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THE COMMONLY AVAILABLE ANIMALS (WITH SPECIAL REFERENCE TO CRAB) AT PURI SEA BEACH AND ITS ADJOINING AREAS

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ABSTRACT

On spot perusal of animals by the young biologists help them to enrich their knowledge regarding the habits and habitat of those organisms. The young guys who watch the wild animals at their natural abode for the first time in their life feel highly excited and enthusiastic. Due to this very reason an essential part of curriculum of biology syllabus should be excursion to places where students can maximally be benefitted. Puri (Orissa) is a small town but well known for the famous Lord Jaggatnath Temple and its calm and wide sea beach. Fishing by the locals in the morning results the availability of a variety of invertebrate and vertebrate animals at the beach that make the visitors watch them with curiosity and enthusiasm. For academic purpose, particularly for the graduate students of life sciences visiting Puri and its nearby places are highly useful. Students can also learn that how a large chunk of our population depend on these animals for their livelihood. The social status of people involved in sea fishing can also be envisaged.

KEYWORDS : Puri beach, Students excursion, Crabs, Coastal fishes, Chilika lake

It was a fascinating experience to a group young graduate biologists to visit the sea beach at Puri in the morning hours to see the wide, open, water spread domain. To those who visited the sea shore for the first time, it was fascinating, wonderful experience which made them realize the vastness of oceanic region. There on the sandy beach, we interacted with a crustacean animal that is crab. Available in almost every size, they could be seen hurriedly running on the sandy beach and hiding in the holes clearly visible on the surface. When we first entered the area we could see a large number of such holes on the sand surface. This gave us the idea that some animal species might have prepared these exits and soon this curiosity triggered interest in some of the group members who immediately started exploring the task by digging one end of the hole. It was easy to dig and thus they started getting some crabs in varying sizes.

Puri beach is a long, calm, and sandy place where the burrowing animal like this crab can find most favorable place to live. Crabs can be seen coming out from the sea and then moving towards the sandy belt where sensing danger they unhesitatingly enter into any of the immediately lying hole. The native of this place can very well judge the size of the animal hiding in the burrow as they consider that the exit of wider diameter would be occupied by the larger crab. Our students dug a number of holes and could successfully drag crabs from their dwellings but they could not succeed in getting large sized animals. We consulted some elderly inhabitants of the area and they told us that better you dig larger holes. There were lots of crabs scurrying on the sand. They were oversensitive to nearby disturbances and would quickly dig into a burrow the moment they hear footsteps. But if one sits quietly beside the hole they would emerge after some time. Crab eyes are sensitive to movement. So as long as one sits still one can watch them from close distance.

Visiting to the sea beach especially to sandy spread gives a glimpse of crabs scurrying over the sand. There are nearly 6,000 species of crabs throughout the world. Identifying them can be very interesting but that will be the sheer endeavor of a hardcore taxonomist of crustacean knowledge. Crabs dwelling mostly in sandy area are very small and prefer to live at water's edge. The commonly occurring shore crabs are widespread species and have wide occurrence. Crabs belong to Phylum- Arthropoda, one of the largest phyla of the animal kingdom. Animals of this phylum are characterized with jointed appendages, compound eyes, cuticularchitinous covering, dioecious with distinct sexual differences in most cases. Other taxonomic categories of crabs are: Class- Crustacea, Order- Decapoda,and Suborder- Reptantia.Hundreds of species of crabs are known to occur in different habitats like marine, brackish, fresh water, terrestrial and semi-terrestrial and are found to be distributed throughout the world's tropical and subtropical regions. They were considered to be monophyletic in origin but the present analysis reveals that at least two distinct lineages are there.

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Figure 1 : Photograph Showing the Abundantly Occurring Crab at Puri Beach

Crabs feed upon variety of foods and thus are considered as omnivorous, feeding on plants like algae, small crustaceans , insects, worms, microscopic food items and detritus. Many species feed upon plant and animal species whereas others may be strictly feeding on a specific diet. Some eat plankton, some eat upon shellfish like clams and some even prefer small fishes.

Crabs show unique behaviour in walking. They typically walk sideways this is due to the articulation of the legs which makes a sidelong gait more efficient. Some crabs species are capable of swimming and this is accomplished because their last pair of walking legs are flattened into swimming paddles. They can communicate by drumming or waving their pincers. Crabs also show aggressive behaviour against the intruders and males can be spotted fighting each other to gain access to females. Terrestrial species dig burrows in sand or mud, which they use for resting, hiding, mating and to defend against intruders. Several species of crabs are gregarious and show social behaviour as several members work together to provide food and protection to their family members. At the time of mating season, they select suitable spot for the female to release her eggs.

The two sexes are seen to be involved in some sort of courtship behaviour before they commence for mating. In aquatic species scent i.e. pheromones play an important role in attracting the two sexes where as terrestrial forms rely on visual, acoustic or vibratory signals. Male of Fiddler crab waves its large claw to attract females. Fertilization in crabs is internal. For many aquatic species, mating takes place just after the female has moulted and is still soft. Females are capable to store the spermatozoa for a long period. The fertilized eggs are glued onto the female's abdomen, below the tail flap. In this location they are protected during embryonic development. The newly hatched larvae are released into the water for further development. The free-swimming tiny zoea larva lives an independent life undergoing further structural changes. Zoea stage metamorphoses into the next larval form, megalopa stage, which almost resembles an adult crab, except for having the abdomen protruding out behind. After one more moult, the crab is a juvenile, living on the bottom of the aquatic habitat. Most species of terrestrial crabs must move down to the ocean to release their larvae and during this phase some species experience very extensive migrations. After living for a short time as larvae in the ocean, the juveniles must do this migration in reverse. Crabs are esteemed as food in several places in the world. Crabs are prepared and eaten as a dish in several different ways all over the world. Some species are eaten whole, in which the shell remains intact, e.g. soft shell crabs and in some cases just the claws or legs are eaten. Mostly in east Asian cultures, the roe of the female crab is relished, which is usually colourful in fertile crabs. Countries like USA,

Figure 2 : Photographs Showing Fishes Being Dried at the Sea Beach and a Freshly Caught Fish at the Beach

Figure 3 : Photograph of an Eel Fish (*Anguilla*) in Its Full Grown Size

Figure 4 : Photographs Showing Dorsal and Ventral Views of Sting Ray Being Raised by Inserting Fingers in the Spiracles

Japan, Canada , France, Spain, Hong Kong, and Portugal are the biggest importers, and these are the countries where eating crab is immensely popular.

The Puri beach is a nice place due to a number of reasons. It remains not much crowded especially in the evening time and visiting in the late evening gives very comfortable mood to think the vast strength of our nature. This beach remains secluded in the summer for most of the time in the mid of the day. During the early morning the beach becomes one of the popular sites to visit and take bath. Persons renting out tubes (inflated truck tubes used as a floatation device), decorated camels and locals selling some edible items are seen doing earnings from the customers. During the session 2014-15, 42 students visited the same sites and had first chance observing coastal animals in their real habitat especially the crabs. By visiting this place in two different seasons one can have idea that when these animals are in more site as we could catch the crabs in the month of October in more number than in the beginning of November.

Coastal fishing by locals using small boats helps them to catch small and moderate sized fishes and some other animals like jelly fishes, oysters, prawns, etc. Students could see how the catch brought at the shore were being separated from the nets and sorted into different groups. Some of the common fish catch like eel fishes (*Anguilla*), flat fishes particularly Pleuronectes,Cyanoglossus species, pamfrets, ribbon fishes, Bombay fish i.e. Harpodon, sting rays, mackerels, can be well spotted in the catch. It was difficult to identify every type of fish by its generic name and a thorough study of the fish fauna of this region is definitely needed to have better understanding in this regard. Locals could not help in this respect because they know only local Oria names of the fishes and thus scientific information cannot be derived from them.

Nandan Kanan Zoo

It is a zoological park that is spread in about 400 hectare area in Bhubaneswar. It harbors more than 150 species of animals including 67 species of mammals, 81 species of birds, and 18 species of reptiles. It is famous for white tigers, a beautiful reptile park in which a large number of reptilian species of lizards, snakes and crocodiles can be spotted. A well maintained fish aquaria having a variety of fishes is always a matter of attention. The zoo runs captive breeding units of all the three crocodilian species.

Chilka Lake

Students seeking education particularly in biological sciences find this place highly educating as it provides a place where one can have understanding of an aquatic ecosystem. An ecosystem of brackish water body spread in the area of about 1100square kilometers is the largest coastal lagoon in India and the second largest lagoon

Figure 5 : Crocodiles of the Same Age Group Basking at the Sandy Surface

in the world. This brackish water lagoon is the preferred abode of a large number of invertebrate and vertebrate lives. Every time we planned to visit Chilka lake on the first day of our stay at Puri. It takes nearly one and a half hours to reach to lake site where we had to get our boats booked. Being a large group of around 50 or more students we had to hire seven or eight boats for comfortable accommodation. In the lake, one can spot scores of boats spread around the domain of large water body where people of all walks of life enjoy the boating and respond to passing by boats by waving their hands. People coming to this spot are mainly told that they would be able to see dolphins as they feel that this mammal would be a matter of curiosity for them. Although seeing dolphins needs high patience as they randomly appear for few seconds on the surface and spending larger moments for spectators at a place becomes difficult due to congregation of large number of generator operated boats producing noise and diesel fumes.

This lake hosts over 160 species of migratory birds in the peak season and these birds travel great distances to come to this destination. According to a government survey, 45 percent of the birds are terrestrial in nature, 32 percent are waterfowl, and 23 percent are waders. The lagoon is also home for 14 types of predatory birds. Around 152 rare and endangered Irrawaddy dolphins have also been reported. This lake also supports about 37 species of reptiles and amphibians. All above description of this review article shown in figure 1-5.

CONCLUSION

Today, every young individual should be taught with emphasis, the significance of the biological world we have around us. Organizing excursions to the areas where our young generation could spot varied form of life and can realize the importance of biodiversity be always encouraged and praised. Biodiversity is the foundation of ecosystem services to which our human society is well linked. We are an integral part of this diversity as is the food, clothing and other biological resources that sustain us. Due to enormous growth of our population, the biodiversity is being threatened at an unprecedented rate. This is the consequence of habitat destruction and human misuses of over exploitation. We are now realizing the negative consequences of our endeavor in the name of development. Countries with rich biodiversity but ever increasing population have to face more severe effect as they face the needs of developing its economy, improving people's livelihood, and provide food security.

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