

Short Communication

**The Use and Knowledge of Herpetofauna on Little
Nicobar Island, India**

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Abstract: *The island of Little Nicobar in the southern Nicobars is the least developed of all the inhabited islands in the archipelago. The Nicobarese are one of the few tribal communities who are exempt from the provisions of the Indian Wild Life (Protection) Act, 1972. Studies on the use of wildlife in the Nicobars are rare in spite of the knowledge and use of species for consumption and sustenance. This article focuses on the ethnobiology of herpetofauna in Little Nicobar and the methods of use. This was part of a larger study on the food production and procurement strategies of the 'Payuh', who are the ethnic group of islanders who identify themselves as such on the island of Little Nicobar and surrounding regions; the term 'Payuh' is in use even in the Nancowry group of islands and on the south western coast of Great Nicobar Island but these populations are culturally distinct in many ways. Though local communities have lived off forests and fauna for many years, and occupied the coast for habitation and conversion into plantations, wild species still persist on the island in less disturbed habitats, unlike other islands in the archipelago. This article details the way these islanders describe the herpetofauna.*

Keywords: herpetofauna, Little Nicobar, India, food, resource use, habitat conservation

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Conservation and Society, Pages 155–165

Volume 4, No. 1, March 2006

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INTRODUCTION

THE ANDAMAN AND NICOBAR group of islands are situated in the Bay of Bengal, spanning latitude $6^{\circ}45'N$ to $13^{\circ}41'N$ and longitudes $92^{\circ}12'E$ to $93^{\circ}57'E$. (Figure 1). The Ten Degree Channel separates the two island groups, distancing the Nicobar archipelago 160 km south of the Andaman Islands. The Nicobar group of 24 islands is clustered into three groups, and only 12 are inhabited. The northern group has two islands Car Nicobar Island and to its south, the small island of Battimalv. Car Nicobar island is the headquarters of the Nicobar District. The middle section of the group consists of Tillangchong, Chowra, Teressa, Bompoka, K/Camorta, Trinket, Katchal and Nancowry islands. The southern Nicobars is a group of two large islands, Great

Figure 1.
The Nicobar Islands.

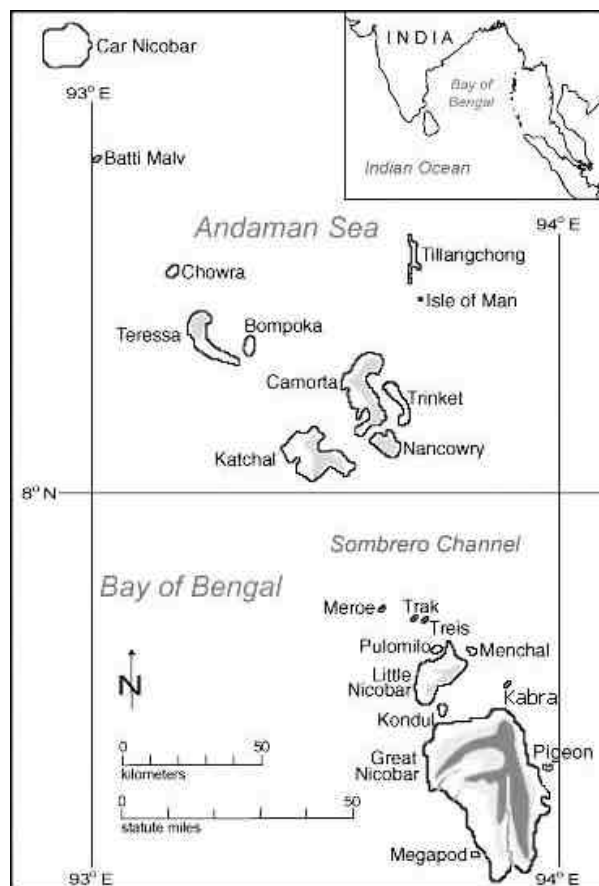
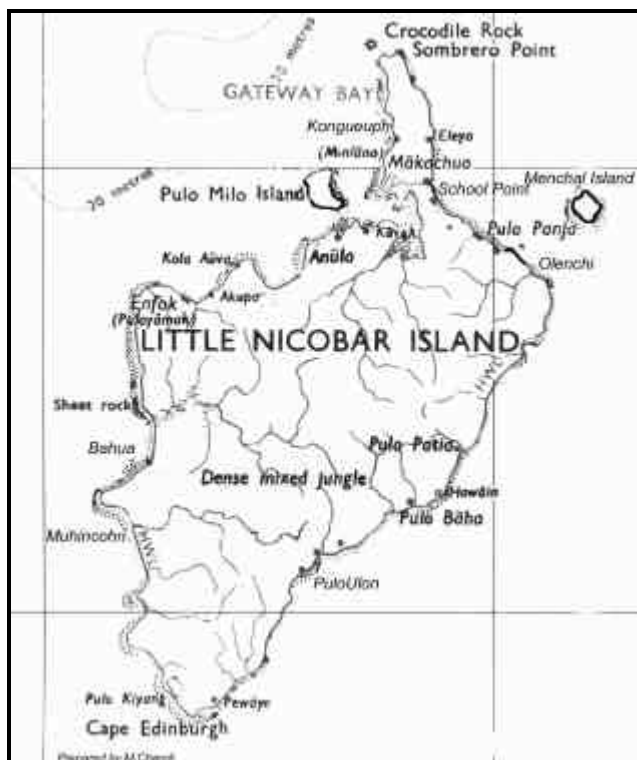


Figure 2.

Little Nicobar Island.



and Little Nicobar Islands, and smaller islands, Kondul, Pulomilo, Menchal, Trak, Treis, Kabra and Meroe; the last five are uninhabited (Saldhana 1989; Andrews and Sankaran 2002) (Figure 2). However neighbouring islanders visit these islands to harvest produce from their plantations.

The islanders are commonly referred to as 'Nicobaris' by outsiders as a general term for residents of the Nicobar archipelago, but these islanders have different dialects and terms of reference for each other. The 'Payuh' are a group of islanders who inhabit the southern Nicobars, mainly Little Nicobar Island, Kondul and Pulomilo while some of their relatives are also distributed throughout the archipelago mainly in the Nancowry group of islands. Payuh, which means 'native person', is used by these islanders to distinguish themselves from other islanders of the Nicobars, by dialect/language and geographical location.

This article discusses perceptions and knowledge of the Payuh of the herpetofauna that are part of their island ecosystem; this knowledge has been built up over generations of interaction and use. The distribution of these faunal elements

across the island makes confrontation and regimes of perception and use inevitable. The island is a mosaic of wet evergreen forest tracts in the interior, coastal beach forest, freshwater swamps, mangroves, and riparian forest that cut across the island. There has been little or no previous documentation of the culture and faunal resources of the island of Little Nicobar. This article attempts to present a different way of looking at the species discussed; namely through the eyes of the indigenous islanders.

METHODS

Fieldwork was conducted between the years 2000 and 2003 focusing on use of natural resources during which this information was also gathered. The island of Little Nicobar was surveyed to map settlement regions after which nearby islands that are used for plantations were also visited. My focus being on the production and processing of food found naturally on the island, fieldwork extended to more than 3–4 months at a stretch over two and a half years in various seasons. This gave me ample opportunity to observe and participate in life amongst the islanders I was staying with. My residence was largely confined to a small hamlet and two others along the west coast primarily as they were the most isolated, those that continued most traditions, was the richest in floral and faunal elements in which I was interested in knowing of how they were used and also because the most amount of hunting and gathering activities were concentrated in this area.

RESULTS

The large reptiles that the Payuh frequently come into contact with are the saltwater crocodile, *Crocodylus porosus*, the four species of marine turtles, the water monitor lizard (*Varanus salvator nicobarensis*) and the reticulated python (*Python reticulatus*). Other herpetofauna found on the island are not common in Payuh dialogue or use, but are known by those who come into contact with such fauna during their infrequent treks in the forest. The indigenous islanders of the Andaman and Nicobar islands are exempt from the schedules of the Indian Wild Life Protection Act (1972), and are allowed to use wildlife for sustenance but not as articles for sale. The Payuh, like other Nicobar Islanders are sedentary and live along the coast by tending plantations and fishing. Forays into the forest are largely by a few men, to hunt or collect timber and other building materials when necessary. Women and children are largely confined to the precincts of the settlement and gather such information only through the descriptions of eventful hunts and creatures encountered by men who venture into the forest for food. Amongst the Nicobar herpetofauna (Das 1999, 2002) discussed here, apart from the Malayan Box Turtle, frogs, agamids, skinks and snakes, the other large reptiles are all sources of protein and part of the Payuh diet.

Malayan Box Turtles (*Cuora amboinensis*), known as 'Etaing' in Payuh dialect, are commonly kept as pets; since they are harmless and easy to look after, these turtles are tethered or are kept in an enclosure. It is common but elusive and rarely found, only being noticed and flushed out by dogs accompanying hunters in the forest.

Due to the difficulty in finding this species, nothing much is known of its natural history except that it is found in swampy regions in the forest, usually inundated during the monsoon. This species occurs only on the two large islands, Great Nicobar and Little Nicobar Islands, and is not known to exist on the surrounding islands (Das 1996, 1999 for the geographic distribution of this species). The reticulated python (*Python reticulatus*), the largest snake found in the archipelago, is known as 'Yammai' in the Payuh dialect. Another reference 'Yammai kamai' literally means 'eater of our chicken'. This species is also referred to as 'Tulanth', a name more commonly used by all islanders in the Nicobars and not specific to the Payuh. The python is named for its uncanny habit of attempting to feed on prized domestic fowl of these islanders. It is known to visit households to feast on this easy prey, but is often discovered before its meal is digested and is killed. There have been instances when large pythons have been killed after feasting on fully-grown domestic pigs. After the snake is killed it is usually sent to sea on a miniaturized canoe, to displace it as an element of destruction from the village precincts. Some Payuh hunters told me that pythons looked different in the inland forest compared to the ones found along the coast and settlements. The pythons found in the inland forest are supposed to be darker in colouration, heavier bodied and longer than those found on the coast. Not having seen a single live python in the wild the Payuh suggested I visit Menchal Island along the northeastern coast, which was supposed to have a healthy population of pythons. The plantations of the Payuh on such outlying islands are chiefly of coconut. Banana trees of many varieties are also planted along the edge of coconut plantations close to the forest. The pythons are known to frequent the banana trees to prey on birds and fruit bats that feed on the fruit. We searched all trees with ripe and ripening fruit, but were unsuccessful in locating the reptile. The birds that visit the trees are usually parakeets (*Psittacula caniceps*), hill mynas (*Gracula religiosa*) and black naped orioles (*Oriolus chinensis*). Pythons coil around the ripe bunch of fruit and lie in wait for the birds and bats that visit the trees. Apart from the nearly universal disgust and fear of snakes, some Payuh found such behaviour intelligent enough for the snake to deserve some of their respect.

Apart from the python, other snakes that are seen on occasion are the 'Biyohe' the bronze-backed tree snake (*Dendrelaphis pictus*), the 'Kaoni' the dog-faced mangrove snake (*Cerberus rhynchops*) and the 'Hiya paloah' the marsh snake (*Gerardia prevostiana*) (see Table 1) all of which are common but rarely seen. The Biyohe is often seen atop coconut trees searching for geckoes or small skinks such as young of *Dasia nicobarensis/olivacea*

'Palainh'. The sea snake 'Gok layuh' (*Laticauda colubrina*) comes ashore at a few places on the main island but is seen more commonly on the smaller islands such as at Kabra Island, known for its mosquitoes and sea snakes.

Table 1

Herpetofauna of Little Nicobar Island and a list of local terminology. Common and specific names are from Das (2002)

Common name	Scientific name	'Payuh' name
Crocodile, saltwater	<i>Crocodylus porosus</i>	<i>Kohngueveh</i>
Gecko, Asian house	<i>Hemidactylus frenatus</i>	<i>Kalachiya</i>
Gecko, Nicobarese bent toed	<i>Crytodactylus adleri</i>	<i>Kalachiya</i>
Gecko, Smith's giant	<i>Gekko smithii</i>	<i>Upaung</i>
Lizard, Bay islands forest	<i>Coryphophylax subcristatus</i>	<i>Ku auwh egh</i>
Lizard, Nicobarese worm	<i>Dibamus nicobaricum</i>	<i>Nyual</i>
Lizard, water monitor	<i>Varanus salvator</i>	<i>Tamau heeauwegh</i> (hatchling) <i>Ukoungeh</i> (Juvenile) <i>Harouiin</i> (adult)
Reticulated python	<i>Python reticulatus</i>	<i>Yammai</i>
Sea turtle, green	<i>Chelonia mydas</i>	<i>Kao kaa</i>
Sea turtle, green (with smaller head thought to be rare different species)	<i>Chelonia mydas</i>	<i>Kao hippuh</i>
Sea turtle, hawksbill	<i>Eretmochelys imbricata</i>	<i>Kao kayil</i>
Sea turtle, leather back	<i>Dermochelys coriacea</i>	<i>Hikunth</i>
Sea turtle, olive ridley	<i>Lepidochelys olivacea</i>	<i>Kao reyeh</i>
Skink	<i>Mabuya</i> sp. or <i>Lygosoma bowringii</i>	<i>Pangaonh</i>
Skink, Nicobar tree	<i>Dasia nicobarensis</i>	<i>Palainh</i>
Skink, olive tree	<i>Dasia olivacea</i>	<i>Palainh</i>
Skink, small-eared striped	<i>Lipinia macrotympana</i>	<i>Hinku awaih kinyuh</i>
Snake, bronze-backed tree	<i>Dendrelaphis pictus</i>	<i>Biyohe</i>
Snake, dog faced	<i>Cerebrus rhynchops</i>	<i>Kaonl</i>
Snake, marsh	<i>Gerardia prevostiana</i>	<i>Hiya paloah</i>
Snake, Nicobar cat	<i>Boiga wallachi</i>	<i>Puaaonh</i>
Snake, sunbeam	<i>Xenopeltis unicolor</i>	<i>Ngooh moh</i>
Snake, triangle backed water/keelback water	<i>Xenochrophis trianguligerus</i> , <i>X. melanozostus</i>	<i>Hiya paloah</i>
Snake, yellow-lipped sea	<i>Laticauda colubrina</i>	<i>Gok layuh</i>
Snake, wart	<i>Acrochordus granulatus</i>	<i>Cindral</i>
Frogs (unidentified species)		<i>Chumlayn koitha</i>
Toad	<i>Bufo camortensis</i>	<i>Pindram</i>
Turtle, Malayan box	<i>Cuora amboinensis</i>	<i>Etaing</i>

See also notes 1, 2 and 3.

Sea turtles, 'Ka owis' are a common source of meat; as in other parts of the world they are exploited while nesting, and are also harpooned from canoes. Four species are known to nest in and around the archipelago (Bhaskar 1993; Andrews et al. 2001), and more specifically on the western coasts of Little Nicobar Island. Of these, the leatherback sea turtle is the only species that is not hunted for its meat nor are its eggs collected, except by a few very elderly people. The green sea turtle (*Chelonia mydas*) and the hawksbill sea turtle (*Eretmochelys imbricata*) visit mostly outlying islands including some beaches on Little Nicobar Island, whereas the leatherback sea turtle (*Dermochelys coriacea*) and the olive ridley (*Lepidochelys olivacea*) are known to nest only on the beaches of the larger islands, Great Nicobar and Little Nicobar Islands. Some Payuh reported another species that nests occasionally on the smaller beaches, similar in appearance to the Green sea turtle but with a larger head. However surveys conducted since 1977 in the Andaman and Nicobar Islands provide no evidence of any other species nesting on beaches in this island group (Bhaskar 1993; Andrews et al. 2001). These islanders have a name for this species 'Kao hippuh'; the other local sea turtle names are, 'Hikunth' for the leatherback sea turtle, 'Kao ka' green sea turtle, 'Kao kayil' hawksbill sea turtle, and 'Kao reyeh' olive ridleys.

Eggs of these species are collected and eaten during the nesting season, when available and found. Only a few elderly people consume the eggs of the leatherback turtle, undeterred by its smell and a local belief that it has energy draining properties and hastens aging. The arrival of the sea turtles is associated with the monsoon winds, 'Suhop' the southwest monsoon winds and 'Phool' the northeastern winds. It is observed that hawksbills and green sea turtles arrive to nest after the leatherback and olive ridley sea turtles, starting in May, following the pattern of northeastern winds which blow before the southwest monsoon. The leatherback sea turtle is the only species that is not eaten and all hunted hawksbill turtles are checked for the presence of fat around its neck. The presence of fat is an indicator that the turtle has been feeding on algae or a species of sea grass, which makes the meat poisonous and unfit for consumption. Most turtle meat is consumed raw (any raw edible meat is called 'uhavgh'), directly from the carapace, choice portions are carved out for children. Sea turtles are hunted at night using a torch of dried coconut leaves, or with a petromax lantern held aloft on a canoe punted slowly over sea grass beds offshore or over nearby coral reefs. The disoriented turtle surfaces and is seemingly confused by the light, making it easy to harpoon from the canoe. Coral reef regions known as feeding sites of turtles during the day are visited in the hope of harpooning a turtle. Invariably these turtles happen to be hawksbill sea turtles. The Green sea turtle is the next most commonly hunted turtle. Some Payuh also keep sea turtle hatchlings as pets. Very rarely do the turtles grow to a size worthy of it to be eaten. More often, the hatchlings die or are released by children while playing with their pets in nearby creeks. Green, olive ridley and hawksbill sea turtles that are

encountered on the beach while nesting are promptly captured for food. At the start of the nesting season for these species, the first nesting turtle is usually only known by its tracks, after which a count of 12–14 days is kept by the help of a leaf of the Cycas (*Cycas rumphii*)—‘rai tiwiyle’. The leaflets are broken off on each day until the specific number of days is reached. Then the entire beach is patrolled at night to await the arrival of the turtle that came earlier on, in the belief that it would arrive again and bring other sea turtles along with it to nest.

The monitor lizard (*Varanus salvator nicobarensis*) is the only reptile that has different names within Payuh ethnoanemology. It is distinguished by size; the larger more commonly seen lizard is called ‘harouin’, whereas its juvenile counterpart is called ‘ukoungheh’. Brightly streaked hatchling monitors are called ‘tamau heeauwegh’. The *tamau heeauwegh* is considered a delicacy as it is not often caught and moreover the fat it contains adds to its taste as well ignites the fire ‘heeauwegh’ of the barbecue. These are not considered to be separate species; the names distinguish size classes and taste. Monitors are acknowledged to be clever animals, mainly because they get to megapode (*Megapodius freycinet abboti*) eggs before humans can and are able to steal crocodile eggs with ease. This lizard is also known to lay its eggs in megapode mounds, after consuming the megapode eggs if any, or eggs of the sunbeam snake (*Xenopeltis unicolor*), ‘Ngooh moh’, also known to use the mound to lay its eggs. This large lizard is not hunted regularly but only left to chance encounters in the forest, when hunters’ dogs sometimes encounter and corner them. However the cleverness and agility of the monitor lizard has earned it a status among the Payuh as the elder brother of the crocodile.

Of all the reptiles that the Payuh come in contact with, the saltwater crocodile (*Crocodylus porosus*), [known to the Payuh as ‘Kohnghueveh’] is respected for its strength and its meat as a culinary delicacy. Though it inhabits several estuarine creeks and freshwater streams that criss-cross the island, only a few Payuh hunters are both brave and knowledgeable about the techniques to hunt this species. Though the final hunt is fairly simple, the knowledge of the terrain deep inside the forest where it is easy to hunt crocodiles that inhabit pools in freshwater streams, and being able to ‘study the water’ for crocodile trails requires an experienced hunter. This experience is scarce among the Payuh, and thus the meat is elevated to a delicacy, which is shared generously and equally among the participants of the hunt, and other hamlet residents. Due to the lack of experience amongst most Payuh, crocodile hunts are incidental and very rare, being restricted to periods when conditions along the courses of streams are favourable. On the other hand, crocodiles are also allowed to inhabit creeks adjoining villages until they begin to prey on the Payuh’s dogs and pigs. If any such incident should occur, the offending crocodile or an unfortunate substitute from that particular creek is killed soon.

Only a few hunters are accustomed to the techniques of crocodile hunting, so in the event of any meat being available, it is shared with all neighbours in the

village. Hunting the species for its meat involves long treks into the upper reaches of the freshwater stream, where crocodiles are known to nest and prey on boar, macaques and fish. Once the shallows of the meandering stream are reached, the hunter studies the deep pools found invariably at every turn of the stream. Slide marks and claw prints on the banks are the most revealing signs of the animal, but these are not sometimes seen due to the canopy overhang and the unsuitability of a basking spot for the crocodile. I eventually learnt that a faint trail left by the animal on the stream bed while swimming upstream was the clearest and latest evidence of the crocodile's presence. This is established by poking a fine long stick, which also serves as a harpoon, into the deep pools to check for the presence of the crocodile. When a poke results in a twitch by the animal underwater, a barbed harpoon head tied to a long rope is used to snare the crocodile. A few more harpoon heads are similarly thrust into the crocodile, which by now starts rolling and struggles to get loose, until it tires. The stressed reptile is hauled up onto the bank and is killed by a quick jab of a knife behind the skull to sever the spinal chord. The animal is then cut up from the belly and all the meat is apportioned; only the innards, the skull and claws are left behind. The innards are thrown into the water for other crocodiles or given to the accompanying dogs; the skull is strung up on the nearest branch in the forest as a trophy of the hunt, and is not taken home. The meat is not skinned, but is cut to sizeable portions to be barbecued.

Hunts take place only during summer when the stream is shallower and hunting crocodiles is easier. During the rains, inundated regions along streams are avoided, as by then the crocodiles have moved into the forest areas near the streams to nest and are more aggressive. During the monsoon, the Payuh hunters believe that crocodiles roam along the inundated foothills of hillocks in the forest to prey on wild pigs. During this period, hunters avoid these regions for fear of losing their prized hunting dogs to crocodiles. Crocodiles are believed to possess three pairs of eyes by some Payuh hunters. Apart from the regular eyes, the gular glands and the paracloacal glands in between scales on the ventral surface are believed to be eyes that crocodiles use underwater to locate prey and hunters. This adds to the extra care and respect with which crocodiles are treated by experienced hunters who are capable of exploiting it as a resource.

The crocodile also features in shamanistic rituals on the island. Shamans, '*Minlooneh*', use a variety of effigies, '*Kareyou/Kareva*', to both treat and exorcise illnesses and cast spells. The effigies are carved according to the perception of the illness afflicting the patient, and what the shaman in his trance sees beyond the obvious. A few effigies incorporating crocodile heads were observed, some with a man's head in its jaws, others as part of a larger creature, an amalgamation of cryptic animals seen in the shaman's trance. The only other reptile or amphibian to figure as a '*Kareyou*' was a toad, '*pindram*'. I was told a belief of a gargantuan '*pindram*', which is said to live deep in the forest and has been seen only by a few ancestral '*minlooneh*'. It is

said to be visible to only few people; the effigies are reminiscent of its existence in the healing and spiritual world of the Payuh.

CONCLUSION

With such close proximity to herpetofauna, and their use over centuries, the Payuh appear to have (until now) been successful in integrating their traditional livelihood patterns with modern conservation ideology. The use of species is restricted to successful and knowledgeable hunters, seasonal variation, and fortunately an absence of trade in these species until now. Being coastal dwellers, the forest and water systems are intact and pristine, resulting in natural habitat for many species, promoting both wildlife and human existence. The use of species being varied over seasons and substantiated with fish and horticultural fruit, the Payuh seem to take only what is needed, secure in the knowledge of its availability in future.

Acknowledgements

I thank Harry Andrews and the Andaman Nicobar Environmental Team, a division of the Madras Crocodile Bank Trust for the opportunity and resources that facilitated the survey. At Little Nicobar Island, Moses, Abed, Hajoon, Roghtauh, P. Joorra and Kanyungh for sharing experience, time and space. The District Commissioners (Andamans and Nicobar districts) for permission to visit these restricted tribal areas.

Notes

1. Three species of Mabuya (*M. multifasciata*, *M. rudis* and *M. rugifera*) and another skink *Lygosoma bowringi* are known from the region; all are referred to as 'Pangaonh', with no specific name for each. Similarly, the two Dasia species are known as 'Palainh'; all geckoes with the exception of *Gekko smithii* are called 'kalachiya'. The Asian house gecko, *Hemidactylus frenatus* has successfully colonised huts on uninhabited islands such as Meroe, Menchal, Treis and Trak islets, by arriving on such islands as stowaways, during plantation work. *Gekko smithii*, *Dasia nicobarensis* and *D. olivacea* are frequently encountered while climbing coconut trees to either harvest nuts or while tapping toddy.
2. A fish, of the family Syngnathidae, order Gasterosteiformes, [sea horse's and pipe fishes] was also described as a small crocodile-like lizard locally called 'Kumyeh kaunh' due to its visual similarity to lizards. This observation occurred while leafing through the photographic guide and seeing the picture of the *Gharial* (*Gavialis gangeticus*). A marine snake eel ('Hinkat'), which mimics the colubrine sea snake (*Laticauda colubrine*) in colour was also seen on reefs in the region. When disturbed (the eel was initially mistaken by myself to be a colubrine sea snake and my attempt to capture the specimen disturbed it) the eel reverted to a dull brown colour of surrounding rocks and boulders along the reef flat.

3. Most freshwater snakes are called 'Hiya palaoh' unless identified carefully. The Nicobarese worm lizard *Dibamus nicobaricum* is often confused with earthworms. The small-eared striped skink *Lipinia macrotympana* is believed to have properties to cure urinary tract infections, and is used by placing the animal on the patient and massaging the region with it. Similarly toads *Bufo camortensis*, are believed to possess curative properties, especially to clean areas severely infected with pus, such as splinters decomposing in the skin, and also cases of folliculitis/abscesses. The remedy in these cases is to place a live toad with an incision on its ventral region to expose the beating heart and place it over the infected part so that the throbbing heart may absorb the infection and relieve pain. This technique though often mentioned by suffering people asking for relief, is rarely practised due to the fear/disgust evoked by the amphibian and the pain that this method might induce. Some swear by this as the most effective remedy.

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