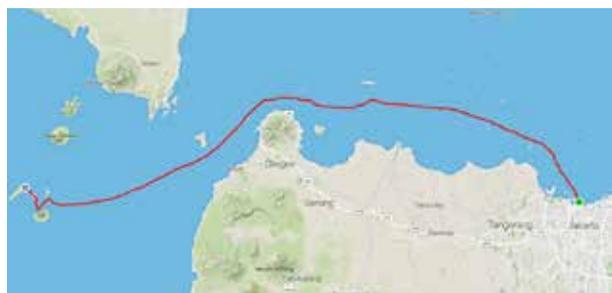
Occasionally we had to steer around a stationary tanker or fishing boat and once a wreck marker buoy. The wheelhouse is not lit to protect our night vision so I could get no photos or videos of this amazing night.

3.16 all our navigation lights just went out. I was told to wake the captain. He said we should just keep going until daylight.

I steered again for the last 35 minutes or so and suddenly a certain Gilbert and Sullivan tune came to mind which amused me no end. It was much calmer outside and the rain had died down and I had an excellent distant light with which to hold my bearing.

4am our watch has ended!

I stayed at the wheel another 7 minutes until we reached the way point and then captain was to be woken to set the new one. However, he dismissed the next watch and said he would steer. As I was stepping down into the cabin there was a little thud that alarmed him. Then he was worried about a sound. I had to take the wheel while he crawled down under the workshop. No one else seemed to be awake.



Route of *Four Friends* from Jakarta to Krakatoa. (Strava)

Krakatoa voyage day 3

After the storm

26 February 2018

6.15 I wake up on my hard little bench at the back of the ship as she still chugs her way through the sea. The captain, at the wheel, turned and said that the island far ahead should be Rakata, one of the islands of the Krakatoa archipelago. There was now a free spot on an empty bench in the deckhouse so I took it and feel asleep.



The morning after the storm.

8 up again. Almost all the others have long been up and have had breakfast. The ship was a mess. Bedding and hurriedly stowed possessions from the deck were scattered and stuffed everywhere. The skies are now clear and hooray- Rakata really is directly ahead of us just a few miles away.

10.22 we have arrived at Krakatoa! We have journeyed 180km in 17 hours (as my Strava cycling app indicates). We first came alongside the smaller island of Rakata Kechil. The captain

said the depth of the sea here was deeper than our sonar could detect- far deeper than the average of, say, 43 meters as during our voyage. This is a result of the great eruption of 1883 when apparently a great magma chamber below the surface collapsed.

There was some talk of landing on the shore of boulders and scrambling through the thick forest to abseil down a small rocky cliff to our launch. To this end the captain asked for a volunteer to climb to the top of the mast and look out for rocks. To my surprise our very own Jessica volunteered and took a hand-held radio. She was told how to say “over” at the end of each transmission. Rather charmingly, she began each transmission with “hello captain”. There seemed no obvious place to anchor with such a steep bottom.



Approaching Rakata.

We proceeded on instead towards the tallest island of the group, Rakata. This is a fragment of the original island of Krakatoa. Midway across the sea that lies between these islands, where once the island stood, there were suddenly excited shouts. A pod of dolphins, 50+, were swimming and diving not far away. We circled to follow them a bit and one came right up to the ship and then dove and vanished. But for the most part they remained clustered in a group far away and seemed too shy to allow us to get close.

It was now that we got our first look at the volcano, Anak Krakatoa, or son of Krakatoa. It has arisen in a series of countless eruptions since about 1930. The island is a single mountain of an almost entirely barren dark rock and from its summit yellowish-white gasses are streaming that look almost like smoke. It is the quintessential tropical volcano. The colours of the rocks are much more varied and interesting the closer one gets, especially the summit of the crater where there seems to be a kaleidoscope of rocks and mineral deposits including yellows and greens.

11.24 we decide to land a party on the north side of Rakata under an immense vertical cliff of sheer rock. Ostensibly this is to examine the geology but apart from myself and one student with training, the others are just out for a paddle in the plastic kayaks. I found mine incredibly unstable and I was in immediate risk of capsizing every second. Maybe I am too tall for these. The design is very poor since one sits too high above the water and the craft is ridiculously narrow.

We landed on a small pebble beach a hundred yards or so long.



Our first view of Anak Krakatoa.

The whole area was strewn with pieces of drift wood. An excellent example of one of the main ways that animals become distributed to far flung islands. When one sees this much wood on one tiny beachlet, the amount of wood from forests later floating around the oceans becomes easier to imagine. Some of those pieces of wood have live colonists on them.

But the really surprising thing is the diversity of rock types. I found black rocks, brown, red, yellow, rust, and brick-coloured rocks. Strange consistencies and surfaces all told of their volcanic origin. Tracing throughout the vast surface of the cliffs above us were the criss-cross lines of igneous intrusions that once squeezed molten rock up into the cracks of what was then the deep interior of the old island.

12.35 we have returned to *Four Friends* and steam across to Anak Krakatoa itself. What an awesome sight it is!

We anchor off the southern lava field which is very fresh. It draws a crisp line against the small bit of forest it did not destroy during the last eruption. We anchor in 18 meters of water and have our lunch. We then set out in kayaks to the volcano. I took the one-man kayak (which was not very precarious for me like the three man) and paddled ahead eagerly. As I approached there was something I did not expect- the sound of wildlife! I could hear insects and the unmistakable plaintive cry of the Collared kingfisher.

The lava flow here seems to be a red band overflowed by a blacker lava more recently. I stepped ashore on the black sandy beach which was a thrilling moment- here I was actually standing on Anak Krakatoa! The scene was otherwise far from idyllic. The beach was utterly choked with plastic rubbish that had been washed up by the sea.

The craggy moonscape of the fresh lava flow was at my left. Scrambling about its edge one could clearly see where chunks of lava had cooled and in their dying crunch, just fallen away from the block adjoining. And there they lay, just an inch away, still undisturbed. The hardness and sharpness of fresh lava is extraordinary. If one fell walking on this stuff one would be cut to shreds.

To my right were long low cliffs of crumbly ash with occasional bands of volcanic stones in them. Also strung all along the beach, just where the last tide had left it, was a bed of little white pebbles. At last, at last, I could pick up real pumice on a volcano! It weighs almost nothing. I threw a piece in the water, obviously it floats.

The captain too came ashore on the launch and we found some bizarre and colourful rocks. But, as I suspected, the diversity of types seemed less than what we had seen on Rakata. But then we barely saw the tiniest corner of either island. But Anak Krakatoa is the youngest island I have ever visited of course- it has only existed since 1930!

Our ship headed off next for the other island in this little circle, Pulau Sertung, to anchor for the night.

5.18 I joined the students snorkelling. The sea was very deep where we were and a bit murky. I saw many small c. 20 centimetre transparent jellyfish go by. Only very close to the shore did a sandy bottom become visible. I always find it a little scary to look down and see nothing, but knowing that the bottom is not far away. Then came a little bit of coral reef with some fish. Up on the sandy shore I walk a long way on the narrow beach between the forest trees and the surf. All around were the calls of the Collared kingfisher. I saw one chase another out over the waves and then circle back in to the forest. At one point there was an almost overgrown trail. I followed it for a few meters and saw a house with a corrugated tin roof in the forest, abandoned. Also along the sand I saw a hole had been dug by an animal. It had left behind four distinct tracks with long claw marks. There was a very faint line in the sand in-between that showed where the creature had dragged its tail- it was a very large water monitor, maybe 6 feet long.

Since we had seen some fish near the few bits of coral, we swam back to the ship and nine of us went back out on the launch driven by Martin to try fishing. I don't think we ever found the coral area again and the fishing over the sandy bottom areas was fruitless. We returned to the ship, as did the kayakers, for dinner.

Afterwards Martin, and my former students Eugene and XY, enjoyed convivial and stimulating conversation with the captain about his adventures in the Vietnam war (managing manufacturing and repair) and salvaging wrecks all over the Pacific, modern linguistic absurdities and the usual array of topics in really good conversation.



The *Four Friends* anchored off Pulau Sertung with Anak Krakatoa smoking in the background.

All of the others soon went to sleep in our usual motley scattering of bodies all over the deck, the dining table, the deckhouse benches, wheelhouse, cabins etc.

Now it was finally quiet. Our ship lay at anchor in the shadow of the smoking volcano, still well lit by moonlight. The sea was perfectly smooth and calm. I crouched on my bare feet on the planks of the deck, still wet from the snorkelers, holding a cable to steady myself. Was I really here at last? There it was, right in front of me, this black and smoking mountain, like the mouth of hell itself, spewing off an endless cloud of poisonous gasses from the depths of the earth. But even more mind-boggling is the fact that this little sea we are floating in right now was once the centre of an island. From where we are anchored all the way across to Rakata, was the original Krakatoa. Only when one stands here can one begin to appreciate just how much area of solid rock exploded into the sky and was obliterated. All around you was once island and now it is sea. Of course even then one cannot really comprehend how great the explosion of 1883 was. But it takes one a vast distance from the total ignorance of blind imagination based on reading a book or watching a film.

Krakatoa voyage day 4

27 February 2018

5.45 up. Breakfast was a slice of toast covered with sliced tomatoes, and that sort of cheap and disgusting American cheese that comes pre-sliced and wrapped in plastic, topped with omelette.

6.53 we weigh anchor and head for Anak Krakatau to land and climb up the volcano!

7.05 argh Martin brings news sent via the satellite phone that a website gives a danger warning of so and so many points. He says the danger has risen dramatically. Everyone gathers on deck to talk about it. Martin says we cannot land now. He wants to go abseiling instead. The captain proposes instead we land at an easier (to anchor) area of Rakata to explore that island.

8.13 We drop anchor off the southeast side of Rakata.

9 All but me and the crew head ashore in the kayaks. The captain regales me with amazing tales of his work salvaging shipwrecks over the last 40 years. He found ships from many centuries. In fact the splendid heavy bronze window frames on *Four Friends* were salvaged from the *SS Koala* which ploughed the seas around Singapore from c. 1912 until she was sunk by the Japanese in 1942.

9.45 Agus and I go fishing in the launch as we saw many fish jumping out at sea in a

feeding frenzy. He fishes with a line on a plastic ring-shaped spool. I cast my rod but we never get a bite. Agus is a very quiet man and an excellent sailor. I ask him about himself. He is 27 years old, married and has two children, a boy and a girl, about 12.

10.50 we return on board as the kayakers/trekkers return.

11.15 The captain taught us how to use a sextant to take the height of Rakata peak. I always wanted to know how this mysterious instrument works. We reckoned that Rakata peak (or what part of it we could see) was 882 meters.

12.15ish the last of the shore party returns and lunch is served.

12.45 we weigh anchor and head for swimming further up the shore where we can anchor closer to the beach. A few swim but the captain is angry that they take no heed of the current despite his admonishments.

I swam across to Rakata alone and walked around. I noticed the bank was eroded by the sea so that there was about a 4 foot cutting or cross section exposed. I spent 5 or 10 minutes digging away and smoothing this to make the layers clearer to see. It was very interesting.

At the top was a thin layer of soil perhaps only an inch thick. Below that was a layer of dirty and mixed ground pumice, below this was a thin layer of pebbles in ground pumice. Below this was another layer of about a foot of dark ground pumice. A few larger pieces were embedded in this and some seemed to show clearly that they had been rounded by the action of the sea and surf as they were rounded and smoothed. Below this was a band about six inches thick of quite white ground pumice, almost chalk-like consistency. Below this was another layer of six inches of darker pumice dirt again. Then came the bottom layer I could see which was dark and consisted of volcanic rocks of various sizes and colours embedded in a matrix of the same material ground up. None of these rocks showed the slight smoothing by sea or surf. They had crisp surfaces.

So what does this seem to show? Perhaps this is a record of the 1883 explosion. The larger stones at the bottom might be from the cataclysm that sent untold millions of tons of rock into the air. All the layers of pumice above this might have been the coastal accumulation of the hundreds of square miles of ocean covered with floating pumice after the eruption. It had to go somewhere.

At 3.25 we sailed back to Anak Krakatoa in order to measure the height of the volcano as it now stands. The captain and students used the sextant and our distance from it and came up with a height of 302 meters. [We later read that the current height is thought to be c. 400 meters. We must have got our distance from it wrong, or maybe not.]

4.30 that done we head back to Rakata to find a sheltered cove in which to anchor for the night.

4.35 we see our friends the dolphins again. Their unmistakable dark dorsal fins rose and sank some way off. We headed towards them at our unthreatening speed of 6km/h. They seemed to be in the same area as before. As we watched a baby jumped quickly out of the water. They vanished again and later appeared somewhere else. As before we steered towards them. Then as we chugged slowly after them heading east one and then another leapt straight out of the water. At another time one of them swam right towards us head-on. It vanished, then those of us clustered at the bow saw it briefly riding our bow wave, but not close to the surface. It was just a white figure a few feet under the water. Then it was gone. We saw a cluster of dorsal fins several further times but we had to head over to Rakata to anchor. In all we had ten minutes of close encounters with dolphins. One is left with such a feeling of privilege to see these much loved, but seldom seen, wild animals. The captain had found an underwater mound or hill only 40 meters deep in the midst of this bottomless (to our sonar which can only reach 130 meters I think) caldera. We are anchored not far from the pebbly beach we visited before. Several of us fished and again I caught nothing but XY caught a beautiful fish quite by accident as a school of

voracious feeding fish suddenly rushed past us (the only time this has ever happened) just as she was reeling in her bait. And I was set up with bait rather than a lure.

We enjoyed an utterly stunning panoramic sunset while the volcano across from us continued to puff away quietly. As the danger readings have gone way down, our plan now is to (hooray!) attempt a climb of the volcano tomorrow morning.



Sunset over Rakata.

Krakatoa voyage day 5
Attack on Anak Krakatoa
28 February 2018

5.19am it started to rain a bit so all the people sleeping on deck or the roof of the deckhouse came inside. The table along which I was sleeping on a bench was cleared so that two people could sleep on it. I decided to get up as it was about time anyway.

7.04 we weigh anchor- destination? The volcano! The sea has not a ripple though the captain explains to me that there is a swell which makes the ship roll more than one would expect. On the way we were served breakfast on deck- eggs, fries and, believe it or not, spam. The fresh food is running out.

7.50 The captain circled by the old red lava flow of the volcano, very close since the depth of the water even right next to it was immense, c. 125 meters. Here some of the vapours coming from the crater were blown down to the sea. We went through them but could barely smell the slightest hint of sulphur. Moving west there was a large shallow area, only 5-7m. We have had another report which drastically reduces the warning level for the volcano.

8.14 we find what looks like a suitable landing site on the north side. We anchor in 30 meters. There was a little beach near some of the small crescent of forest that still survives along the lower edge of part of the island.

8.45 we take the launch and kayaks over to Anak Krakatoa and land 5 minutes later. As most of the students seem unfamiliar with how to move on rough terrain, I suggest they follow me up an embankment I had just explored while they milled about. I warn them about how sharp the rocks are and how loose these will be. Right above is the lava field. It is an ugly and barren moonscape of large and extremely rough, sharp and craggy lava stone. For a short distance the little bit of a forest ran in parallel. This consisted predominantly of a type of tamarisk tree. There were birds, butterflies, dragonflies, ants and so forth. So many colonists on this tiny fleck of land. I picked my way through the field of frothy grey lava boulders and then cut right to get to a ridge of ash and stone that should be easier to walk on. This allowed me to

make good time and get closer to the cone of the mountain. Alas it started to rain at 9.04 which I was not expecting. I had plastic bags for samples but had to use one to protect my phone. Along this ridge I found a prominent boulder that was obviously the favourite lookout of a large bird of prey as its feathers were all around.



Entering the lava field.

Just after this I found one of the things I most wanted to see- unaltered pumice that had fallen on land. Pumice is found all over these islands- in unimaginably vast quantities. But it is all rounded and smoothed by friction on the beaches. I wanted to find a piece in its natural state and finally I did. It was rougher and yellower than what I had seen before, but not particularly angular and with no pointy projections. Later I found some pieces with a black outer crust of lava rock (?). Occasionally there were plants growing amidst this volcanic wasteland. Their green foliage looked so striking against the backdrop of a stony armageddon landscape. I also found what I guess were the remains of a burning volcanic bomb. A small round patch of the rocky ash about the size of my hands was discoloured. Many of the rocks were white instead of black and in the centre was a larger rock that looked like a burned up meteorite. Later I would come, I think, to recognize bombs (which are rocks that were shot through the air by the volcano) just by sight, even when the background was the same colour and type of rock.

Eventually most of the students seemed content to scramble about while I decided to push ahead and see just how far I could go, expecting at some point I would be asked to turn back with the students or some barrier or obstacle would be encountered.

The captain had given me a VHF two-way radio handset. My call sign was, just for fun, Mr. Wallace. I passed over the crest of a hill and then another. And always the great mountain of the volcano loomed- so steep and menacing. I was following a rising slope that wrapped around the base of the mountain like a ramp going east or southeast. Eventually this ramp could take me no farther up and there was nothing left but the pyramid of gravel-like scree itself.

Once I reached the base and saw what small particles of ash or scraggly gravel (scoria) it was made of, and how incredibly steep it was, I realized that there was no way a person could climb up this. One would simply slide back down. The material is loose and simply lying at the angle or repose.



Remains of a volcanic bomb.



At the base of the cinder cone. Krakatoa is classed as a stratovolcano.

I radioed the captain to report that I could not get any higher. “This is Mr. Wallace to *Four Friends...over.*” To which the captain replied “Well one can but try. Over.” This made me think I ought to at least give it a go for a bit. “Roger that.” I replied and taking the ship’s carpentry hammer, which I had with me to take rock samples, I scratched at the scree with it and the top centimetres just fell away but underneath it was a little firmer and held together more. With a few strikes of the hammer I could scratch out a shallow step.

So I put my left foot in that and stepped up. Then I scratched another step or foothold above and to the right and stepped up onto that one. I made good progress and pretty soon I looked down and seemed to be very high above the base where I had started. It was a thrilling vantage point. There was nothing to stop me from pushing yet higher. So up I went, one footstep at a time. Occasionally I would strike my knuckles against the sharp stones which cut me painfully. This happened over and over again. Eventually I began to get blisters on my right hand as I must have cut a hundred and then another hundred more of these steps. If only I had

brought gloves. Occasionally there were patches of more solid rock and also different colours, such as rusty reds, full of iron. I found the gravelly ash the safest and easiest. The solid pieces could slip and were not to be trusted. Clinging to a surface this steep, a slip could not be stopped. I would have slid faster and faster to my destruction. Eventually I was able to see the masts of *Four Friends* behind the forest cover at the edge of the island. I kept going. I was now so high that I thought I might get a glimpse of the summit from close hand. I drank my water and kept digging. Finally the rain stopped. I kept looking for Martin and the students since I heard them tell the captain on the radio that they were going to follow me up the mountain. I couldn't see them even come around on the ramp yet. They had given their radio handset to the students who were staying below to return to the boats.

So this scratchy odyssey of digging one step after another and climbing three or four feet a time went on. I had to change direction to avoid dangerous formations and eventually I could see a fumerole above with steam coming out. I veered right to avoid heading up to it.

At last I saw Martin and two students appear far below- almost like ants. I could not hear what they said as they shouted something up to me. But it was clear they wanted to follow. I pointed in the direction of the end of the ramp, which was where my cut steps began. Hammer and scrape away gravel, and step up. It seemed endless but I was now so high I was sure I was near the top. Alas the captain sent me a message saying I still had a long way to go. This was rather disheartening but I still had strength left so kept going after catching my breath for a minute and surveying the view.

Eventually Martin and the students came up close enough to communicate. I had shouted before but they could not hear me. I told them to wait until I was not directly above them, but some way to the side, before following. If they were directly below they could have been hit by the many rocks that were displaced and rolled unstoppably down the mountain. I continued to cut steps up and to the right so that no debris could fall on them down below.

I came to my first fumerole. It was a small hole about an inch in diameter in the black gravel. Steam was coming out of it, not much, less than a kettle on full boil would make. So I passed my hand through it very high. Nothing. Lower and lower till my hand was right over the hole. It was warm but no more.



Martin Henz and two students begin the ascent using my footholds.



Martin's photograph of me from the base of the cone.

It was about this time that I noticed that when I dug and scratched away one of my steps that the ground inside the hole was warm! Curiously the surface right next to it was not warm to the touch. The higher I climbed, the warmer it got under the surface. I worried that if this continued the volcano might be so hot higher up that I would be forced to turn back.

Finally the white-coloured and other variegated rocks that marked the edge of the crater came into view. There was no more rock above that point, I could see the sky beyond. I couldn't believe it. Just two more steps to cut and then I was on top! It was 11.20am.

How can I describe the scene on top of the volcano? Everywhere vast quantities of steam were boiling out of the rock. A good strong breeze from the north kept it all away from me but it also blew the steam and gas over the mountaintop making it hard to see beyond the crater edge.

Martin and the students, Qing Hao and Daren, scrambled up and we surveyed the scene. All around was the sea and other islands as far as the horizon. *Four Friends* was a speck on the ocean far below. The rocks were very differently coloured from the side of the volcano. They were stained white and yellow with mineral deposits. The more I looked around and explored the more I realized that there wasn't just one "hole" or crater at the top of this volcano. It was a jumble of craters, crags, outcrops and boulders. But almost all was shrouded by steam. It made no sound. It was such a bizarre and alien environment that it felt almost like being on the moon. Via radio, *Four Friends* congratulated us on successfully reaching the summit, they could see our tiny silhouettes at the top. I took photographs of everything I saw and took samples of the different rock types I could find. Some areas were so coated with white minerals that it looked almost like a winter scene in snow. This white coating was very thin, like spray paint. Martin broke out the drone and flew it over us and even through the steam and above the crater to capture some stunning footage.

I went alone to the right as far as it was safe to walk and there I came to the edge of an enormous precipice of orange rock. There was a huge vertical drop into a crater or canyon. But from there I could see, just occasionally when the steam cleared enough, across to the other side of the summit. Over there sulphur was spewing out as I could tell by the more smoky look of the gas itself and the yellow stained rocks all around the fumerole. My god what a landscape, like the very mouth of hell.

At 12.56 it was time to descend. I warned my companions that it would be far more difficult and dangerous to go down than it had been to go up. They heeded my warning better than I did. We began to scoot down a short distance. I had rolled a few rocks down from time to time which made for a thrilling spectacle because they accelerated to a terrifying speed and continued all the way down to the bottom and then would bounce or smash across the rubble field below. I saw a really big one near me, just a few feet below the rim. I edged over to it on my backside and gave it a kick and a push. It took a while to get it to budge. Then it finally broke

loose, but so did I! I began to slide down the mountain behind the rock.



First view of the crater summit of the volcano.





A frame from the drone footage of the summit.

The feeling of terror in those brief seconds was very real. “I’m not stopping.” I think I thought to myself in panic. Indeed I was accelerating. I tried to push in my heels and grip with my hands even as they were being cut by the razor sharp rocks. After sliding a couple feet or so I came to a halt. My hands were quite shredded. I later had another slide for being similarly reckless. None of the cuts were deep, just scratches, but I must have almost a hundred of them and strangely many cut flaps of skin which hung loose and flapped in the wind. The cuts on my right hand were dirty with volcanic dust.

Martin was much more cautious and tried to rebuild the steps by scraping them clear with a rock. The passage of three more humans behind me had greatly undone the steps and often they had to be made again. Plus I had cut them so far apart when coming up, in order to save labour, that they were very difficult to climb down. Often I could not reach the next with my foot and had to bash a new one in-between with the hammer. So I led the way down.

Again we had to worry about falling stone, of which we sent hundreds rolling down simply by moving. Slipping was also a constant danger. The students held way back and came down very slowly and cautiously. My toes were bruised, blistered and the skin worn almost off from constantly kicking the gravel out of footholds or scraping new ones. (I could not walk barefoot later or the following day as my skin was too thin and sensitive.) Shoes were not up to this task, the hammer was needed. Eventually the pain in my shredded hands covered with black grains of ash became too great and I again wished I had some gloves. I looked at all the things I had with me. My rattan bag from Sarawak with plastic bags of specimens, empty water bottles- there was nothing. Perhaps I should take off my shirt and tear it into strips? That seemed rather drastic. Then I thought of my socks; short white ones. Although full of sand and sweat I took them off and put them on my hands. The sweat stung on my cuts but in the long run the protection was a great comfort in climbing the rest of the way down.

I finally reached the base of the cone or scree at 1.48. The others followed in the next ten minutes or so. Then we had to make our way back down the long walk over that strange multi-coloured craggy landscape. Then last of all was the grey boulder field with its razor sharp crags and sandy ash in between. One was in danger of slipping with every step. Often I found it better to hop from stone to stone.

Thus the forest was reached and for a bit I could crunch on the fallen ‘needles’ of the tamarisks rather than the usual bone dry ash. And then there was only a final scramble down to the black rocky beach. It was 2.20pm. According to Strava I had been walking/climbing for five

and half hours but had covered only 3.6km (almost all of it was near vertical). I was utterly exhausted and just took off my hat and sat on the kayak. My toes, hands, everything hurt. The skin was so worn off my fingertips that my laptop could no longer recognize my fingerprint. Still, there was the ineradicable feeling of elation at having climbed the active volcano and glimpsed into its secrets.

Mercifully, the captain sent over the launch and we clambered aboard. We had a round of applause but I was surprised that no questions or conversation about our adventure followed. Lunch was soon served: sweet and sour sauce with fresh stingray. I washed most of the dirt from my wounds with the salt water from the tap in the head. My god that stung like hell. I creamed them and rested for the rest of the day.

At 6.50 we had dinner, fried rice with a tin of corned beef. (We must really be getting down to the dregs.) The captain regaled us once again with stories about tigers, exploring caves with paintings and his observations that only 5% of the sea life seems to be left here compared to decades ago. Every morning and evening we see the small brightly-coloured local fishing boats coming and going. Their crews wear bamboo hats and their boats boast large flags fluttering. These were said to come from villages on the island of Sebesi just to the north and often visible behind Krakatoa. Every evening after sunset the sky behind Anak Krakatoa would light up. This came from a series of large fishing boats that use rows of powerful lights to attract fish.

Krakatoa voyage day 6

Krakatoa to the Thousand Islands

1 March 2018

5.12am rain began and thus the usual exodus of deck sleepers into the deckhouse and windows shut etc. My hands hurt from all the cuts from Krakatoa. All go back to sleep but I start on my journal.

5.43 the silent forest clinging to the sheer side of Rakata suddenly comes to life with a chorus of birdsong and insects calling.

6.25 it's light and the captain starts the engines. Agus is below doing some repairs in the engine room, too much bilge water seeped in during the night. The power had been shut off to save the batteries.

6.40 anchor up and we are on our way back to Rakata Kechil.

7.30 anchor there. Breakfast today was pea soup with toast. Hmm.

The plan is for people to land on this island and abseil down a 30m cliff above the sea. It looks implausible given the vertical coastline and thick forest.

In the end they never made it as the forest was too thick and the top of the island was cut by deep sheer ravines (the top of this island seems to be pumice). In the end only Martin abseiled down and only from the lowest corner of the cliff. Then there was a very very long wait for the students to emerge from the forest to be fetched by Agus in the launch.

12.40 engines started.

1.20 abseiling group finally back on board just as lunch is served. Rice with fried chicken, peppers and onions.

1.25 we leave Krakatoa and set our course for the Thousand Islands archipelago (Kepulauan Seribu) back through the Sunda Strait. Because we are going the same direction as the wind, the air is apparently still on deck and hence stifling.

3.27 captain orders one sail hoisted. The students are directed by the captain and helped by the experienced Agus.

3.50 argh the awning is taken down. More sails to be set.



The route of *Four Friends* from Krakatoa to the Thousand Islands. (Strava)

So we are running the Yankee, Main stay'sl and Main'sl. What a beautiful sight it is to see the sails full of wind!
5.33 Second watch begins.

Sailing through the Sunda strait with the sun setting behind is a moment I hope never to forget. A golden sunset is blazing across the sky as the ship's rigging gently creaks. And below the sunset, our last sight of Krakatoa in the distance- the smoke and steam still visible. I suppose I may never see Krakatoa again.



Sailing away from Krakatoa.

6.15 dinner served. Instant noodles with a beef spaghetti sauce and week-old baguette.

6.50 orders to take in sails as too little wind. And there's lightening on the horizon in almost all directions. Gulp. The drinking water we are now given is brackish. There is a problem with the water reclaimer.

There was a long jovial chat and awful jokes and movie criticisms with 5 of the students at the deck table in the dark as we slowly ploughed our way through the Sunda strait. The air is so cool and the waves so hypnotic I just sat at the bow and watched the lights of Java pass by to starboard. The moon is mostly hidden by clouds and lightening flashes in the distance. This really is like paradise. What a relaxing and peaceful way to travel. We now have internet again on our phones. No doubt more bad weather will come when my four hour watch begins at 9.

9 the captain called me to the wheelhouse to show me the radar screen. A massive bank of ran is approaching. The whole ship is closed up and ready.

9.15 the rain begins. Wow the radar shows nothing but rain all around. We are blind.

9.30 my watch begins. Heavy rain! I try to stop up holes where the rain is getting into the wheelhouse. 10.15ish rain stopped.

10.30 we leave Java behind and head out into the dark open sea. It's much cooler in the wheelhouse now that we have taken down the perspex windows and rain tarpaulins.

Augus has slept at the bow the whole time wrapped in a sail.

12.30 we are now all alone in a vast dark sea. It's as quiet as can be. Just a twinkle of a

light in the distance.

1.30am my watch finished uneventfully as I kept us on a course of 60 degrees like the others in my watch. Someone is sleeping in my bunk, on my sarong, and indeed on either end of that person are other people so I will sleep on deck.

Krakatoa voyage day 6

2 March 2018



The route of *Four Friends* through the Thousand Islands. (Strava)

4.25am I awoke as we dropped anchor in 25m, as I heard the captain say. Fell asleep again. We had arrived somewhere in the Thousand Islands north of Jakarta. (Strangely there are actually just over 100 islands).

5.55 woke up to the sound of land birds calling - including the same kingfisher species again. It is found on every island we have visited. Also a koel. I have not noted before that we have never heard or seen a seabird during this voyage. Sleeping on deck is rather nice though I woke a few times because the wind could be rather chilly.

It's dawn and a cool breeze is blowing. I get up to look around. We are anchored right next to a tiny forested island surrounded by a white sandy beach. And at various distances around are similar small round islands. No wonder they call this the Thousand Islands archipelago.

I can see no boats or signs of humans except one of the distant islands seems to have a jetty. Strava shows we have travelled 140km in 14 hours 45 minutes from Krakatoa. Everyone seems to be asleep. Again the deckhouse is a mess with sleeping bodies all over the floor and benches. 7.15 breakfast of fried rice and eggs.

We discuss what to do in this archipelago. We want to see how it is slowly becoming a resort area. From the ship we can see almost no coconut trees but many tamarisks on the island next to us.

8am I head to the island on a kayak to explore. These are coral islands that have formed in shallow seas. The beach sand is very white. As soon as I land I noticed, in addition to the ubiquitous rubbish everywhere there was pumice! Not a lot, but plenty. So Krakatoa is even making these islands a little bigger.

I pushed straight inland into the forest. It was quite lush secondary forest with many birds including the collared kingfisher, koel, dove and more. There were ants, termites and an atlas moth. I found a large hermit crab using a shallow plastic pot as its shell. Later I found another using plastic. Near the beach there was a hardwood tree that had been cut with a chainsaw long ago.

Then near the centre of the island I found rows of coconut palm tree stumps rotting away, only a few inches high. These orderly rows show this was once a coconut plantation, probably for the copra industry which collapsed about four decades ago. As I approached the other side of the island, after only 5 minutes, more plastic rubbish appeared on the surface.

The island was pure coral sand. There was a rich topsoil about 4 inches deep (with earthworms) with purer sand beneath. The neighbouring islands have jetties and some have communication towers. There are already small resorts here in the northernmost islands. Local fishing boats are common all around.

9 I returned to the ship, reported to the captain and then took my snorkelling kit to join the others. The reef was quite poor and the number and diversity of fish was striking. I saw only one sea cucumber and one sea star. Lots of brain coral but also lots of lost rope from fishermen anchoring there. Martin had the good fortune to see an eel.



A hermit crab using plastic instead of a discarded shell.

9.50 back on board. 10.05 weigh anchor and move on.

We almost run into shallows and have to reverse. When this happens two men have to run back and take up the lines on the tender so they won't foul the propellers. At one of these shallow spots there is a sign in Indonesian Kosong U. No taking sand, coral or turtle eggs.

10.44 we are carefully picking our way through a maze of sand bars, shallows and the many small islands in the area. Many support village houses it seems.

10.47 we anchor near one of these with a small jetty.

10.55 captain suggests the three westerners put on shirts and trousers and land with the launch to reconnoitre and gather information about the tourist business. We were met by two men. There were three chalets on stilts but they looked empty and abandoned. Nice lads but they spoke no English. This place was for groups only we were told. They told captain that the next island had a hotel that costs 3 million a night! (300 sing)

11.15 we move on. Below decks Dagang is slaving in his dungeon making us a nice lunch. I went up and opened the hatch above the galley as far as possible to give him more fresh air. He looked up and thanked me with a twinkling smile. I like him. Despite working in that stifling galley with almost no ventilation he remains always cheerful.



Dagang in the galley.

12.20 lunch served. A potato and onion vegetable soup. These were the last vegetables on board which were stored in nets below the table on deck.

The day was spent slowly snaking our way in and out of these islands as we headed south. One mysterious island I had spotted on Google maps looked from the air like an aircraft

carrier. It was on the chart as an airstrip but we could see nothing of it. Along the shore cement pieces had been stacked as sea walls.

3.30 finally saw sea birds! Fairy terns were feeding in small flocks, darting and calling as they dipped their elegant little forms towards the surface to catch tiny fish.

Here we anchored next to another small island. The captain plans to stay here for dinner and then we can sleep and head for Jakarta at c. 2am so we will approach the dangerous shipping area at dawn rather than in the dark as there are too many unlit vessels and other unlit dangers.

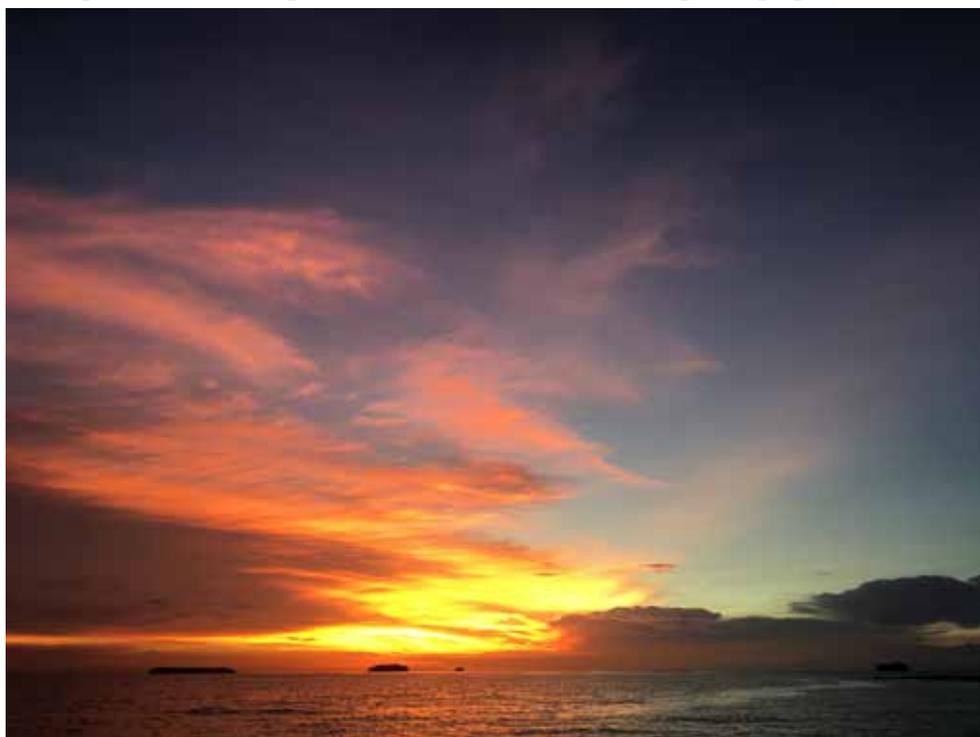
I kayak over to the little island to explore. To reach it I had to paddle over the shallowest coral reef I have ever seen. I had to manoeuvre around corals that I would have grounded on and several times the coral scratched the underside of the kayak. Uniquely during our voyage, this stretch of reef was full of sea urchins.

On the other side of the island were the remains of a jetty, now rotted away, and low cement sea walls built with coral rock. In the interior were the remains of stone-lined walkways and a street lamp. There had been something here that was now long gone.

Visible from the ship was a decrepit looking shack. I made my way there along the shore. It looked abandoned. I walked around the back but then spotted chickens, one in a bell cage. So some fishermen lived on this tiny speck of an island. I returned to the ship as I had come. My kayak occasionally scraping against the coral or the long black spines of the sea urchins.

I fetched my fishing rod and paddled back to the corals but everything got tangled somehow and then tangled again. By now it was sunset and all the kayaks were recalled to the ship and the usual protocol followed of hauling one onto the netting at the bow and the other four stacked and lashed on top of the launch which was then secured to the stern with three lines.

Sunset was a glorious splash of gold and reds across almost the entire sky. And shortly after this the full moon rose from the other side and it too was a golden red colour. As it rose it cast a yellow stripe of reflected light onto the sea toward us. No photographs could do it justice.



6.46 dinner was served. Dagang must be running out of food. He had made what I can only call *Four Friends* ad hoc soup. It had tins of this and that thrown in with bits of sausage and a boiled egg for each person. It was good all the same. Then for desert there were tinned peaches and lychee- and treat of treats! It was chilled with ice! I miss cold drinks.

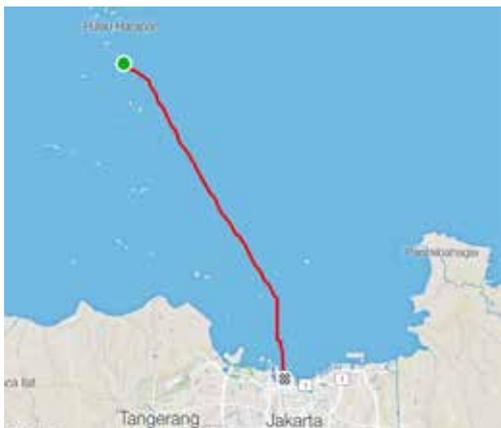
9.30 The students settled into groups to chat or play cards. I was suddenly very tired but could find no quiet place to rest and the deckhouse was too warm. In the end I climbed out onto the netting along the bowsprit and nestled into the folded sail. I was a little worried I might fall asleep and roll over into the sea so I slung one arm over the bowsprit and arranged the sail to make it a bit more comfortable. The ship gently rose and fell with a light swell and the masts and rigging were silhouetted by the full moon now high in the sky. Dagang kneeled at the bow nearby and quietly and cheerfully sang a song in Malay to a video playing on his phone.

I thought about Wallace and his assistants and Indonesia and islands and this amazing part of the world and fell asleep.

Krakatoa voyage day 7

End of the Krakatoa expedition

3 March 2018



Route from the Thousand Islands to Jakarta. (Strava)

At some point I woke up in the netting at the front of the ship to find most of the students already asleep. I tiptoed past sleeping people across the deck and fell into my usual bunk in the deckhouse.

1.27am I awoke to find a ghost ship. Everyone was asleep and the ship was silent except for the occasional faint whir and splash of the bilge pump. I was feeling a bit sweaty in the deckhouse so went out on deck but every inch was covered with sleeping students. I found the bench at the back of the wheelhouse empty so lay down there and tried to sleep again.

The sea was almost as smooth as a mill pond. Only the occasional swell gently lifted the ship up and let it down again gently. All was lit by the glow of the full moon. Only some time later was the silence broken when a rooster on the nearby island began to crow.

2.18am the captain is up and has started the engines and suddenly we are underway, heading south towards Jakarta.

I sit with Martin and the first watch in the wheelhouse. There are no other ships around at first. The sea looks eerily foggy and visibility is limited. This is the tropics; surely it cannot be fog. Only later would the reality become clear. Martin took the helm for a while and later I took over. 6.13 I spotted a single dolphin heading north.

6.18 I saw another further away. Also heading north.

A few times local fishermen in their brightly painted wooden boats were not paying attention and were about to cross our path or even collide with us! As we approached Jakarta and the waters grew ever thicker with rubbish we in the wheelhouse had to be on our guard. This was no joke. The captain took over in the end.

6.50 breakfast. Slab of corned beef with a bit of scrambled egg topped by a thin slice of beef luncheon meat and even the last of the baguette wetted to make it supposedly edible.

7.54 The rubbish in the seawater is so dense you could almost get out and walk on it remarked the captain. We pass endless freighters and so forth, past the red and green lighthouses and the grandiose marina building is in sight directly ahead. The captain has followed his earlier GPS tracks.

Just beside the marina is a partially sunken ship- an Indonesian ferry. Captain says it was neglected so long it sank (in shallow water). Now a big barge with a crane was at work on it as were a number of workmen. Huge black air bags were being inflated under the hull to right it. We chugged past in our proud sailing ship with her masts taller than all other ships and yachts in the marina. I saw many men taking pictures of our ship as she entered.

8.18am arrived safely back at Batavia Marina, Jakarta after a voyage of 6 hours and 57km.

I whispered a little scheme to the students about thanking our captain, and one of the students suggested we should thank the crew too.

So once she was tied off fore and aft I said. "Here's to Captain Blake, hip hip hooray!" etc. We then took some group photos on the foredeck with the drone.



Stepping ashore on proper Terra Firma was strange as they say it is after a long time at sea. Hours later I can still feel the ground heaving slowly up and down like the swell of the sea. The captain went off to sort out the superfluous immigration issue with our passports. We had no idea how long he might be. Meanwhile we had a hearty meal in the restaurant- no more ship food. Hip hip! Never mind.

Some of the students tried to teach me one of their intricate card games at the table. I had almost grasped the basics when at 1.25 we learned that our passports were back. We walked down the dock to the ship to get our bags etc.

I felt rather sentimental about the ship now, though there were times it felt like a prison with no privacy. It's sad when a wonderful short episode of adventure and new places and experiences ends. Everyone probably recognises the feeling. The students parted with the captain, many having a photo taken with him. At 2pm I was the last to step off the ship. The ground undulates beneath me more then before.

2.25 the students leave the hotel Marina in Grab cars for a shared flat they have arranged and I take a taxi to the hotel I stayed in during my last visit to Jakarta. We will all meet for dinner this evening and treat the captain and crew. That will be the last time we will all be together and that brings this unforgettable expedition to a successful conclusion.

A day in Jakarta

4 March 2018

11:39 checked out and take a taxi to the Jakarta Museum which I have not yet seen. It is housed in the old Dutch city hall building on Fatahillah square. Thousands of people are enjoying their Sunday. Everywhere there are street hawkers selling food, drink, trinkets or toys. One young man had a speaker around his neck with utterly awful music playing at a very annoying volume. He would stand in front of a group of people for a moment, move his hands like an idiot to the music, and then ask for money. Perhaps people paid him just to go away.

Out in the square I was interviewed by three secondary school girls learning English. Very basic questions, hardly worth their time I should think. What is your name? How long you been Indonesia? What is your favourite Indonesian food? Etc. I had the same questions in Bali. Their shyness in addressing a stranger is rather endearing. All of the people I have met have been without exception very friendly and welcoming.

The Museum however turns out to be almost empty. There are almost no exhibits. There are three or four fine pieces of early modern Dutch furniture and the rest are modern illustrations and panels and terrible reproductions of historic portraits. It's a sad thing when the building and its fixtures, like hinges, door handles and balustrades are older and more interesting than the content of the museum.

Next to the Fine art and ceramic museum is another beautiful building, this one with a fine neoclassical porch with Doric columns. Again I was mobbed by girls to take photos with me. Then inside the museum a couple with their selfie stick accost me. 'Hello Mister, excuse, can we take picture?' And again almost no exhibits. A lot of ugly modern things not worth looking at. A terrible museum.

1.10 at Batavia Cafe. Nice faux 'colonial' place upstairs overlooking the square. There are only foreigners here because of the prices. It was 30 minutes before my food or coffee arrived.

2.48 back out. Next I go to the neighbouring Museum Wayang. The Javanese shadow puppet museum. This is also not really worth a visit, unless one likes Wayang a lot and only wants to see the puppets themselves and nothing else about this art form. Only near the exit was there one interesting cabinet which showed the tools, materials and steps taken to make these shadow play puppets.

3.15 I take a short guided tour with a man named Banga. We take a tuk tuk to the part of the marina where there is a long row of old wooden ships, Pinisis. These were built around the 1960s as sailing ships. Now ageing and dilapidated they are still majestic with their long upturned prows. And when you get close one cannot help thinking, 'gosh these are huge!' They were built of hard teak wood in Sumbawa, I'm told. Now their masts and sails are gone and they run on diesel engines. I was told they carry goods like rice and fuel to Kalimantan (Borneo) in six days and bring timber from the beleaguered forests in return. One was loaded so heavily the water was just under the Plimsoll line and only a few feet from the deck!



A row of mighty pinisi.



The stern of a pinisi.

I asked my guide if I might board one. He called up to one of the men leaning lazily on a handrail high above. The man only shrugged. There were two wooden beams lashed together that went from the wall of the canal up to the ship. This was perhaps 10 inches wide and quite long. The guide put his foot on it and then laughed saying he was too scared of heights. I was scared too. The water below was filthy beyond description. I took it slow and in a few steps reached the deck. It's odd the way the deck curved so much up at the front.

There was a small boat with flat ends. Men were working on repairing something near the stern. Seeing a strange foreigner on board they simply smiled and waved. I looked inside the cabins a bit. The place was pretty filthy. There were some chickens in handmade cages. Walking back down the plank was even scarier! I was tempted to crawl on all fours.

Across this canal the bank was lined with small fishing boats and squatters houses.

4.12 in another tuk tuk for a 2 minute ride to the Maritime Museum housed in an old 18th-century Dutch warehouse. The displays consisted entirely of modern mannequins representing various historical figures from local maritime history. This too is utterly unworthy of a visit. The other building was partly burned down late last year.

4.30 I was taken across the road to the old Dutch port authority lookout tower, built in 1839. This could now be called the leaning tower of Jakarta. There were two old telescopes in glass cases upstairs, both in terrible condition because of the humidity. With that it was time to head to the airport and so, alas, my Indonesian adventure comes to an end.

The Sulawesi expedition May 2018

Sulawesi: the state of nature conservation in the footsteps of A.R. Wallace

21 May 2018

This expedition did not get off to a propitious start for me. My passport had less than the required six months on it so I sent it to be renewed but it would not return in time. I therefore applied for a temporary passport. (£100) This is valid for only one journey- and you have to show them your plane tickets. It is a pale beige colour rather than the usual burgundy red and the front is emblazoned with “emergency passport.” Indonesia provides a visa on arrival system, but this is not offered to a temporary passport. So I had to apply at the Indonesian embassy for a visa. (\$100) This was a world of chaos I was not prepared for. It would be too tedious to recount the occasions of contradictory information and instructions, superfluous return trips and so on. In the end I applied on Monday and was told it could take up to five days. (The embassy website says two days.) We were flying out on Saturday morning, six days away.

On Friday, sadly, I received news that my visa was approved, but that I had to collect it on Monday. I went anyway just in case there was a small chance but I was rudely turned away.

So the twelve NUS students left Saturday morning without me while I waited nervously for my visa. I booked another flight leaving Monday afternoon. I picked up the visa at 3.45 and went straight to the airport. My flight was at 5.40. I was very nervous that the passport might be rejected since it carried a printed message that it was for a trip leaving on the 19th. Although it was carefully scrutinized in Singapore and Jakarta, I was allowed to pass through. After a short wait at Jakarta airport, I took another flight to Makassar, Sulawesi, landing at half past midnight.

The main aim of our expedition is to investigate the state of nature conservation in Sulawesi, the 11th largest island in the world. An additional motive for me is to re-trace the footsteps of Alfred Russel Wallace. He visited Sulawesi, then called Celebes, a few times between September 1856 and July 1861. He spent a total of 310 days on the island.

Outside the airport at Makassar it was almost deserted and there was no place to buy a SIM card so I have no communication for the moment. I hired a private ‘taxi’ (unmarked) to take me to the hotel. The driver spoke almost no English. He is a real Bugis, the native people of south Sulawesi, and he speaks that language. His name was Riswan. It was a long drive with lots of honking to alert other drivers to his presence. I finally reached the hotel at 1.10am. One of the joys of having students organize these trips is that some of the accommodation is decidedly on the budget side. When I made it to my room I was not only greeted by a peculiar odour, but a patch of black mould growing on the bathroom ceiling that looks like the result of an explosion.

On Sunday the students had visited the old Dutch Fort Rotterdam and the Balla Lompoa Museum, the Palace of the Sultanate of Gowa. Wallace was there but apparently the palace is not the original building that he visited. On Monday the students were hosted by members of Hasanuddin University and heard presentations on local planning for Macassar as a ‘smart city’.

Sulawesi expedition day 3

22 May 2018



Route from Makassar to Malino Tea Plantation. (Strava)

7 down for breakfast which was one of the worst hotel buffet breakfasts I have ever had. The fried rice was ok but cold. Everything else I tried was pretty horrible. The breakfast area is swarming with mosquitoes. The students came down later.

8.08 we depart on a small chartered bus for a trip far inland to the

Malino Tea Plantation. The chaotic traffic of Makassar has to be experienced to be believed. In addition to the ubiquitous motorbikes, here one also sees a sort of trishaw powered by motorbike. These seat two passengers in front of the driver. We went past endless local stalls. I also saw at least three old women with one leg or no legs sitting on little trolleys and punting themselves along with a stick on the side of the road with a begging bowl. This looks like an extremely hazardous profession.

As we headed east out of the city the roads became worse and worse and the potholes more frequent. Eventually things became more rural and occasional rice paddies could be seen behind the small locally produced houses. In some of the rice paddies were Bali cattle grazing and occasionally a pony. These fields seemed all rather small and not well tended compared to their manicured Bali equivalents. Some of the houses were built in the traditional style for south Sulawesi, on stilts with crossed gable beams. I read that these represented buffalo horns. As we drove on the road started to climb into the hills and to wind this way and that. We skirted a huge lake, Jeneberang. Its water level seemed to be low judging from the brown rings around the islands and shoreline below the vegetation. Fishermen in small outriggers dotted its surface.

9.40 Deeper into the mountains an endless series of lorries trundled past us on the narrow roads carrying gravel or riverbed stones. The river valley below on our right was mostly dry and it was the most extensive region of rolled and rounded river stones that I can remember seeing. Vast parts of it are being quarried.

10.40 we continue to climb twisty roads up into the mountains. At this elevation deciduous trees begin to preponderate. I notice that the lower trunks are deeply gashed and small collecting cups hang to gather the sap.

10.45 we finally reach the gate of the tea plantation after a journey of 80km. The elevation is over 1000 meters. We buy tickets at the gate, 50,000 Rupiah (\$5) each. There is no one else around. It's a very quiet place. The clouds have come in and there is a bracing wind blowing. I am not dressed for this and it's quite cold. The driver takes us a little further up the hill on a road that is more potholes than road. All around us the rolling and partially terraced hillsides are covered with neat rows of tea bushes. The views are beautiful and it feels like we have entered a different country. In the far distance one can barely make out the lake but Makassar is lost to the horizon.

11 we alight at the top of the hill and are told that we take a winding path down through the tea plantation back to the entrance gate. The bus will meet us there.

The tea plants are all heavily pruned to keep them at about waist height. There is not much else to see and do at this place. There are some interesting and very tall lichens growing from the rocks, a snail and so on. There seem to be many European plants growing here,

including strawberries and elderberry.

Along the way down I saw a rusty sign pointing up a partially overgrown path. It read "Mini zoo". Intrigued I turned up the path. I saw a low wall topped with a chain link fence. Peering through my eyes widened to see a large crocodile sunning itself. It seemed utterly abandoned out here in the hills. Looking further there were actually more animals- and very interesting ones.

First were two tailless monkeys- I don't know what species



Malino Tea Plantation.

they were, but not the native black macaque I am so keen to see later. Climbing the path we

reached a dilapidated aviary. Inside were cages with two White-bellied sea eagles, a Black cockatoo, a kestrel and two other species of bird of prey. There was a local man there watering the birds. He spoke no English. He took out one of the eagles so that some of the students could hold it on their arm and take photos.

Then in a nearby hutch was a delightful creature- the Sulawesi bear cuscus. This adorable little animal has a face like a bear and tiny yellow eyes. It was placidly munching on some leaves. We saw another later on which came out of its sleeping area to sit next to us. We watched it for a long time, very close. We could even stroke its head through the fence. I could not see any teeth as it munched gently on some grass I gave it. The lower half of its tail was bare skin, to help with gripping branches. Two of its hind toes were fused and the big toe was completely pointing backwards to give it good purchase on branches. Despite the noise and the prodding, this sweet little creature quite happily and patiently endured our audience. Sulawesi is the furthest west that marsupials ever reached. The rest of their relatives live to the east towards Australia and New Guinea.



As for native wild birds, I don't think I have seen anything but swifts, sparrows and one bulbul. I don't see very many bird cages hanging in front of private homes and shops here as I would in Java, Bali, or Lombok. A curious difference.

12.40 we returned to the bus and head for some lunch.

1.11 the driver stops at a small roadside restaurant. Across the road is a new little mosque. There are little mosques everywhere. hhm the food was not very good after all- I had mee goreng kering.

2.40 we head on, having decided what to do with the rest of the day. First we will visit a nearby park called Pinus Forest. We arrived ten minutes later. This was really just a run down and essentially abandoned old park with the native pine trees left in place. A few former playground attractions were rotting away. I did notice a few types of very unusual lichens that grew into a paper-like flap to cover the stick they grew on. Also the needles on the pine tree were unusually long and lacked the usual stiffness of pine needles. One of the students found a gorgeous pale blue weevil. Wallace would have been pleased.

3.30 we left to head for our final attraction, the local market, 'Pasar sentral Malino'. So late in the day it was largely empty but there were several distinctive productions I had not seen before such as little bundles of a tiny pale flower and the local speciality of Markisa or the Milano passion fruit juice concentrate.

To an unpractised eye it would appear to be a squalid and filthy slum market with flies and fish guts rotting in the open gutters, chickens roaming at pleasure and the shacks and makeshift structures of the market in various stages of falling down and rotting. But such are very rural markets in many parts of Indonesia. Every time I turned a corner someone sitting behind a counter or on a bench would smile and say hello (though not in English). I'm pretty sure they were calling me 'tuan', or sir.

4.05 we pile back into our bus for the return journey to Makassar, with all the winding mountain roads and bone-jarring potholes, it's going to be a long journey. (The students mostly fall promptly asleep. Lucky them.)

I spend the time watching the houses and people and landscapes of south Sulawesi pass by. It's not unusual to see men and boys wearing the pici and headscarves seem to be worn by, perhaps, 50% of rural women and even quite young girls, but headscarves seem more common in the city. Some men and boys wear a sarong.



6.20 we finally get back to our hotel after dark. There is just time to freshen up before our dinner. *

7.04 out to dinner at a local restaurant around the corner. We have been invited by Najiran Syamsuddin, the adjutant of the mayor of Makassar. He and his officers are dressed in smart khaki uniforms. We are graciously invited into a private room in the restaurant. The waitresses then brought in a series of gorgeous plates of food, each more tempting than the last. For a starter we had otah otah; this was much paler and less spicy than the one I know from Singapore. Najiran recommended we try a local fruit juice, Terong Belanda (tamarillo). It is remarkably refreshing, pink and with hints of sour and sweet overtones. A little bit like guava perhaps. Next is a pale asparagus soup. Also delicious. Further plates arrive. There are prawns in an onion sauce and two huge fish cut right down the centre and grilled. The first is called a kanake and two more plates arrived with large grouper. Then plates of fried squid rings and vegetables. Najiran tells us many interesting things about Makassar and never stops encouraging us to eat more. Keen to please our friendly host, I obliged by taking more and more onto my plate until in the end I feel as stuffed as a Christmas goose. It was a very enjoyable evening.

At 9.15 we say goodbye to our hosts and thank them for the generous feast. Tomorrow another adventure awaits- Maros.

Sulawesi expedition day 4 23 May 2018



Route of the team on day 4. (Strava)

8.15 we leave our hotel in the same bus with the same driver, Herman. We are headed for the Maros district, home to the Bantimurung-Bulusaraung National Park and its famous waterfalls. Wallace and his assistants travelled there 161 years ago in September 1857. The district is distinguished by an extraordinary geological feature. Out of the flat plains full of rice paddies and houses built on stilts along the roads, rises limestone mountains with sheer vertical sides, fully 90 degrees. Such formations are known as karst hills.

Reading up on Maros and Bantimurung I found that Karaenta Nature Reserve (a bit too far away for us to visit) is noted for the Moor macaque monkey (*Macaca maura*). So the mystery of what species of monkey we saw yesterday is solved, it was the Moor macaque. That there should be two species of monkeys without tails in Sulawesi should not be surprising. Presumably they are cousins. It is also no coincidence that monkeys that live primarily on the ground have lost their tails.

9.12 we arrive at Ramang-Ramang along a small river. Here we alight and at the little dock are several brightly coloured little boats, all locally made of wood. They have a primitive and interesting rudder and a small 2-stroke engine in the middle of the boat with a straight drive shaft leading to a very small two-bladed propeller. I have never seen this style of boat before.

With the little engine making its pop pop pop we headed slowly upriver. Right away there was a small minefield of razor sharp limestone crags right in the river.



The boatmen steered between them precariously close. The narrow river was lined with mangroves and especially nipa palm. Occasionally there was a small house on stilts or fishermen's traps of bamboo. Then the massive vertical cliffs and rock formations began to tower around us on all sides. The surface of the limestone is pocked and carved into incredible shapes by the action of erosion. In some places massive pieces of rock, a whole hill it seemed, had been hollowed out beneath and remained balanced on top of a narrow column. There were many overhangs like this. One was big enough for some men to store their boats underneath. With 100 hundred feet of rock balanced just above this was incredible to see. At one point we even drove under a low stone archway hollowed out naturally from this stone. It was so narrow I could have reached out and touched the stone beside the boat. I saw a kingfisher, blue and white, not dissimilar to the collared kingfisher but I never heard its cry; also a very small species of duck and the usual small herons. We also passed under some rickety bamboo bridges that were just two or three poles lashed together plus thin hand rails.



The village of Berua.

9.44 after travelling 3.1km we landed at the tiny and remote village of Berua which is nestled in a valley surrounded by enormous vertical towers of grey limestone mostly covered in tropical vegetation. It is a beautiful spot. Immediately there were many species of butterfly all around us. The village was just a few scattered houses on stilts. Mostly it consisted of square shallow ponds full of algae and many fish, I presume fish ponds. There were also some rice paddies. We walked along the dikes between these ponds and fields following signs for a cave. When we got there a thin dark man with no shirt on was clearing vegetation with a parang. He motioned for us to come up the steep slope. The path over the broken limestone was barely visible. The cave itself was a small chamber and the man seemed to think the only reason for visiting it was that some of the limestone shapes resembled a head, an elephant, a tongue when seen from a certain angle. I thought this a complete waste of time. The cave itself was interesting with its evidence of the flow of water down its sides for hundreds of thousands of years. There were many fantastic and beautiful shapes as well as small stalagmites.

At the narrow back of the cave I saw, using the torch on my phone (flash) a handmade ladder, bamboo poles and some rope. There was a narrow crevice in the ceiling. The man climbed up it and then encouraged me with gestures to follow. It was a little slippery but above all a very tight squeeze and you had to take your feet off the top of the ladder and put one foot on the rock and pull yourself up with two ropes, one in each hand. This was made tricky by the fact that you couldn't see anything. Once up I was in a low narrow chamber. I used my phone again to look around. More intricate and beautiful shapes festooned the walls. And then one by one all of the students climbed up. I don't know how we all managed to fit up there. There were tiny crystals in some of the formations which the guide said were "diamonds". I've heard the saying that all that glistens is not gold. It's not diamonds either. Someone spotted an enormous spider on the wall almost as big as my hand.

10.45 having seen this little cave we emerged back into the light. The students then spent ages taking photos of each other.

We saw further signs for something called the 'stone hills' so we followed them through

the rice paddies and fish ponds. Back out in the sun it was very hot. There was then a short climb up the broken limestone to a small level plateau with 5 or 6 sheds on it hoping to sell water etc. to tourists. There was nothing else to see. However the view over the valley through which we had passed was very fine.



The view from the 'stone hills'.

I found a shortcut back to the jetty where we arrived at 11.25. The return boat journey was just 23 minutes. Back aboard the bus we headed on towards Bantimurung. As we travelled the countryside took on an eerie almost surreal appearance. Instead of just lush green rice paddies, these were now dotted with grey craggy limestone spires, boulders and sometimes naturally eroded arches. All of these were signs of how close we were coming to the karst hills themselves.



An eerie landscape.

12.25 we stopped at a tiny place called Leang Leang to visit the Leang Petta Kere cave. The Karst region has almost 300 known caves. Here we paid a small fee to enter the park and to have a guide (who spoke only Indonesian). After a short walk through a park strewn with strangely eroded and sometimes tree entwined limestone blocks, we climbed up to the cave entrance. Finally one must climb a rusty metal stairway which has a locked gate near the top. The guide unlocked it and we climbed up to a narrow ledge under a massive overhang with stalagmites the size of a car hanging from it. Standing nervously near the edge, I looked up at the

wall above and there it was. Wow! On a dark patch of stone were many distinctly white handprints made by blowing red ochre onto the hand as it was pressed on the wall. The outlines were so crisp one would think they were made yesterday. In fact it has recently been determined by a team of archaeologists that some are an astonishing 39,000 years old- which would make one of them the oldest known cave hand prints in the world. The other surviving features were two red babirusas, the endemic Sulawesi wild pig. These latter had clearly been painted long after the hand prints (of which there are 27, some very faint or only partial). Some of the colour from around the handprints had fallen away on flakes of stone. But some of these white patches were painted over with the dark red of the pigs' bodies. They were also painted over some of the handprints. These paintings would have been made by the first wave of modern humans to sweep through Southeast Asia. They would have looked like aboriginal Australians rather than the Malay races that later replaced them. It was such a privilege to see these tiny traces of a human world so long gone. Recorded history is only 7,000 years old. These will undoubtedly be the oldest human artefacts we will see during this expedition.



1.27 we depart again stopping only to get some snacks. We pass through many charming villages of Bugis houses on stilts (often) with their crossed roof beams.

2pm we reach Bantimurung national park. This is the off season and almost all of the tourist souvenir stalls are closed. Unusually, most of them sell butterflies in cases or otherwise preserved in some way. Here is an actual living example of Wallace's profession still being practiced in one of his most exceptional collecting grounds. The staff at the entrance tried to rip

us off more than usual but our Malay speaking students talked them down.

We walked into the park along the path in the shadow of the limestone cliff on our left. The river flows between two of these so one is in a deep and narrow ravine. When in sight of the famous double waterfall I spotted a swarm of butterflies. These were of many species. There were turquoise ones, yellow ones, black ones, orange ones, white ones, like a flying kaleidoscope of colour. The flashing colours that fluttered all around was simply breathtaking. I just felt like constantly shouting 'wow!' It is worth travelling many hours just to experience the swarms of often very large and very beautiful butterflies of Bantimurung. I have never seen anything like it anywhere else.



We climbed the 116 steps beside the waterfall and followed the path along the river upstream under forest cover on the left bank. Here is another wondrous sight. The river is a milky blue colour. This comes from the dissolved limestone in the water. When I was here in 2012 the colour was even more vibrant blue, like a tropical lagoon. More butterflies constantly interrupted our walk as we tried to get close for a photo before they fluttered off again.



Bantimurung waterfall.



Eventually you reach a small waterfall across a broad pool in the river and beside it a further flight of steep steps. This leads up to the Bantimurung or Goa Batu cave. As I entered this much larger cave it was obviously very dark and there were no lights. I took out my phone and used its torch feature again which was enough to explore. The cave had high ceilings which were festooned with many bulbous stalactites. I could see tiny bats the size of a mouse hanging in some indentations in the roof. Eventually a lot of noise showed that the students were catching up.

Deep into the cave at a large dome like chamber I asked everyone to squat down comfortably and then turn off their lights and sit absolutely silently for a minute. We did. All that could be heard was the echo made by water dripping from the roof of the cave. There is nothing blacker than the eternal night inside a cave or mine shaft. We turned our lights back on and crawled through a low passage into another large chamber and then another.



Cross-section of a broken stalactite.

Sadly all the stalactites that hang low enough for human scum to reach have been broken off and many of the walls are daubed with names. This makes me very sad, and angry. However, I could show the students the cross section of a broken stalactite which reveals growth rings almost like a tree, allowing the age of such cave features to be worked out. Water dripping down them leaves behind a little mineral build-up. A stalactite grows less than 10cm every thousand years. Sometimes they are tens of thousands of years old.

We left the cave again and returned to the waterfall. The students wanted to take a dip so they quickly changed and got in. I was tempted to join them but thought I would go back to the spot where the butterflies were swarming. I can swim anywhere but such a super abundance of unique butterflies I have only seen here, and may never see again. I was glad I did because now beams of sunshine were illuminating the area and there were even more butterflies. They seemed to be landing to drink salty water from the mud. I took countless pictures and films of these exquisite creatures fluttering about just inches from me. Bantimurung never disappoints.

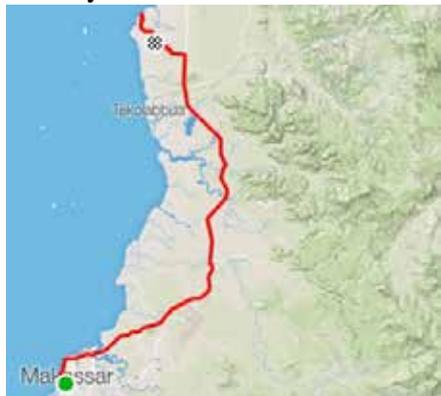
After a while I walked back to the waterfall and some of the students were sliding down in the current along the smooth gentle rock slope below the falls. Eventually four of them were gathered at the bottom of the slope, standing in ankle deep water. Up at the top some 100 or so feet away I saw three young local men hop on their inner tubes and head down the water chute. I thought they might run into the students who were standing where the stream reached the level part of the river. Since they couldn't hear me over the din of the waterfall, I pointed conspicuously at the first inner tube while looking at the students. One of them saw me and stepped slowly aside while the first two inner tubes skirted to their right. The other students did not turn around. Then the third inner tube came right for them and in a terrifying instant struck one of the ladies on the thighs and sent her toppling face first towards the rock. She landed on her face. I threw my hands up to my mouth and uttered 'oh god'. My first thought was that she would knock her teeth out. The others gently picked her up and I saw her holding her chin. I hopped down the rocks to have a look. The poor thing was holding her chin and showed me. It was a deep short gash which was already swelling along the edges with dark red blood dripping out and staining her hand. I said I feared this would need stitches and sent them to get their things and go back to the entrance.

One of the others then told me that her specs went missing when she was hit. It seemed impossible to find spectacles again in a fast flowing river of milky water. But as there was some time I asked four of the students to look as best they could. I then followed the current with my eyes and walked down where an object might have flowed and been deposited. To my surprise I actually spotted the glasses in shallow water not far from the bank. One of the students retrieved them. That was lucky.

Our injured student was taken by one of the park officers to a local clinic along with three of her companions. There it was decided she needed stitches. But the clinic was out of thread so they had to go get some. In the end the poor thing had three stitches and was given iodine, saline, gauze, tape, antibiotics and pain killers. This was very kindly done and there was no charge. Later the rest of us took the bus to the clinic and by 5.45 we were all on our way back to Makassar. We reached our hotel at 7 and half an hour later walked to a nearby Indonesian restaurant for an excellent meal. An eventful day indeed!

Sulawesi expedition day 5

24 May 2018



To Pangkajene, mangroves and fish farms.
(Strava)

7.15am we are met at our hotel by a young lady named Kiki wearing a long-sleeved shirt and a blue headscarf. She is from Blue Forests, a conservation organization dedicated to preserving and restoring mangrove forests. She will be our guide today. Kiki studied broadcasting but now works in conservation. This is her first trip as a guide. They take us in a chartered bus to the remote Bontomani village in Labbakkang district, Pangkajene region, about 60-65km to the north of Makassar.

South Sulawesi once had 110,000 hectares of mangrove forests. Now 80,000 of these have been cleared for timber, firewood and conversion to Tambak- brackish water ponds for producing fish and prawns. In the early years this process was encouraged and facilitated by government in order to increase national productivity. The loss of the mangrove habitats leads to manifold bad consequences, not least of which is a loss of biodiversity.

8.28 we turned left off the main road and headed through rural rice paddies on a very bad narrow road.

8.33 we pull up to a decaying local mosque and the driver is talking to someone on his mobile- I think we are lost. Yes we are. But instructions soon reach him and on we go. This is really off the beaten track. Local people hear the unusual sound of a bus and come out of their houses to see what's going on and then stare in amazement at the faces of foreigners looking out of the windows. Usually the people smile and sometimes wave. In the smallest villages I sometimes see women wearing only a sarong tied under the armpits to wash clothes by their well or doing other chores. The road is soon just a narrow lane on a levee in the middle of fields and shallow fish ponds. Motorbikes frequently come along and have to pull onto the narrow verge to allow us to pass.

The Bugis houses in these rural areas are usually the traditional style- on stilts about 7 feet above ground with a porch and wooden stairs leading up. The charming crossed roof beams and usually some ornate balustrades, panelled wooden facades and shutters are extremely interesting. Often they are brightly painted. I find them utterly enchanting and can't stop taking pictures of one lovely little house after another.



Traditional Bugis houses.

At 8.45 we arrive at the small village of Bontomani in the midst of this vast plain of ponds (flooded fields seems a better phrase for their appearance). The bus has stopped in front of the very simple local school and the children and teachers all come out and crowd around their gate to watch the unprecedented spectacle of foreigners appearing in their village. One of the teachers, a lady in a yellow and red headscarf, offers me her hands and says in almost incomprehensible English "hello Mister. My name is..." and here she got stuck and paused for a moment. Then the excitement and embarrassment of the moment caught her all at once and she burst out in a hysterical fit of laughter- even clapping her hands and jumping up and down. All the students laughed with her.

Waving goodbye to this group of enthusiastic onlookers, we walked around the corner to a very disused little building which was the local government office- clearly it was normally empty. We were seated in a small meeting room under cobwebs and mould and rotting window frames. Many local people were milling about- all smiles. The chief of the village (kepala desa) was there to greet us with a short speech. The chief was in fact a lady- Andi Sempusia. She spoke in Indonesian and then three others spoke to us in Indonesian or broken English- Kiki translated. A lady named Yayasan Hutan Biru was the expert from Blue Forests and she gave us most of the detailed information for the rest of the day. (Through the door I could see the school teacher across the road telling the story of her handshake with the foreigner at the village shop and continuing to laugh hysterically.) What entertainment we provide!

There are 600 hectares of fish ponds in this district. Once it was all mangroves. No one knows how long this practice has gone on here. The population is 3000 with 900 heads of families. One of the speakers was from the Ministry for the environment. He said this village had the best example of sustainable fish farming in the country- thanks to the help of Blue forests from 2010-2014. The organic fertilizing is only practiced by a small proportion of the fish

farmers. The others continued to use chemicals. We were told that this often caused the “mass death” of the fish in the ponds or eventually caused some of the ponds to become unusable- as when the salinity grew too high for the fish or prawns grown there.



9.25 we board the bus and are driven further into the maze of flooded fields on an incredibly narrow levee.

9.40 we reach the area where we are to learn about mangroves. But first one of the students needs to go to the loo. There is a cluster of three or four houses under shady trees beside us so the students were taken to use one of these local outdoor toilets. I saw the mother from one of the houses raise a bucket of water from her well and then walk over to the outhouse. Obviously it had no running water and this was the only way to flush, with a small hand pail. While we waited I walked all around these delightful wooden houses and the local people were lounging about on their porches or benches out front and they stared and smiled and were as friendly as any people I have ever seen. They kept goats and ducks. Under a stand of bamboo I saw what looked like a miniature table and kitchen with old clam shells lined up on them. This was obviously where a child had been playing who had no ready-made toys but made her own. At the back of one house a woman sat on the ground by her well and scrubbed the laundry with a soapy brush. The architecture of the houses fascinates me- the way the beams are

joined and fastened- very ingenious and also attractive.

We then walk to the coast where some mangroves grow. In fact there was just a narrow ribbon of mangrove clinging to the shoreline and all inland was dykes and fish ponds. Once the mangroves had extended inland for miles.

Most of the replanting of mangroves by the government fails- and the reason is interesting. Mangroves are adapted to live in intertidal areas where the water rises, lowers, and drains away during a day. But heavy land use means that only the very lowest part of the slope into the sea is free to plant trees- i.e. the part that the water never leaves- and thus it is not suitable for a full mangrove environment. The students were taught to recognize the different species of mangroves here and their different features, the aerial roots, fruits, propagules, different leaves and so forth. It was stifling hot and I was glad when two vans arrived to take us back to the bus at 11.50.



On our drive back a dozen Bali cattle were grazing along the narrow levee road. The driver revved his engines to get them to move away- but as there was no shoulder- they just trotted along in front of us, briskly whisking their tails at the cloud of small flies that hovered over each animal. Eventually we got past the cows.

Kiki then gave each of us a box lunch of white rice, boiled egg, a piece of tofu, some vegetables and a dark sauce that was both sweet and savoury. She and Hutan Biru and several of the others then excused themselves as they wanted to go pray in the local mosque- which was the smallest mosque I have ever seen, smaller than a house. But it too had a loudspeaker calling the faithful to prayer.



Walking to an organic fish farm.

At 12.30 they returned and we headed out for an example of a successful organic fish farm. Stopping by a small house amidst the fields we were again the subject of great attention by the inhabitants. A smile and a wave seemed to be the thrill of the year to them. We then walked along very narrow earthen dykes through the fields to the fish ponds of a small man named Amir. Uniquely, his ponds were surrounded by saplings that shaded much of the water and kept it cooler. While the students listened to information about the organic farming, Amir took his casting net and walked to the other side of one of the ponds and cast his net a few times. Once he was successful and he caught three beautiful Milkfish with sides of sparkling silver. He pressed his thumb behind their skulls to kill them and then brought them to show the students. Hutan Biru explained the differences between these 'organic' fish and the usual ones grown in fields fertilized with chemicals.

1.34 we returned to the bus and drove back to the little government office in Bontomani village. Sitting in a circle the students shared what they had learned about their chosen mangrove species and answered questions and made suggestions to Blue forests. It was awfully hot and several fans made a refreshing breeze. In the open doorways and windows about a dozen local children crowded together to stare in at the foreigners. Eventually they would slowly creep inwards. Then the sole policeman in his dark brown shirt and trousers would motion at them, very unaggressively, to get out. They instantly obeyed but after ten minutes or so their insatiable curiosity got the better of them and they were inching further in again. In the end the policeman just ignored them and they came in and sat nearby to listen and watch.



As we were preparing to leave I could not resist the temptation to go into the very tiny little roadside stall or village shop across from the school to see if I could buy some local snacks or drinks. A pretty young woman in an unusually full-body head scarf smiled and motioned for me to come in. Her outfit is called a karudung which showed that she had probably recently gone to prayer. She spoke no English but I smiled and

pointed at this or that and asked if she had "ice kopi" which she did and took from a refrigerator. She called to her mother who came out to help with my purchases. I also took some locally made fried crisps that were covered in honey. The ladies were beaming with smiles so I asked with gestures if we could take a photo together. They laughed and the mother quickly pulled on a green hijab and we took a photo. By now some of the students had come in to see what on earth I was doing in this little shack. Some of them then bought drinks as well. About thirty village children had by now gathered outside and beside our bus and the atmosphere was full of laughter and smiles. We waved goodbye many times and started the long two hour drive back to our hotel in Makassar where was said our warm thanks and goodbyes to Kiki.

6.30 went out for street food with four students. We had some of the local delights like Coto Makassar, Kuah rawan and Buras.

Along the waterfront is a row of small stalls that seems to stretch to infinity. Bizarrely, they almost all offer the same things- mostly Pisang epe- flattened and lightly roasted banana. (I didn't like them much, rather dry.) The owners of the stalls clap to attract customers walking by. Seeing me, a westerner, a chorus of claps erupted which was very distracting. In fact during the whole evening of walking all over the place, I never saw another westerner. This must partly explain the extraordinary attention I excited everywhere I went. Everyone would look, stare, smile or shout out 'Hello Mr.' Some would come up and ask to take a photo with me. Many girls would smile and blush or even wave. What a crazy experience. Our last stop was to have some cold drinks in a restaurant. On the menu I spotted something I never saw before- a taro smoothie. It was excellent with just a hint of tapioca. Another long day done. Tomorrow we fly

to Manado on the north side of the island.

Sulawesi expedition day 6

Last day in Makassar and south Sulawesi

25 May 2018

At 9.51am, having checked out of our hotel but left our bags there for safekeeping, we took Grab cars for the short journey to the residence of the mayor of Makassar, Danny Pomanto. This meeting was helpfully facilitated by STEER. The residence is a very large and very modern style of structure behind a wall and steel gates but otherwise on what seemed quite an ordinary street. Mr. Pomanto and his aides came down the marble steps of the entrance to greet us with great kindness and warmth.

Inside the floors were all shiny marble. We passed through a sitting room with enormous crystal chandeliers and a mini grand piano. We were taken to a large meeting room with a long granite-topped table. It was already laid with crystal cake stands with traditional little Makassar cakes. One of these, Barlonko, is a sort of steamed banana pudding wrapped in banana leaf. This was simply divine. Mr. Pomanto kept encouraging us to eat more of the cakes. I normally don't take cakes or dessert but of course I wanted to try all of these delights which are unique to Makassar. They were so interesting and new to me, and so delicious, that I ended up eating more sweets than I have in years. Luckily tea and coffee were also served. Later Mr. Pomanto's daughter joined him, wearing a blue hijab. She studies architecture, as her father did. She or his aid would occasionally supply him with an English word if he could not remember it. His English was, however, very good.

After the initial pleasantries Mr. Pomanto launched into an elaboration of his 'smart city' plans for improving almost everything about Makassar, including a system of free healthcare. In response to a student's question about environmental conservation, he said that a sub-component of this high tech system could monitor the condition of mangrove forests and ocean pollution levels. Holding up his mobile, he showed us one of the grand building schemes which he had designed. The project had made a large area of re-claimed land offshore and would later include, apparently, high-end hotels and shopping centres etc. There was much talk of the power of his CCTV surveillance system that could see through walls and zoom in from kilometres away. During our time here we heard of several very grand projects initiated by this charismatic mayor.



I wonder how much all of these cost? At the same time the filth and pollution here is unbelievable. The drains, which one sometimes almost falls into because drain access covers are often missing on the pavement, are a horror of putrescent stench that words cannot describe.

The poverty is heartbreaking. As I type these words a little boy is singing at the driver's car window (on our way to the airport). The boy is standing in the middle of a four lane road at a traffic light, in the rain. And he is not the only one. The traffic is also unbelievable. Clearly the mayor has his work cut out for him. He told us many interesting things about Makassar and it turned out that he was very interested in Darwin and Wallace.



At noon we all went to the steps of the main entrance to take photos and exchange gifts. The students had made a combined silhouette of Singapore and Makassar by winding red and white string around a series of nails on a block of wood. In return the mayor presented us with a framed plaque with a very fine relief carving of a pinisi (a Bugis sailing ship) carved from silver. The mayor then shook all of our hands and headed off to pray at the mosque as it was Friday afternoon and Ramadan.

12.15 the mayor's staff drove us back to our hotel. Half an hour later we had booked Grab cars to take us to the airport. We had about three hours before our flight. After a quick lunch of Coto Makassar (a delicious salty beef soup) we checked-in and I wandered through all the shops in the airport. Again there were pinned butterflies for sale, though in gaudy frames. I think I saw only one or two other westerners in the airport.

Manado, North Sulawesi

Citilink flight QG307 transported us in less than two hours all the way across this sprawling four-limbed island to the port city of Manado on the northernmost peninsula. We landed after dark so I haven't seen much yet- but what I have seen so far is fascinating. Unusually in Indonesia, the most populous 'Muslim country' on Earth, Manado is mostly Christian (67%). This stems from the fact that the Spanish and Portuguese controlled this region for many years. Their territories in what is now Indonesia often became Christian. The Dutch furthered this with their own missionary work, which is unusual since they had almost no success converting other parts of Indonesia.

Our hired van drove us in half an hour 14km to our hotel. This was a very interesting journey in itself. As soon as we began to leave the airport there were illuminated crosses along the road. Next one could not help noticing that there was a large church on almost every block. There are many ethnicities here and nine local languages. Therefore all of the differences between Manado and Makassar cannot be attributed just to the difference of religion. These are different places with different peoples, languages, cultures and histories. Wallace observed in the 1850s "The inhabitants of Minahasa (as this part of Celebes is called) differ much from those of all the rest of the island." (*Malay Archipelago*, vol. 1, p. 379)

From the very outset we could not help noticing how good the roads were- no potholes.

The traffic was flowing smoothly and was not so congested or so chaotic as we had in the south. Our driver was a Christian and spoke quite good English. I asked him many questions about the people here.

After checking into our very nice hotel, we went out on the streets for some local food. It is still very Indonesian- but differences are everywhere apparent. There are many people with curly hair, and their faces look different. The streets are full of bemos- blue vans that act as taxis. These have their large side door removed and all seemed to have lots of extra lights and all were literally booming with loud music. Loud music is constantly zooming along the roads- something I don't think I ever heard in Makassar. Since we landed I have not seen another European. Everywhere I go people practically stare- and when I make eye contact everyone smiles. Many say "hello Mr." or some such. In Makassar we were warned that the people here eat very strange foods- including even dog, cat, forest rat, and fruit bat. This place promises to be far more different and interesting than I ever imagined. I can't wait to explore more of Minahasa.

Sulawesi expedition day 7

26 May 2018

Most of the mainland area of North Sulawesi is hilly and mountainous. Its geology is complex because it is at the junction of three of the Earth's great tectonic plates, the Eurasian, Indo-Australian and Pacific. The Australian plate is moving north, the Pacific west and the Eurasian is driving south-southeast. This has both pushed up the mountains and perhaps even this whole part of the island but also creates the volcanic activity throughout this part of Sulawesi. Our main destination today is Lake Tondano. It fills a 20×30km wide caldera which was formed by massive volcanic eruptions in the Late Miocene or Early Pliocene. The giant crater then filled with water and is now a lake.

We left our hotel at 8.15 in a hired van with our local driver named Bemo. (When I asked, he explains that his name is pronounced Bēmo and the local transport is bemo with a soft e.) I had explained the route I wanted to take into the mountains which follows Wallace's from his time collecting here from June to September 1859.

As it was very close, I asked if we could stop first at the Sentrum Church, the oldest church in Manado, supposedly from 1658. When we pulled up I was disappointed to see an ugly modern building from the 1960s or so. Inside and out there was not an old speck to be seen. So back in the van we piled and on we went.

8.44 we reached the tiny village area of Lotta- amidst steep wooded ravines. Of course there is nothing to see here. Wallace described whitewashed wooden houses built on stilts painted blue. There is nothing like that here now. He was greatly impressed with the beauty and neatness of the landscape and the villages: "I had heard much of the beauty of this country, but the reality far surpassed my expectations." That is all long gone. The coffee plantations he saw seem now to have been replaced with coconut.

Now and then I saw a cow tethered in a field or hillside. These were totally unlike the fawn-coloured Bali cattle we saw around Makassar. The cattle here appear to be zebu cattle. They are white with a hump of fat above the shoulders.

Watching the houses and villages go by, I was struck by the completely different style of architecture here- the roofs often have numerous faux dormers and an elevated and smaller second level of roof on top which creates a pleasing effect. Some had fine woodwork and ornate balustrades. Almost every building in this region has a tin roof. Above Lotta the road winds heavily through an area that is mostly forest and deep ravines.



Houses of Minahasa.



9.18 we reach the town of Tomohon in the shadow of the picturesque and still active Lokon volcano which is almost devoid of trees on this side.

In this town there are flowers everywhere, and once a year there is a great festival of flowers. I won't dwell on the bizarre styles of church architecture here. They are unlike anywhere else. The styles appear to be just made up- and every last one was, to my eyes, the ugliest kitsch you could imagine. None is more than a few decades old. I have seen no fighting cocks here so far.

The market of horrors

9.40 Bemo took us to the Tomohon market which is notorious for selling snakes, dogs, cats, rats and fruit bats for human consumption. People from all over Minahasa come here to shop. The traffic was suddenly almost at a standstill as we tried to approach it. Once we alighted some of us went this way, and others that. We agreed to meet back at the van at 10.30.

The market area, mostly covered pavilions, was vast. Like most Indonesian markets there were baskets of an unimaginable variety of fruits, vegetables, spices and tools and much more for sale. One area had ladies selling brown spheres, about the size of a coconut, of palm sugar. Near them were ladies deep frying various small cakes. I bought one called a Cucur (the c's are pronounced ch) which was palm sugar and flour. It was not very sweet- very greasy but quite good. The market was very crowded and one had to push or squeeze past people everywhere.

Then the really eye opening parts of the market appeared. For readers who may be sensitive or squeamish about familiar domesticated animals being killed and butchered, you should skip these paragraphs to where there is another blank line. Really. This will be very, very upsetting for many.

The first unusual animals were large rats- these were blackened and hairless and slightly distended as they had been skewered on a stick and blasted with a blow torch. Some had very long tails. The poultry I don't need to describe, that's the same everywhere. There were also vast quantities of many kinds of dried and smoked fish.



Next came the most shocking sight. On a wooden rack were five dogs in the same condition as the rats. They looked like mummified corpses or perhaps something from Pompeii. So it is not just that the people here eat unusual animals, but they prepare them in a way I have seen nowhere else. Most heartbreaking for me was, right next to these dogs, a cage with about 15 mangy cats- awaiting their grim fate. While I stood there the man selling them took two cats and killed them with a club. He then lay them on the ground and turned on his large blow torch and singed off all the fur and essentially cooked at least the outer portion of the animals, turning them once. These were given to a customer. The cage with the remaining cats was only a few feet away. I was afraid some of the students might have been upset since they have never seen animals butchered or cleaned any themselves. I encouraged them to look at other things in the market but several were glued to the spot.





Across the path was another large pavilion which was the meat market. Here were large bloody tables with pig heads, legs and other meat and then many more blackened and distended dogs. There were also live dogs in cages, shaking with fear. I could not tell if these were strays- since they certainly looked mangy and in bad shape and not well fed- or if they were purpose bred. If I understood Bemo correctly, they are bred for the purpose. Next I saw a table covered in large fruit bats- these had had their wings removed and put in a pile and they had been similarly singed with a blowtorch. Is it not odd that only these four unusual foods are blasted with a blow torch and nothing else is? There must be a reason. Next were enormous pythons- probably 15 or so feet long- really gigantic snakes- hanging from hooks. They were already gutted. There were also two monitor lizards next to the headless bodies of some small wild boar. Elsewhere were boar heads and bodies of animals everywhere being chopped, weighed and sold to the many customers gathered there.

I went next to see the fish market area. There were some big ocean fish like tuna and many other kinds but the variety up here in the mountains was much less than one would see in a seaside market. There were some odd looking fish which I assume came from lakes and rivers

in the area.

I was walking back when there was some commotion amongst the people to my right. I saw people rushing in the same direction I was walking. There was also some shouting. I moved more quickly to see what it was all about and got my camera out. Then things just got more and more intense. Ever more people came running and pushing, from all directions now, no longer dozens but now a couple of hundred. The shouting grew louder. I saw a man holding a woman by the wrist and walking away- they seemed to be the centre of attention but there was nothing special about them that I could see. The crowds were not angry or afraid, the shouts and mood were more of excitement and even amusement. For a moment I thought the man must be someone famous or a politician. Then I learned that he was a policeman and he was taking away the lady, a pickpocket. Who would have believed there could be so much fuss and interest over a pickpocket? The crowds simply increased and followed this non-spectacle. It turned out that the police car into which she was deposited was only 20 feet or so from our van. The police car was mobbed with amused and curious onlookers pressing their faces against the windows. The policemen could hardly open their doors to get in. Once inside they shouted over and over on their loudspeaker for the crowd to disperse. The people took little notice and it was some time before the police car could make progress down the road.

I got into our van where all the students were already waiting. To my utter astonishment they had noticed nothing. They were sitting there in their bubble- talking amongst themselves and looking at photos and laughing a lot about little things and not noticing anything around them. This is the hardest thing about these trips- despite my best efforts they see a tiny fraction of the interesting things in these wonderful places. 10.35 we drove on.

10.48 we reached the mountain village of Rurukan which Wallace describes in detail in the *Malay Archipelago* (1869) as a “pretty and interesting village”. Bemo takes us to the top of a hill to take photos at a special little building built on the spot to milk tourists for just this purpose. The views of the lush hills around us, the deep ravines and the breathtaking landscape of green mountains ringed around were spectacular. Down below in the distance is the great lake Tondano.



View of Lake Tondano from Rurukan.

11.30 well after much talk with Bemo and the guide who runs the 'photo op shop' atop the hill, and much Googling in vain- it seems that that once famous Tondano waterfall is no more. It was at the outlet of the lake where today there is a major hydroelectric works. Sad. The waterfall was so beautiful that many artists painted, drew and engraved it before and after Wallace's time. In my *Annotated Malay Archipelago* I showed that Wallace was wrong when he told this story about the waterfall: "four years before my visit, the Governor-General of the Netherland Indies committed suicide, by leaping into the torrent." To find out what really happened- well, read my book.

11.45 we reach Tondano town. More hideous churches.

11.50 I ask Bemo to stop at some Bendi drivers because I thought the students would like to ride in pony carts. Besides I thought a happy experience would be welcome in case any of them were upset after what we saw at the market.



A Bendi in Tomohon.

12.09 we head on in the van.

12.20 we stop for lunch at a place chosen by Bemo. I had asked him if he could take us to a local place to try the fish. Instead we found ourselves in a large restaurant built on bamboo piles over the lake. I hope I don't visit another place so fake as this. Around it were suspended pens made of nets in which they farmed fish. The views of the lake from this place were, however, utterly enchanting. I ordered a local fish dish at Bemo's recommendation: Ikan Mujair kuah asam (mujair fish in sour sauce).

The students proceeded to order as they always do. For some reason I am snapping out of my long familiarity with Singaporean ways and today became very conscious of how differently they order. No one seems to order their own individual dish- even though that is all the menu had. Instead each side of the long table formed a group in which they discussed at great length how they could order this and that and "share"- a word they repeated many times. This committee-like discussion went on for about 15 minutes. Near the end one student prompted the others, what about drinks? More debate and discussion followed. Obviously I am from a more individualistic society, but in this context it certainly is quicker if each person gave the waitress an order. Waitresses automatically ask if you want a drink. At the end of the meal they engage in another group discussion about settling the communal bill.

(Actually I think I was being over cautious- they all seemed perfectly fine.) We piled into the brightly painted and cramped little carts in twos or threes. The short trip clip clopping down the road was only Rp 5000 each for about five minutes. These often very old carts were seemingly identical to those I have seen and ridden in on Lombok, Gili Air and East Timor. We stopped at a very ugly and decaying memorial of some kind. I saw a man selling snacks from the back of his van- and something new- I bought Bijibiji (?) fried crisps with ginger. Not bad.



The restaurant on Lake Tondano.

The food was not coming so I went for a walk down the road. There is nothing along the lake on the west side but such tourist restaurants built over the water. I saw some of the narrow boats that locals use on lake Tondano. These are totally different from those near Makassar. These had no ribs or indeed almost anything- they were extremely simple, just a flat bottom and sides and narrower but also flat stem and stern. Two or three dividers crossed the boat to form compartments- that was the only strengthening in that direction. Some were powered with an outboard and others were paddled.

Our lunch only arrived at 1.40! (Even though the place was mostly empty.) My fish was not to my taste. The “sour sauce” was basically a bowl of water with some leaves in it. I tried one of the fried snacks. It was a flat, brown, fried wafer, called a nike perkedel. Yikes, very fishy indeed. Once I saw the cross section of the inside I recognized it from the market. I had seen what looked like a bowl of slime but was actually tiny fish the size of a pencil lead. Something tasty was a dish of fried papaya blossoms with spices.

2.47 finally on our way again. The cancer of tourism is spreading along the south-western side of the lake. Restaurants and resorts are for some stretches all that one sees. Bemo says the next Wallace site I would like to visit, Panghu, is hours away so I settle for the next best thing.



A boat on Lake Tondano.

What Wallace had seen there were hot springs and “mud volcanoes” and Bemo said he could take us to some close by. So we continued on the road around the lake until a village road was

blocked by cars for some reason, either an election or party, it was not clear. So we took another road away from the lake.

3.45 Bemo stopped in a small village on the plateau beside the lake that makes pottery. The potter whose house he stopped at made very large pots from local clay on a foot-spun wheel and fired them in his own kiln behind the house. With some of the pots I looked at he had cheated and painted them rather than glazing them. I walked down the single street of the village and took pictures of some of the more attractive traditional Minahasan houses, so different from those in south Sulawesi, and also exceedingly charming in their own way. Back at the potter's I saw one of these white cows in the field behind the house. I went back to introduce myself. It was a young female and she was very tame and let me pat and stroke her. She had just the beginning of the lump of fat above the shoulder blades but she did have a huge flap of skin hanging from her neck. Once the students saw me with the cow many of them came over to touch her and take photos. By now the young children of the potter or the house next door were standing about watching us bizarre foreigners. They had very different facial features and paler skin than the peoples of the south. Their noses are recognizably similar to each other but I'm not sure how to describe the appearance.

3.55 we head on through fields of maize with many cows grazing tethered here and there. Farmers use small two-wheeled carts, pulled by cows, to transport the harvest back home.



At 4.20 we arrived at Bukit Kasih, a volcanic vent and hot spring. A whole hillside is bare rock of many colours, particularly patches of yellow sulphur, and clouds of steam rise out of the ground from several places. A small stream of scalding hot water gurgles down past the shabby restaurants and gift shops. At the top of the hill there is a church, a mosque and temples of other religions. How odd- since volcanic gasses emitted by a volcano need not be holy for any of them. Perhaps reverence for these sites predates these later religions to arrive in Sulawesi. We climbed up to get a closer look at the vents. The smell of sulphur was often very strong. There were many kinds of volcanic rocks and it reminded me of climbing Krakatoa, but here there were many more sulphur deposits, sometimes in thick yellow chunks around a vent or even in intricate assemblages of tiny crystals. Even the ground was hot. I knew how to show the students something surprising. I took a rock and scraped a little hole in the ground an inch or two deep. At the bottom the ground was too hot to touch. Whereas the surface right next to the hole was

only lukewarm. There were also patches of cooled lava and broken ejected scoria everywhere.

5.25 we head off again. A minute or two later the students were giggling and laughing about the photos on their phones – when outside over the fields I saw a huge owl swooping and sometimes almost hovering over a field, it circled so one could see it for quite a long time - very close. Bemo stopped and I ran out to make a film but the very second I got in position by the side of the field, the owl landed in a tree. The students and Bemo all had a good laugh.

5.46 driving through a small village on the way back I saw a man strike a long cylindrical metal bell hanging by the road. Bemo said this was the sign that someone has died. It soon grew dark even though we had a long drive back to Manado ahead of us.

So after only one day in Minahasa I can see that almost everything is so different that you would never know you were on the same island as the south. Tomorrow another adventure awaits.

Sulawesi expedition day 8

27 May 2018



Manado to Tangkoko. (Strava)

Getting an early start, we leave the hotel at 7.15 heading for Tangkoko Batu Angus Nature Reserve on the far eastern end of the peninsula. The reserve is 8,700 hectares of forest and mountains. I read online that the park is home to “127 mammal, 233 bird and 104 reptile and amphibian species. Of these 79 mammal, 103 bird and 29 reptile and amphibian species are endemic to the island.” It is believed that between 1978 and 1993 the endemic Crested black macaques declined by 75%, the Maleo or brush turkey by 90%, and the Sulawesi bear

cuscus by 95%- all from poaching. How sad.

Unfortunately for me we can't follow Wallace today as he skirted north past Klabat volcano, through Lumpias and collected at Likupang. The range of much of the wildlife has shrunk to the tiny islands of nature reserves.

I read that some nasty insects could crawl up our trousers and be quite unpleasant at Tangkoko so I asked Bemo to stop at an Alfamart where we all bought some long socks so that we could tuck our trousers into them (as Wallace himself did) to keep out the little beasts.

About an hour later we reached the nature reserve entrance which is just a dirty and rusting gateway and a crumbling car park big enough for about a dozen cars. Here we met our guide for the day, an intelligent looking man named Anteng. We set out on our excursion into the forest at 9.20. I walked up front with Anteng. He is about 45 and has been working as a guide here for fourteen years. He tells me he was actually born in this forest, as his father was a ranger before him.

I asked about the Babirusa, hoping there was a small chance we might see some of these bizarre wild pigs unique (endemic) to Sulawesi. Anteng told me that they had been exterminated in the reserve by poachers. Gosh. He says there are only five rangers to protect the entire reserve. However things are not as bad as they were. Harsher penalties for poaching seem to have deterred most people and the macaques are no longer killed, he said. About ten years ago three men were caught and sentenced to five years in prison and fined two million rupiahs. One wonders if this would work elsewhere?

A few minutes later we turned off the dirt road and headed right, away from the beach, into the forest. It was not a very dense forest as tropical forests go- for the most part and it was quite dry, this being the season. There were however many very mighty trees- real giants with great curvy buttresses sprawling out to support them. Throughout the day the forest treated us to an ever changing chorus of the calls of birds and insects. Every forest is unique in this way, and indeed every part of it differs as you move through it. I made some sound recordings of this

one.

One of the first things we saw was a large greyish-black millipede. These in fact turned out to be the most common creature we could see in the forest. Between the buttresses of a tree, Anteng showed us a short plant stalk just a few feet high with several fruit-like objects on it, almost like dates. The ones at the top were red, in the middle yellow and those at the bottom were green. He said this was the fruit of the Rafflesia – the largest flower in the world. The plant is actually parasitic on other plants, and lives in their tissues underground. I thought it was only seen on the surface when it flowers, because that is all one ever sees or reads about for Rafflesia.

Eventually we saw several magnificent birds, all of which are endemic to Sulawesi. The first was a female Green-backed kingfisher. Later we saw two small Tabon scrubfowl, an Ochre-bellied boobook (a type of owl) and a species of Drongo. I was lucky enough to be the only one to see an Ashy woodpecker on a tree. Strangely for a woodpecker, its pecking was very quiet and slow- like some sort of stealth woodpecker.

Anteng took us to a special tree he knew- a nesting tree for a family of Tarsiers. It was covered in a strangler fig so there was a maze of nooks and crannies for the tiny creatures to hide in. These Tarsiers could sit comfortably in the palm of your hand. They have large eyes and sensitive little diaphanous ears. But this is no squirrel. They are primates like us. In fact this species is the smallest primate on earth- which was a real thrill to see up close like this. Anteng put a grasshopper on the end of a stick and then put it on a sapling growing in front of the nesting tree. Eventually one of the little Tarsiers leapt across- about 4 feet- and grabbed the grasshopper with its little hands. These have finger nails (like us) not claws. You could hear it crunch into the grasshopper with its first bite and then it leapt back to its hole, its long tufted tail trailing behind. In the tree some young ones squeaked to get a piece. Anteng did this several times and the Tarsiers were obviously used to visitors so we were able to watch them quiet close up for a long time and they did not mind. Anteng said they call this the BBC tree because David Attenborough filmed a scene next to it. We spent half an hour or more here before moving on.



Tarsiers look on.

Next we saw a Bear cuscus high in a tree. This is the same species that we saw close up at the ‘mini zoo’ near Makassar (see journal entry for expedition day 3).

At 12.05 we were headed back to the beach where we were to have lunch. Almost there we suddenly heard screeching and a rapid rustling of leaves on the forest floor. And there they were. A troupe of the rare Black macaques was stampeding through the forest just 200 feet away. The group must have numbered 80 individuals. Not all were running and stragglers sauntered along at the end with their strange long gait as they walk on all fours. They have a strange almost-baboon like snout and no visible tail. The females have enlarged posterior swellings when they are sexually receptive.

Once they had gone, we sat under the shade of the trees on the relaxing beach, next to some local fishermen and their boats, and waited for our lunch to arrive. It was a long time

coming. Meanwhile we looked around. We found that the sand was literally crawling with minute hermit crabs. There must have been three to every square foot of sand.

12.45 lunch finally arrived, which consisted of rice, fried chicken, fried tofu and papaya. I was impressed that it was served in re-usable plastic containers with stainless cutlery.

At 2.10 we were still sitting on the beach chatting when a second troupe of macaques came down the beach towards us. These seemed to be much more accustomed to humans and they walked by within just a few feet of us. I noticed that one had the remains of a snare around its wrist and its hand was swollen and dead and will presumably fall off eventually. The poor thing. So poaching is not altogether stopped after all. She walked along on her three remaining legs. I then saw another, a mother with a baby on her belly, missing one hind foot. Probably also from a snare. This troupe hung around for a long time and we were able to watch them very closely and get lots of great photos and movies. One youngster with his mother wouldn't shut up and he squawked and squeaked incessantly. What amazing creatures they are. It's hard to believe that they can have diverged so much in form from the usual macaques. But this usually happens when species are isolated from their relatives long enough.



Black macaques.



At 2.30 we set out again for our second excursion into the forest, taking a different route.



A Red-knobbed hornbill.

As we walked along I kept looking in all directions and up into the canopy when there was a clear view, hoping to see interesting animals. There were not many. Anteng went off by himself for a while and then came back to fetch us- bidding us all to be very quiet. He led us through the forest a long way until, pointing up at a mighty tree, there was an enormous and brightly coloured Red-knobbed hornbill perched on a branch. After a while it and its mate took off and when they flew they made that strange loud noise that some hornbills make- it sounds almost like a throbbing machine. Amazing!

Later I caught a flying lizard with my hand and held it to show the students. I delicately

pulled open one of its 'wings' which are flaps of skin attached to a lengthened folding rib. The wings were beautifully striped with black and yellow. Another lizard was on a narrow sapling. I shook the tree vigorously and the lizard glided down and landed on one of the students. It crawled up and we caught it and examined it before letting it go.



A gliding lizard with 'wing' extended (left) and folded (right).



At 3.45 Anteng found another Bear cuscus high in tree – but we were able to get quite a good view and we watched it for a long time. At first it just looked down at us. Later it began to move around in the tree, it defecated and urinated (much to the amusement of the students) and then began to move and feed on neighbouring trees. They don't move very fast. I could see its prehensile tail curled around and ready to grab the branch in case it lost its footing. Eventually it moved into thick canopy so we lost sight of it.



A Bear Cuscus looks down.

We then returned to the BBC tree and saw some of the Tarsier family again. They are some of the most captivating and endearing animals I have ever seen.

At 4.33 we headed back. But before we emerged from the forest we were lucky enough to see a male Green-backed kingfisher sitting on a branch only six feet off the ground. By now the light was failing so photos were not very good. And lastly, as I was walking along with Anteng, I heard a striking call like a bird up in the trees- but it was no bird, it was an endemic little squirrel with white cheeks. By 5.12 we returned to the nature reserve entrance and our van. We had time to use the loo and say goodbye to the knowledgeable Anteng.

I stood around waiting when a group of local people, other park visitors, walked by. One of them was a young woman. She smiled at me. (It's this westerner effect I get everywhere in Sulawesi.) A few minutes later her friend or sister came over and said "Excuse me Mr. can she take a picture with you?" I said "Of course you can." And then the friend decided to join in, and

then the two young men with them and lastly their mother was called over to join the photo. Then they thanked me profusely- as if I had done anything that needed thanks. (Obviously I hadn't). It's really quite odd. Why do so many people want to take a photo with a European? We are not rare after all. Well, I guess in Sulawesi we are. What do they do with these photos? Do they just forget about them? Do they show their friends? "Look here I am with a real westerner!" I imagine one might say. But I can only imagine a friend replying "yeah? so what?"

5.26 we leave to head back to Manado. Most of our group thought the Black macaques were the most amazing animal we saw today, followed closely by those who thought the Knobbed-hornbill was. Personally, although looking forward to seeing the macaques most of all, it was the Tarsiers that most impressed me.

Sadly we did not see the Babirusa and we also did not see the Maleo- the large ground-living bird that buries its eggs in beach sand to incubate them from the heat there. When Wallace was here these birds prompted him to some reflections on animal structure vs. instinct. Which comes first, a structure or an instinct to do something? He thought the tiny bit of webbing on the feet of the Maleo, which helps them kick sand away, could answer this. He wrote a scientific paper in which he, for the first time, used the phrase "natural selection" in print and where he first referred to the theory of evolution as Darwin's theory. And that was even before the *Origin of species* (1859) was published.

What a glorious day this was- I feel so privileged to have seen such rare and wonderful creatures with my own eyes- and in their natural habitat in the wild.

Sulawesi expedition day 9

28 May 2018

Route of the team to and around Bunaken Marine Park. (Strava)



Today we had a snorkelling trip at the 890km² Bunaken Marine Park which is situated around five small islands off the coast of Manado. I read online the familiar refrain: "Despite its national park status and significant funding, the park has suffered a slow, continuous degradation due to a number of threats including coral mining, anchor damage, blast fishing, cyanide fishing, diving, and trash." We took Grab cars from our hotel at 7.48 and by 8.10 arrived at Thalassa dive centre which is owned by a lady from the Netherlands.

When we were trying on our rented fins and masks we discovered that all of us had little red spots on the tops of our feet from our walk in Tangkoko Nature Reserve yesterday. I suppose these must have been caused by some little mites (called here 'gonone').

At 9 we boarded a c. 10 meter covered boat with our guide, a European named Mia, and three local crewmen. We set off across the beautiful calm blue sea which was sadly marred by quite a lot of rubbish floating on it.

By 9.35 we had reached our first snorkelling spot, just off the southern coast of the small island of Bunaken. I put on my fins etc. and jumped over the side. What I saw far exceeded my expectations. I found a tropical coral reef in all its splendour. The area was teeming with fish of many species and the corals were vibrant and colourful to an extent that words cannot describe. It was simply wonderful. I have not seen such a beautiful and thriving coral reef for 16 years. I was beginning to think there were no such reefs left. Things became even more exciting when we spotted a Hawksbill sea turtle swimming in their slow and graceful way through the depths. Later we saw as many as seven Green turtles. These were either swimming or feeding along the edge of the reef. The island is an extinct volcano which rises steeply from the ocean floor. Hence the waters around the islands are very deep and the coral reef we swam over had a vertical wall on one side that went from flashing colours and teeming life where we were and then at its edge it vanished into the blackness beneath. Above- the shallow slope towards shore- the corals were dead and broken with few fish. There were also more scuba divers here than I have ever seen

before- they were making their way along the edge of the reef wall, streams of bubbles slowly floating up from their regulators.



Manado Tua, a volcanic island at the heart of Bunaken National Park.

When we clambered back on the boat we found that park rangers were on board. They had come to check that we had the requisite park entry tickets. We did. After we produced these, they asked us all to hold them up and they took a group photograph. I asked Mia if this was normal. She said they often checked boats at this popular snorkelling and diving spot, but they only photographed groups with westerners. Ha, yet again.

At 10.45 our boat moved on to another snorkelling location ten minutes away on the east coast of Bunaken. We were all on the boat looking at the island and the corals so clearly visible through the crystal clear waters when we saw the most amazing thing. Just 30 meters away a large pod of dolphins suddenly broke the surface. Their elegant dorsal fins slipped up to the surface, they took a breath, and down they slipped again and then they were gone. We were all so amazed and excited. We waited to see if they would reappear. I figured they would pop up somewhere far away. I was wrong. A little while later they came up at about the same place. Everyone was excitedly talking and laughing but I asked the students to be quiet and as I filmed we could all hear the most incredible sounds. The dolphins were so close that we could hear them each taking a breath. It sounded like a series of air tanks being opened. One after another the dorsal fin popped up, the air tank puffed and then down went their tail flukes. They came up one after another like a conveyor belt of fins- perhaps forty or fifty in all.

The tide was low and the boat crew thought it was not safe to leave the boat so close to the reef in such shallow water so we moved on at 12.10. Thirteen minutes later we landed at a very tiny island called Pulau Siladen for lunch. Our boat backed up to the shore where there was a small resort with thatched roofs to look like it belonged there. We waded ashore, each carrying our lunch provided by Thalassa. We walked for five minutes or so across the pretty sandy but private beach to a public beach shaded by the forest trees that came right down to the high water mark. Rubbish was strewn all along the high water mark- mostly plastic water bottles. I remarked to one of the students that this amount of debris was nothing compared to the other Indonesian islands I had seen where normally the rubbish is a thick matt that extends into the forest. Mia later told us that they conducted regular cleanups and the huge mass of junk on the beach now was the accumulation of only one month. It is enough to make anyone despair. The scale of ocean pollution is beyond comprehension. No cleanups could ever make a dent on a phenomena

that covers entire oceans. The only thing that could help would be to ban, worldwide, the production of disposable plastics. We can do perfectly well without plastic bottles, plates, cutlery, straws and the like. Everywhere we swam there were always bits of plastic floating in the water.

Lunch was served in reusable plastic boxes with stainless steel cutlery. It was the usual rice with fried chicken and some vegetables. A lot of time was allocated to lunch to wait for the tide to rise. The students went down to the water. There was nothing to see there, I thought, in the dead zone. I would rather save my skin from possible sunburn for the snorkelling over beautiful reefs. So I decided to explore the island a bit. (I was wrong about seeing nothing, one of the students got a film of a small moray eel swimming right next to him.)

Dressed only in my swimming shorts, stretchy top and booties, I headed off down the beach. I heard some beautiful bird song so when there seemed to be a little trail leading into the forest, I took it. The birds were, I think, little sunbirds. I then stumbled on a totally unexpected mini-adventure. In the undergrowth not far away I saw strangely shaped stone or cement objects. I moved through the undergrowth with big red ants biting my ankles and found that it was an old cemetery. There were dozens of graves with substantial cement monuments in shapes and styles I have never seen before- very interesting. It was a Christian cemetery and the few names that could be made out confirmed this. Most no longer had visible writing on them. The oldest that I could make out seemed to date to 1919. Several were from 1924-1928 and others were from 1948. The odd thing was, these were substantial monuments, not the graves of peasants or fishermen, surely. I wondered why this tiny island had so many well-to-do graves. The oldest graves were so degraded by time and the forest growing about them and breaking them up that they were just piles of stone or outlines of where a monument had once been. Scuttling over the tombstones were tiny lizards (skinks) with dazzlingly bright blue tails. I tried to get some photos and films of them, but they were rather skittish.

At the edge of this old cemetery that was so overgrown was a recent set of graves under a pavilion. These were in a very different style and covered in brightly coloured tiles. I followed a trail on into the island. I found a large bird egg- no idea what it could come from, perhaps a sea bird? As I walked on through the many banana trees there were also mighty forest trees, some so tall that I had to bend my head painfully far back to attempt to see the top.



These were covered with so many epiphytic ferns and creepers that each tree seemed to house its own mini forest. The blue-tailed skinks were here too, as were other little brown skinks. As I walked on there were chickens scratching about in the dead leaves. I then came to the edge of a village with several bamboo animal pens. No one was around so I had a closer look. Several hutches had mother hens with newly hatched chicks. Near them were pens with strange looking pigs. They were alarmed.

I talked soothingly to them and their intelligent eyes starred at me nervously. They were an odd breed of small dark pig with fat bellies. One pen had a female and an adolescent. On the ground nearby were several thick pink petals from banana trees- thicker than shoe leather. I put these in the pen and the little adolescent pig sniffed them and began happily munching the juicy petals.

I walked on and came to a small village. It was very hot and the midday sun was beating down so I took a large banana leaf from a tree and held it over my head for shade. I heard voices

but saw no one outside. There were more chickens and pigs roaming about. The village was remarkably tidy and the ground around the houses was well swept. Then I was walking through forest again. I checked my cycling app, which showed a map and my location and the track by which I had come. I saw that I was actually almost coming to our beach again and had made a huge circle around our lunch site. A came to another village of houses not unlike those in the mountains around Manado. The village was incredibly pretty. There were hedges and flowers in front of the houses and along the narrow footpath. I walked by some women sitting under a pavilion. One was nursing a baby. "Hello Mister" one said in a friendly voice. "Hot?" she asked, pointing at my banana leaf. Haha yes. I made it back to the beach with its ring of little resorts for tourists and the attractive part of the island was behind me.

I returned just as everyone was packing up to get back on our boat. The tide was coming in and where I had walked on sand when we landed it was now two feet deep and tiny fish swam about our legs and small crabs scuttled away. The boat headed out a short distance and stopped. But then Mia said the current was rather strong here, should we snorkel here or go elsewhere? Some of our group were not strong swimmers at all so I asked her to take use elsewhere. So at 2.45 we sailed back to the east coast of Bunaken for our third and final snorkelling excursion. We had rented an underwater camera from them and I had it during this last dive. I kept a lookout for sea turtles deep along the reef wall, as this is where they seemed to be found. And I saw some. Taking deep breaths I dove down many meters to come alongside a turtle and take pictures and some video clips. Then I had to kick hard to swim all the way back up the surface as my air ran out. I did this over and over. One turtle was swimming off from the reef and not very deep. I swam after it and caught up and then swam right beside it making a video. I was so close I could have touched its beautifully patterned shell. Two other turtles I saw were heading to the surface and I popped my head up above the water just as they were about to reach the surface and I saw them stick their heads up and open their mouths to breath. This was an amazing sight-I had never seen (even a part of) a sea turtle in the air.



Just as we were supposed to return to the boat I saw one last turtle. It was very deep and I could barely make it out. There was something odd about it. Its shell seemed somehow whitish. I dove down as far as I could to get closer and to film it. Below it was the bottomless void and I had no point of reference as to how deep I was going. I could not get close enough but in the final seconds it seemed to have a white stripe down its back. I had to leave so I rushed back to the surface to breath. The film I made showed a ghostly white turtle which appears to be missing its right front flipper. I don't know if this is accurate. At any rate we will never know the explanation for the appearance of this ghost turtle.

3.40 our last swim is over and the boat heads back. The whole group sat on the roof of

the cabin or on the deck at the bow and enjoyed the wind and the stunning views of the blue sea and the emerald islands all around. Paradise indeed!

4.15 the boat returned and we cleaned up and paid for our trip. The boat journey was 33km in all. An hour later we took Grab cars back to the hotel which took ages because of the bad traffic in the narrow back streets. Later we went out in groups for some local food.

We were very, very lucky indeed today. We saw one of the most beautiful natural environments on earth- a thriving, colourful coral reef in all its glory and on top of that were lucky enough to see dolphins and sea turtles at very close range.

Sulawesi expedition day 10

29 May 2018

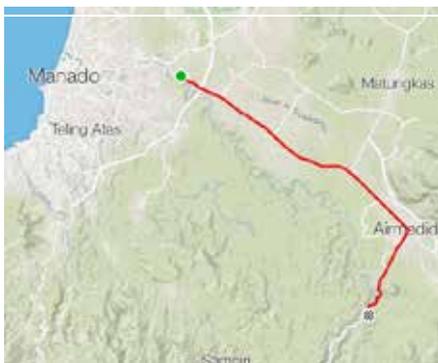
There was no set programme for this our last full day in Manado. I had breakfast in the hotel restaurant. I was keen to try Manadonese porridge, Tinutuan. It is a yellow rice congee with pulped pumpkin, sweet potato or cassava mixed with maize kernels and leafy vegetables like kangkung (water spinach) and kemangi (lemon basil). It is good and nourishing but perhaps not fully to my taste.

At 7.30 I joined some students who were going out to a local “café”- really just a popular roadside stall with a plastic tarpaulin roof. They had a delicious-looking porridge and I had a kopi susu. Later we returned to the hotel and at 8.51 four of us set out for the Museum Negeri Propinsi Sulawesi Utara, the State Museum of North Sulawesi Province. From all our researches this was the pre-eminent sight in Manado. The guard at the gate to the car park had a large sledgehammer sitting in front of him for some reason. We climbed the hill to the entrance of the building. The three staff there seeing they finally had some visitors, set about playing on the traditional wooden xylophones in the lobby. The tunes they played, however, were western such as ‘fara shaka’. The museum was free. Inside were rooms with large panels with information about the many ethnicities of north Sulawesi and the unique wildlife on this island on the Wallace line with its strange mixture of Asian and Australian forms. Two of the museum staff then came and asked to take a photo with me. In the next room was a fine section on human evolution since *Homo erectus* was here long before we were. Almost all of the displays were replicas- some of them really quite awfully done like some deer that looked more like cartoons than real animals. The museum had no air conditioning and we were sweating profusely. In several rooms the overhead lights and those in the display cabinets did not work. I tried the wall switches- no effect. The glass of the display cabinets was so dusty one could not see the objects well.

There were also rooms displaying panels and a few stone artefacts from the Neolithic peoples who lived in this region. From the 9th century the Minahasa made stone sarcophagi called Waruga- a practice that continued until the end of the 19th century. Further rooms covered more recent centuries with some swords and actual 19th-century clothing. There was an example of an hourglass made by tying two bottles together mouth-to-mouth and secured around with a wooden frame. There was also a very very narrow outrigger boat – perhaps a foot wide at most- and many fine small models of the types of small vessels from this region. There were also some old ploughs and models of traditional housing styles. These latter particularly interested me but the lights were out in these display cases and the glass was very dirty. I’m sure most foreigners would say this museum was a dilapidated wreck but clearly a lot of care had gone into making the displays and the information panels.

10.30 we popped into another local café to eat our hoard of local street snacks with drinks. I had some bizarre things indeed to try. But the café itself served a wonderful little dessert left by the Dutch, called a Klapertart. It is a custard pudding with coconut flesh, milk and nutmeg. It was delicious and not too sweet. We discussed what to do with our day. There is really nothing to see in Manado and anything else is a long drive away.

11.40 back to the hotel to freshen up.



Drive to Airmadidi and Sawangen. (Strava)

1.05 Only one of the students wanted to see the unusual historic tombs of the Minahassan people called Waruga. We hired a Grab car to take us to the small village of Airmadidi Down. It was a forty minute drive away. I learned from the driver that the blue vans used as taxis/public transport are not called bemos in Manado, but ‘Mikrolets.’ When we arrived we found a large rectangular enclosure made of a low wall and a gateway with small stone monuments in neat rows.

The grave monuments have been moved here at a later date, they once stood next to family homes. Each one is a rectangular stone base about 4 feet high that has been hollowed out to form a receptacle for bodies in a seated or foetal position. Each was then capped with a large stone usually in a triangular shape and often adorned with carvings or reliefs. There were many types which clearly changed over the centuries. Some still showed some traces of colour, such as some red on the heads of human figures. Some were very primitive and the human figures were almost stick men with smiley faces scratched onto them. Some clearly represented males or females (the genitalia were very conspicuous) and some showed women giving birth in a squatting position. After looking at many of them, one began to recognize some common motifs. Many had a double animal on the top, a type of dragon with heads facing outwards at the top. Usually there was an object like a club on the narrow ends of the triangles. These had notches carved across them, one per body once entombed within. There could be three or as many as twelve I read.

Some of the monuments were broken somewhat which revealed their structure. And a few had writing carved on them in the Roman alphabet, including dates. Obviously this was after the arrival of the Dutch. I saw dates from 1765 to 1847. The Dutch government eventually banned the practice of these above-ground burials both because the smell was offensive to neighbours and because of fears that it could spread disease including cholera. So this ancient tradition, which went back at least 800 years, came to an end.



Waruga at Airmadidi.

Some village boys saw me and shouted “Hello Mister” and such, but not in a nice way, they also shouted in their own language, I caught the word Bule (for westerner). They whistled and made other sounds in an attempt to make me look at them. I didn’t. I just walked to the other side of the enclosure until they stopped. But every time I moved back to their side of the place the calls started up again. Quite annoying. We left at 2.25 and ordered a Grab car to take us to the nearby village of Sawangen which had another collection of Waruga plus a museum. While we waited I bought some local snacks at a small Warung.

These little pastries were not fresh and not very good. A driver soon arrived with the usual super dark tinted windows, and drove us in fifteen minutes to Sawangen. As soon as we alighted a ripple of excitement seemed to pass through the local community. Foreigners had arrived! A woman wearing a polo shirt bearing the name of the site came to point us to the monuments. She was accompanied by two children. One of them, a cute little girl named Valerie, instantly latched on to me and pointed in an overly formal manner in the direction I was to go etc.

The 'museum' was located in a traditional-style building on stilts. The door and windows were open and the single room contained only about seven very dusty and decaying cabinets of grave goods such as ceramics, bronze bracelets and necklaces which were found in the Waruga during excavations. These cabinets were sometimes unlocked. Another woman arrived to help who spoke more English. When we moved on to the Waruga themselves she was able to explain what some of the carvings were though I suspected that some of the things she told us were hearsay or legend. She did identify one of the horned animals carved at the top. It was an Anoa or sapiutan, a forest animal with horns (a miniature water buffalo) unique to Sulawesi.

Valerie followed me everywhere I went and she pointed out various carvings. She then indicated, through hand gestures, that I should take a photo of her. So I did. She then had to see it. Then she wanted to take one of me, so I let her. She then took me by the hand and led me across the enclosure to some special monument to see. Two other children followed us. They said what few words of English they knew and I responded with my few words of Bahasa Indonesia. They then sang a song which matched English and Bahasa words. This was so cute that I made a film of them singing. As soon as they finished little Valerie ran over to see the film and they all laughed with delight to see themselves. By the time we had seen all the tombs it seemed that half the village had arrived to sit and watch us. Actually apart from a few boys, they were all women and girls. The usual requests for photographs came next so we did our duty and posed with our new friends. It is hard to describe how kind and friendly they were. I noticed one of them was filming me everywhere I walked with her tablet. We were then asked to sign a guest book. The whole group walked with us to watch this solemn occasion, almost leaning over the book. Then there was another familiar scene. One of the ladies said "Mister she say you handsome" followed by a blushing young lady hiding behind the speaker. In this case they even asked for a phone number. So with final photographs taken we took our Grab car back to the city.

4.24 we arrived at Mega trade centre at the waterfront of Manado where the rest of the group were shopping. One of them actually bought two bulk boxes of instant noodles. The shopping done we walked a short distance to a seaside restaurant called Tuna House which has good reviews. I had barely sat down when I am starred at yet again- but this one was different. A young lady in the kitchen was not just starring but smiling, winking and waving at me. In fact she starred incessantly and did not look away- for minutes on end- which is rather disconcerting. I could hardly eat my dinner with this barrage of attention. And, of course, before we left there were the ubiquitous photographs and request for my phone number. This lady told me her name was Ayu. We then walked about looking in various shops at clothes and shoes etc. Everywhere I went I was either starred at, smiled at, or people would turn around to look at me as if they could not believe that a westerner just walked by. And as so often in Sulawesi I was greeted by endless strangers with "Hello Mister", or "hello sir", or "so handsome" etc. etc. over and over. During the entire day I never saw another westerner.

Since we are leaving early tomorrow morning, we headed back to the hotel at 8.30. Our adventure draws to a close.

Sulawesi expedition day 11

30 May 2018

Our groggy group met in the hotel lobby at 5.15am and shortly thereafter our friendly Manadoese driver Bemo drove us to the airport where we arrived by 6am. We took the 7.05 Citilink flight to Jakarta and in a few hours we will board another flight back to Singapore.

I would say this trip has been a great success. First and foremost the students proved to be outstanding organizers and planners. They had short notice to prepare for this trip and still they set to work researching the locations, working on the finances and university red tape, and their itinerary, transport and accommodation bookings were all perfect. They all got along terribly well, there were no quarrels. In fact they got along almost too well since they spent much of this trip laughing and giggling together. I don't think I have ever travelled with a group that laughed so much.

And what have we learned? From the mangroves and karst mountain forests in the south and the volcanic mountains, forests and coral reefs of the north the state of nature conservation in Sulawesi is obviously dire. Almost all of the mangrove forests are gone and almost nothing effective is being done to save or restore them. We saw very few wild birds anywhere on the island. The Babirusa has gone extinct in the forest reserve of Tangkoko and the mighty Maleo that so intrigued Wallace is almost gone. The Black macaques too used to live all over the island. Now they survive only in a few pockets. And they are still being killed and maimed by snares within a nature reserve as we saw for ourselves. The coral reefs of Bunaken are still healthy, but they too are slipping rapidly towards a seemingly inevitable destruction. Anyone who covers as much ground as we have in Indonesia will understand that it is drowning in rubbish and plastic waste- on land and sea. From the grand plans for hotels and high tech surveillance of the mayor of Makassar, and government projects and efforts elsewhere, it would seem that nature conservation is seen as a low priority. Yet there are still some glimmers of hope, perhaps, as we see from the effective reduction (but not elimination) of poaching in Tangkoko by the establishment of long jail terms and harsh fines.

And we ourselves have had the adventure of a lifetime. The thirteen of us have seen landscapes, plants and animals that are amongst the most amazing and beautiful on Earth. We have seen many different peoples with their different languages, cultures, traditions and ways of life. The students have, I hope, learned a great deal about all of these things and more. They have become seasoned travellers, forged new friendships, and in the end, had a wonderful time. I think I am not the only one to be sorry our expedition has come to an end.



The group safely returned to Changi airport, Singapore. *

Th Conservation Expeditions 2016-2018

By John van Wyhe

Between 2016 and 2018 groups of students led by John van Wyhe undertook a series of extraordinary expeditions through Indonesia to survey the state of nature conservation and to learn about local peoples, culture and wildlife. When feasible the groups also re-traced the footsteps of the great naturalist Alfred Russel Wallace. The journeys were sponsored, in part, by Tembusu College and the Study Trips for Engagement and Enrichment (STEER) programme of the International Relations Office, NUS.

These were no ordinary student trips. The teams explored Indonesian jungles, caves, coral reefs and scaled an active volcano. There were close encounters with malarial mosquitoes, leaches, snakes, sharks and a storm at sea. They witnessed entire regions covered with oil palm plantations and observed some of the rarest animals on earth including, sun bears, black macaques, sea turtles, dolphins, Bornean elephants and orangutans. This volume combines the travel journals of Dr van Wyhe written day by day during each expedition, recording their travels, adventures, mishaps and close encounters with endangered species.



A sea of oil palm plantations in Borneo.



John van Wyhe is a historian of science at the Department of Biological Sciences and a Fellow of Tembusu College, National University of Singapore. He specializes on Darwin and Wallace and is the founder and Director of *Darwin Online*. He has published eleven books and lectures and broadcasts around the world.