

Herping the Himalayas; In search of Rare Cobras and Western Toilets

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This field report will focus on the expedition which Captive & Field Herpetology (C&FH) ran to the Himalayan regions of Himachal Pradesh in 2019. It'll jump in and out of a previous 2018 expedition now and then, primarily to fill in the gaps where we were unsuccessful in 2019. Due to some illnesses I didn't carry out a great job of noting dates when taking notes so this report won't follow the normal day by day or week by week structure of a field report, it'll use more of a case by case structure.

In 2018, we ran our first ever Himalayan expedition, it was and still sits high up on my list of most successful field excursions. Part of a large collaboration focussing on snakebite awareness from the ground up (the people most at risk) and educating various forest departments in the state, we had a successful trip from all angles. We handed out huge numbers of snakebite awareness materials to schools and local groups, we carried out numerous forest department training sessions teaching them about snake biology, handling and what to do when a person is confronted by a venomous snake. We also located new species for the state, range extensions and ticked off most of, if not all of our target species. One of those species, especially for myself and a couple of other members in the group was the Caspian cobra, *Naja oxiana* (figure 1). A couple of weeks in, we were greeted by this majestic high-altitude snake whilst taking a break from road cruising at above 2000m altitude. Anyone who has had the pleasure of finding cobras in the wild will certainly be shocked to know that we found this individual at this altitude and an air temperature of 8c, it was foggy and damp with very little to no warmth coming off the concrete road. That would be it until the last few days of the trip when we unfortunately came across a second specimen, minutes after it had been run over by a car. Its heart was still beating when we found it. That specimen now resides in the Zoological Society of India's collection and is the first of its species to enter the collection. So that's enough of 2018 for now, hopefully you can understand why we were excited to get back there in 2019...

The 2019 expedition started off as expected. The first couple of weeks involved some forest department training with some close friends, Ana and Stu who were conducting the training and surveys with Vishal as part of funding which Bangor University had received. We'd often and still do maintain some friendly competition when it comes to herping and the first night that we managed to get on the road in Solan was no exception. The previous year, Stu was first to spot a snake during the trip, not too far away from the location which we were currently road cruising. For anybody that doesn't know what road cruising is, it involves driving up and down roads at night at a slow pace looking for snakes as they either cross them or come out to bask on the 'charged up' tarmac, warmed up from the days sun. It was a slow night, slamming the brakes on for numerous objects such as sticks, anybody who has road cruised will understand the pain of this. Stu had mentioned that he would, again, find a green pit-viper, *Trimeresurus septentrionalis* during this evening's cruise, just like the previous year (figure 2)...



Figure 1. The Caspian cobra, *Naja oxiana*. Situated in one of the most abundant plants in Himachal Pradesh, Marijuana. This was the first and only live specimen we found in 2018.

It was a long night, we experienced some heavy showers and very few herps. We stopped at some of the locations from the previous year. They presented us with the usual suspects; Asian toads and geckos of the genus *Hemidactylus*. It was on the drive back, maybe about 20 minutes from our accommodation, just as we were all drifting in and out of sleep that I heard those golden words being shouted from the top of Stu's lungs "SNAKE!". All of us, including Vipin, the driver, being half asleep resulted in the car coming to a stop at a not so optimal location and we ultimately had to reverse back about 50 meters. It was a great spot, about 15 meters up off the road on quite a thickly vegetated bank. Often, when you find snakes at night, you're presented with a bright, scaly and reflective object, like a bundle of metal sleeping on a branch. When you find green pit-viper, you are presented with, well, the green equivalent. There's no mistaking one and that's what we had here. Who would've guessed it?! Green pit-vipers can be weirdly common in some locations, whilst not 'rare' in Himachal Pradesh, we're certainly never tripping over them.

So the race was on, only about 20 minutes of drive time left and I needed a snake. My hopes were low. It only took about 2 minutes for everyone to start drifting off to sleep again and I didn't really have much expectation of finding another snake. I was sat in the back seat, with the window open and torch beaming the banks of the road. I was doing my best to scan, with my half open eyes. We weren't really driving at a slow/road cruising kind of pace any more. Vipin was likely exhausted and ready to crash (into his bed, not the car, although I do question this sometimes with the speeds he opts to drive at). Then, I noticed a flash of black and white a couple of meters above the road on what could be best described as a mud wall. It looked as if it was crawling in between the many small trees growing out of this 'mud wall'. Expecting to see a reflective branch or maybe, if we were lucky, a wolf snake (*Lycodon sp.*), I yelled "snake!". We went through the phases of finding something during a road cruise; slam brakes on, damage everyone's ribs/shoulders (heads if not

wearing belts); run out of car whilst forgetting all handling and capture equipment; either find snake or massively frustrating snake like object. We were not greeted by a wolf snake but a rather large common krait (*Bungarus caeruleus*) (figure 3). This was probably the largest common krait I have seen, after the joys of untangling what's potentially a very dangerous snake from above head height whilst it's entangled in multiple branches and roots we took it back to our accommodation for processing and it ultimately measured at over 4 feet! Quite large for this species. I still reckon I won that night but I'm sure Stu still believes his bright green viper wins when it comes to attractiveness. My trump card for that argument was that this krait would quite easily and probably has eaten quite a few green-pit vipers in its lifetime, being snake-feeding specialists.

This next mini story, if you want to call it that, gets a little painful (it did for me anyway) and ends quite nicely. Having found the 6 species of venomous snakes in Himachal Pradesh that one could expect to find; spectacled cobra (*Naja naja*), Caspian cobra (*Naja oxiana*), Russell's viper (*Daboia russelii*), Himalayan pit-viper (*Gloydius himalayanus*), white lipped or green pit-viper (*Trimeresurus septentrionalis*) and common krait (*Bungarus caeruleus*), there was one other elapid which I had seen included in one report and after speaking to a villager in the previous year, my belief in its existence in this state was slightly more reinforced. Its identity will be revealed a little later on.

Given that Himachal Pradesh, like many of the other states in India, suffers horrendously from snakebite, documenting another venomous species becomes more important. More important than my desire to see a pretty red and black elapid (ooh, a clue) to photograph.

We arrived at our accommodation in The Great Himalayan National Park, a Forest Department rest house neighbored by pine covered mountains and rivers fit for the most experienced white water



Figure 2. The green pit-viper, *Trimeresurus septentrionalis* found by Stu in 2019. the first species to be found in both 2018 and 2019, both by Stu, which I'm sure he'd want me to point out.



Figure 3. A common krait, *Bungarus caeruleus*. A highly venomous elapid and responsible for numerous fatalities in India. They often make their way into homes during the evening and bite people. Nobody knows for certain why.

enthusiasts. When you initially drive into the park, it almost feels like you're entering the gates of Jurassic Park, you feel tiny. Everything, the mountains, rivers, trees and cliffs are all bigger than what I'm used to seeing back home in Wales. It also does not feel like somewhere you would search for snakes. (figure 4) The climate is almost welsh. Most of the time there's a layer of fog hugging the mountains, it's damp and the temperature isn't all that warm.

However, when the clouds do open up, the sun, being at high altitude is quite warm indeed. That's the difference between here and Wales, and what allows this magnificent scenery to harbour some incredible species of herpetofauna. It's difficult to imagine snakebite being a problem here, we normally hear of people being bitten in the slightly more tropical places around the world; Fer-de-



Figure 4. Views from one of the Forest Department rest houses.

lance in South America, Russell's viper in India and puff adders in Africa. But, bites are frequent in this area and from what we've gathered, it's the Himalayan pit-viper that's the culprit, biting defensively when accidentally stepped on or someone unknowingly places their hand on one when working in their field (figure 5).



Figure 5. Milking a Himalayan pit-viper, *Gloydius himalayanus* for venom which will later be analysed.

Our goal in this location was to find the Himalayan pit-viper, to sample its tissue, blood and venom (I don't mean to taste it as I normally would with some whisky per-say). However, it was this village where I had spoken with a villager in the previous year about a red and black snake which hoods. The hooding part had me thinking about species such as the large-eyed false cobra, *Pseudoxenodon macrops* which would have been a huge range extension and a species I very desperately want to see in the wild, one I have also kept in

captivity. It was this species that I had at the back of my mind whilst at this location, not my other venomous target, it just didn't fit the bill for me when it came to the conditions and environment here...

The first couple of afternoons were spent walking up and down a couple of trails which backed onto the accommodation. By the second time we had done this and returned, my stomach would start to feel a little uneasy to say the least. Maybe a slight disagreement with food or exhaustion I thought (not something I normally suffer with but I had been in the field for a couple of months and we had done some very serious mileage in that time including a trip over in Nepal). I won't go into too much detail about having to stay back for the next day whilst everyone else was hiking and surveying the nearby area. I don't think you would find any pleasure in reading it and I certainly won't find any happiness in having to re-live it mentally as I type. Now you may understand the title a little more, not the cobra bit. For anybody who hasn't visited India, many of the toilets in India are simply a hole in the ground which feeds directly into a waste pipe. Basically erase your toilet and the hole and plumbing that you have left in the ground, there you have it. I have no issues with this, apart from my lack of flexibility which I'm sure would cause a fly on the wall to choke on laughter as it observes me but with the illness I was currently beginning to feel, I was just glad that we had an actual toilet at this location. It didn't stay that way...

So I was doing the usual sick person things during the day, feeling sorry for myself and making sure to let everyone know that I was ill. Evening arrived, Vishal (the other half of our C&FH Indian expeditions) was cooking one of his usual spicy but incredible West Bengal based dishes, a couple of our volunteers, Ed and Luke had gone for a hike up the mountain trail, Sourish was stuffing his face with pakoras and my girlfriend, Maya was busy listening to me moan about my, at that point, fairly mild, illness (sorry!). The rest house caretaker's phone rang and he immediately called Vishal over. They were speaking in Hindi and I could see that he had received an image on his phone, of a snake. Vishal told me it had come from the village at the top of the hill behind us, the trail that we had previously been hiking led to that village. The one in which I had spoken to the man in the previous year. I knew what this snake was and to say I was excited was a huge understatement. We



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Figure 6. MacClelland's coral snake, *Sinomicrurus macclellandi*. Top of our target list and very rarely seen in Himachal Pradesh.

abandoned everything we were doing, I forgot about feeling sick and we all dived in the car. We were unable to get a hold of Ed and Luke so we assumed they must already be up there. These mountain 'roads' are normally quite narrow and about 5 minutes into bumpy journey we were faced by a truck coming down the hill, being a single road, someone was going to have to reverse. This is always a terrifying experience if you happen to be on the side of the road edge, often faced with a drop of 100 meters or more. Sourish and I decided it would be best to get out and run up to the top whilst they figured this out. We hopped out and attempted a jog. Not so easy in flips flops, pouring rain and bowels that have forgotten how to play their role...

What we thought would be a jog of 1km probably ended up being more than twice that. Panting a few hundred meters from the top we get a call from Vishal to tell us not to worry, the villagers have captured the snake. I didn't know whether to cry, with happiness or the fact I was dying, metaphorically. They caught up with us, Sourish and I jumped back into the truck, excited to see this snake. The excitement only lasted so long. There was a crowd of local people surrounding the outside of one of the small mud-walled houses. Upon breaking through them, there it was, the snake I so desperately wanted to see this year! MacClelland's coral snake, *Sinomicrurus macclellandi* (Figure 6). It all seemed a bit too easy, you never come across your target species that early into a trip. Once my breathing came back down to a normal rate (mainly because of the jogging, I'd like to think I can avoid turning into a bulldog when excited and managed to maintain a normal rate of breathing) it was clear that something wasn't quite right. The slender, black and red snake in front of us was not moving in a normal manner. Snakes like this rarely sit this still, usually behaving more like a worm than a snake when disturbed like this. Upon closer inspection of it, it had been pinned down by the person who caught it, a little too heavy handedly, ultimately damaging some vertebrae. Unlikely to survive, I bagged it up, somewhat happy that at least we could collect some valuable data from it. That's when it got interesting, the villager who had captured the snake demanded I give it to him. Confused, I did so to avoid a lynching. He quickly retreated and Vishal explained that, due to our excitement in seeing the snake, this man believed it must have significant monetary value. Something we should all think about when carrying out these kinds of excursions, the last thing we want is for the people at most risk of snakebite to begin collecting them thinking they can sell them.

Luckily, a friend of ours from the Forest Department was able to visit the man and collect the snake for us the next day and explain that he was breaking the law by keeping this snake. So a slightly tragic story but it did allow us to confirm the presence of this species and collect valuable data such as morphometrics and some DNA. I figured we'd eventually find our own, in tact example in following years to come.

It was time to leave the cold and damp mountains of The Great Himalayan National Park and time to travel to an altitude of approximately 2700 meters. A much more arid location, Chamba still receives a lot of rainfall but it's generally hot in the daytime due to the high altitude and open habitat (Figure 7). There's a few reasons that Chamba is my favourite location in Himachal Pradesh; you can finally wash and dry your clothes here, the big mountain valleys filled with raptors riding thermal waves are spectacular, mammal diversity is really high and it's home to none other than the Caspian cobra, *Naja oxiana*.

Reaching Chamba, still feeling ill is not something I ever want to do again. It generally takes us an entire day of driving long, windy mountain roads with very few places to stop for a break, especially a toilet break, I'd like to think I have iron sphincter muscles capable of crushing rocks



Figure 7. A worker taking a break overlooking the magnificent mountain valleys in Chamba.

after that drive. It was at this stage in the expedition were I knew this illness was going to hang around. We had to make a stop at a hospital on route as Maya had symptoms of a kidney infection. Between me making more use of the hospital toilets than anyone else in their and Maya suffering from agonising kidney pain, surely the herp gods would reward us with a cobra to ease us from the suffering? What made the drive even more difficult and long was the numerous landslides. We had visited the state a month or so later than the previous year to determine if there was any change in what we found. This resulted in more

rain and with more rain comes more landslides. This often meant we would have to wait as workers would have to arrive and dig a clear path again (Figure 8).

Chamba is always fruitful, we get rat snakes, trinket snakes, vipers which include Himalayan pit-vipers and Russell's viper, although we have also heard rumours of green pit-vipers in some of the greener valleys. Once we had arrived I embraced the luxury of a western toilet again and we got on with our usual routine of road cruising the cliffside roads. One evening, we would separate into two cars to cover a greater distance and time span. Of course, this naturally creates some competition between both 'teams'. Early in, we picked up a stunning, dark chocolatey brown Himalayan pit-viper from the road followed by another and a couple of kukri snakes. Of course, I bragged when



Figure 8. Workers beginning to clear one of many landslides on the drive to Chamba. Caused by frequent rains and steep cliffs.

phoning the other car to see how they were getting on. How couldn't I? I finally had enough courage and energy to leave a larger distance between me and the bathroom, and we had a good handful of snakes.

We arrived back at the accommodation, smug, ready to show off our prized specimens. Luke and Sourish were waiting with a bag in hand, looking equally as smug. They asked me to guess what they had picked up, I went through all of the usual questions; is it venomous? a colubrid? big? small? but nothing matched. Upon opening the bag (which felt completely light and empty, making me think they were ready to prank me) I forgot all about feeling ill. It was a beautiful, bright red and more important, live coral snake! Not something I expected that evening after giving up hope the last time we met with this species. Luke was also quite happy given that this was a target high up on the list for him.

We continued for the next few days searching for more snakes, more coral snakes and of course the Caspian cobra. We searched the same locations as the previous year and numerous new locations but it was not to be in 2019. Landslides and roadworks had decimated many of the roads which we knew the Caspian cobra resided around. Maybe it was our late arrival in the year, maybe it was the disturbance. We will be back there soon, who knows what else we still have to discover in those mountains.

This is a good place to leave this report. There's numerous stories involving encounters with leopards, a bear, a gun and much more but the field report would ultimately take up much more of the journal than the peer-reviewed articles that it focusses on. So for now, I will leave it here and write some other field reports, picking up with some of our many other stories in future issues of the journal. For those of you who are interested, my illness was very likely a case of dengue. I later learned that Nepal was suffering from an outbreak during my visit and my symptoms all fit perfectly, not something I hope to suffer from again. I hope I didn't leave you with too many visual thoughts when describing it.

We also love to hear about your field experiences so if you want to write a field report, get in touch using the contact details on the first page.