

Vijaya, India's first woman herpetologist

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J. Vijaya

This article is dedicated to J. Vijaya (1959 – 1987)

When you delve into the history of herpetological conservation in India, as I did recently, you keep bumping into one personality called J. Vijaya. I have never met her and all I knew of her was that she spent most of her short life working on turtles and that there is a small memorial to her right next to the turtle pond at the Madras Crocodile Bank. Viji (as Vijaya was called) was India's first woman herpetologist when such a career was unknown in this country.

Student days

Viji came to the Madras Snake Park as a volunteer in late 1975. She was then a first year zoology student at Ethiraj College, Chennai. She assisted the keepers in cleaning the cages, made sure that visitors didn't throw stones at the animals, helped in the office and library and filled in for anything else that needed doing. Shekar Dattatri, then a school boy, joined the Snake Park as a volunteer a few months later and remembers her as a very quiet person with the insular, focussed interest of a Dian Fossey. While Shekar played truant from school and spent all week hanging around the Snake Park, Viji could only visit on weekends. Besides doing little projects at the Snake Park, the

duo went on short field trips together with the Irula tribals – to Vellore looking for rock lizards, to Mambakkam, Ottiyambakkam and Chitlapakkam and other places looking for small creatures like scorpions, lizards, snakes and geckos. Caring for animals in captivity at the Snake Park and observing wild ones in their habitat was a steep learning curve.

The first published mention of Viji surfaces in the September 1980 issue of Hamadryad, the newsletter of the Madras Snake Park in its early years and later Madras Crocodile Bank, when she wrote a short note on the breeding behaviour of mugger crocodiles. A September 1981 editorial mentions that she was working as a Research Associate on a project (which included checking wild scats and feeding captives) to assess the effectiveness of monitor lizards as rat predators. She had graduated by then and was working full-time at the Snake Park.

A turtle biologist is born

In those early days, when herpetological conservation was still nascent, Romulus Whitaker, her boss at the Madras Snake Park was assigning

various people to different critters – Satish Bhaskar to nesting sea turtles, Valliappan to sea turtles in the meat markets of Tuticorin – and he might have put Viji onto freshwater turtles. Once, Rom and a team from the Snake Park including Viji, went to the Indian Institute of Technology campus to catch a couple of crocs that had escaped from the Children’s Park Zoo. Near the edge of the huge sewage treatment ponds, they came upon hundreds of turtle eggshells, dug up and strewn around by mongooses. That was the first inkling they had about how common the Indian flapshell *Lissemys punctata* and the Indian black turtle *Melanochelys trijuga* were. Viji began collecting data on the turtles’ nest size, number of eggs per clutch and nest survival (precious few!) and that may have been the decisive moment.

Shekar remembers returning from a field trip to Sri Lanka with Viji clutching an old frayed bag of Indian black turtles. At the Customs check, she had to open the leaking bag for inspection when the turtles began pissing in unison. It made an already cumbersome procedure smellier. He laughed as he recalled affectionately, “She’d do things that I wouldn’t dream of doing.” At this time, Edward Moll, the Chairman of the World Conservation Union’s Freshwater Chelonian Specialist Group needed an assistant for a nationwide survey of turtles and Rom, who was a member of the group, recommended Viji, who was just 22 then, for the job.

The first surveys

The survey got underway in August-September 1981 and she travelled up to West Bengal (the major consumer of freshwater turtles in the country) to meet up with Pankaj Manna of the University of Calcutta, the other team member. With Pankaj as translator, they began with the meat markets. Thousands of Indian softshell turtles *Aspideretes gangeticus* and narrow-headed softshell turtles *Chitra indica* came for sale during the winter months – when the water was low and the creatures were easy to trap, hook, or catch with bare hands. The price of turtle meat plummeted from Rs. 18 to Rs. 5 per kg during these months; “it was cheaper than beef,” Viji reported. From Gorakhpur, Uttar Pradesh, she wrote about the movement of the turtle trade – most went to

Bengal but some found their way to Assam. Initially turtle exploitation was confined to the states immediately around Bengal. But by the time of her visit, states further upriver like Uttar Pradesh (UP) were being hunted for the Bengali markets (Viji would eventually discover that turtle exploitation extended as far up as Punjab). On a typical day, 10 baskets of 10-20 turtles each, along with freshwater fish from reservoirs and rivers were sent by train from UP alone. The market was big and the business competitive; at least 20 agents worked the Rapti river. Viji also documented how turtles were caught by harpooning and hooking. The hapless turtles were flipped on their backs and their flippers stitched together with binding wire for the journey to Bengal. In 1981, the catchers were already complaining about the small size of turtles (5-10 kg. range); 10 years earlier they were easily able to catch 40-70 kg. ones. Based on Viji’s findings, Ed Moll estimated that 50,000 to 75,000 Indian flapshells, 7,000 to 8,000 large softshells and at least 10,000 to 15,000 hardshell turtles were coming into the Howrah market in Calcutta annually. He felt that the latter was probably an underestimate, because on one day in May 1983 (off-season), he witnessed over 350 large hardshell turtles being auctioned off.

It can’t have been easy doing this work as most of the places Viji visited were the ‘badlands’ or ‘wild west’ of India – the Chambal ravines with its dacoits, Bhagalpur (at the time of the infamous Bhagalpur blindings) and crowded, goon-infested parts of UP. But, she was totally oblivious to anything besides turtles. The black-and-white pictures she took of the gory ridley sea turtle slaughter on Digha beach in West Bengal and in the meat markets of Calcutta, shook the public when India Today magazine ran them in the early 1980s. This was the first media expose ever done on the free-for-all trade in sea turtles and highlights the difference one individual can make to conservation.

Prime Minister Indira Gandhi took action (another woman who dramatically affected conservation in India) immediately and overnight, sea turtle exploitation was cut to a trickle. Mrs. Gandhi also wrote to the Coast Guard asking them to protect sea turtles, a tradition that continues. Ironically, the present government has abdicated its role as

caretaker of India's wildlife by allowing ports and other developments along the coast that are detrimental to the turtles' continued survival.

The forest cane turtle

The forest cane turtle (at that time *Heosemys silvatica*) was at the top of the agenda of the Freshwater Chelonian Specialist Group. Viji decided to go and look for the obscure little turtle in Kerala, which hadn't been seen for 67 years. Only two specimens of the species had ever been recorded by a Dr. Henderson (of the Madras Museum) in October 1911 from Kavalai. Henderson describes the locality as "20 miles from Chalakudy, the starting point of the forest tramway service." When Viji planned her trip, she discovered that 'Kavalai' meant 'crossing or junction', the tramway had long since fallen into disuse and every district in Kerala seemed to have a village by that name. She somehow made contact with the Kadar tribals in Chalakudy and sought their help. She wrote: "The 'Moopan', or headman, was appointed to accompany me as he was the oldest man available to accompany a girl into the forest. Moopan, whose actual name I was never allowed to address, was a dignified man, four-and-half feet tall with a serene face. Rain or shine, we would go out with his big umbrella and his sickle, which he used to chop off plants to make way in the jungle." She was finally able to find a cane turtle in July 1982 and that shot her into the international herpetological limelight.

Shekar remembers that first turtle well. "The first time Viji got one back to Madras, she brought it to my house. So long as it was daylight and as long as someone was watching it, the turtle would not come out. When it was pitch dark, it would slowly put its head out. The moment you shone a torch, it went back in. This was the most bizarre creature I've ever met." Perhaps what captured everyone's imagination most was that Viji saw wild cane turtles 'dive' under leaves when frightened, just the way an aquatic turtle would dive into the water. Henderson also recorded the fact that this turtle "did not affect the neighbourhood of water, a fact borne out by the absence of webbed digits."

In December 1982, one of the female cane turtles Viji brought back laid a clutch of two eggs. She

discovered that this species wasn't a vegetarian as earlier thought. Besides eating fruit and fungi, it fed on invertebrates such as millipedes, molluscs and beetles. From knowing virtually nothing about the animal, Viji made a quantum leap in documenting what this turtle was about.

Unknown to the scientists who considered the turtle 'lost' for close to 70 years, several cane turtles were sold in the European pet trade as Tricarinate hill turtle *Melanochelys tricarinata* or Indian black turtle in the 1960s and 70s. One of the turtle hobbyists who bought several was Reiner Praschag who maintained them in captivity in Austria for many years.

Research and conservation

Rom remembers a clutch of Indian flapshell turtle eggs Viji had been incubating under a tin roof shed at the Croc Bank. It had already been about 300 days when Rom remembers writing them off as dead, but Viji persevered. The Irula tribals had told Viji that the sound of thunder makes turtle eggs hatch. A couple of weeks later, it rained for half an hour and on cue, the eggs hatched. Viji excitedly said that there had been no thunder; the rain beating on the tin roof was what did it. It would be wonderful to learn more about this intriguing aspect of turtle behaviour.

By the end of 1982, Viji had a captive breeding group of cane turtles and Travancore tortoises (*Indotestudo travancorica*) established at the Croc Bank. She set up a field camp in the Nadukkani forest, Kerala (a very remote and pristine forest, with the least damage wrought by fire) to study these two chelonians. It was several kilometres from the nearest Kadar village and it was a challenge to get there even on a good weather day. She lived alone in a cave, the former abode of leopards and bears, for several months at a time far from any help should anything have happened. Here she captured and notched 125 turtles; if any of these turtles were caught again she would know how far they had travelled after being released. She also extended the range of what was being called India's rarest turtle to the Neyyar Sanctuary in Kerala (200 km south of Kavalai), and to Agumbe in Karnataka (over 200 km north of Kavalai).

Shekar also mentions Viji's incredible sense of direction. He said anyone going into the forest with her didn't have to worry about keeping track of where they were going or mentally marking particular trees to find their way back. She could wander through an unfamiliar forest for kilometres, without stopping to take stock of her bearings, and yet unerringly find her way back without any effort. Besides, while the rest of the group was cautiously keeping an eye out for elephants, she merely strolled through paying no attention to leeches, ticks or elephants. She was completely at home in the forest and no inconvenience fazed her. In addition to capture-mark-releasing of turtles, Viji also carried out the first studies in Indian forests on tracking the movements of turtles. In 1983, Viji's operating budget was about Rs. 900 a month (including salary). There was no way that the Snake Park could afford radio telemetry equipment but she did the best she could with what was available. She stuck a spool of thread onto the carapace of the turtles with Araldite and let them wander. Following the thread, she could then get at least a general idea of daily activity patterns and even figure out the approximate home range of the animals she was studying.

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The end

Ed says Viji was an excellent field biologist whose best traits were her perseverance and her ability to observe. She did not have a strong biological background to interpret the data she was collecting and Ed invited her to Eastern Illinois University to do her Masters. In September 1984, Viji left for the States to do her post graduation under Ed Moll and later returned to India to do field studies. In April 1987, she was found dead, of unknown causes, in the forest she loved; she was 28.

Epilogue

In 2006, 19 years later, her name was formally given to the cane turtle that she spent so much of her time studying – Peter Praschag, the son of Reiner Praschag, and several other herpetologists analysed the DNA of Reiner's now-dead turtles and recently re-named the turtle *Vijayachelys silvatica* in her honour. It is a monotypic genus, which means that there is no other turtle like it to share the name *Vijayachelys*. Just as there are very few other people like Viji.