

## PADMAJA NAIDU HIMALAYAN ZOOLOGICAL PARK

DARJEELING, WEST BENGAL  
NEWS LETTER  
April - June 2014

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From the Director's Desk.....

This quarter as usual includes Acquisition and transfer of animals from different zoos, birth of animals, publication, VIP visits and valuable comments. The Zoo celebrated World Environment Programme on 5<sup>th</sup> June 2014. Sit and Draw competition was organized for the students and the topic were "My favorite wild animal" and "A tree saves many lives". Ten schools participated in the programme. The park engaged students from different schools and universities as zoo interns for working in different aspects of park management. The recommendation placed by the intern shall help in further zoo management.

A.K. Jha IFS

Director

Padmaja Naidu Himalayan Zoological Park



## ✚ Acquisition and Transfer of animals

Following are the acquisition and transfer of animals during the quarter

EVENT	DATE	SPECIES	TRANSFER TO	ACQUIRED FROM
Acquisition	19.04.2014	Snow leopard (1:0)		Jhilava Zoo, Czech Republic.
Transfer	18.06.2014	Kaleej Pheasant (1:1) Golden Pheasant (2:2) Red Jungle Fowl (2:2) Silver Pheasant (1:2)	Assam State Zoo cum Botanical Garden, Guwahati.	
Acquisition	20.06.2014	Slow Loris (1:1)		Assam State Zoo cum Botanical Garden, Guwahati.
Acquisition	25.06.2014	Reeves's Pheasant (3:4)		Kolkata



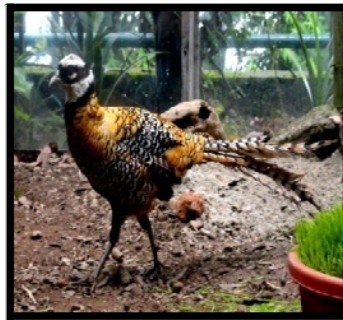
Snow Leopard Sici



Transfer of Pheasants to ASZBG



Slow Loris



Reeves's Pheasant

**Birth of animals**

Following are the births of Carnivores, Lesser carnivores, Herbivores and pheasants

SL NO.	DATE OF BIRTH	SPECIES	NUMBER OF CUBS/FAUN/CHICKS
<b>PHEASANTS</b>			
1	27.03.2014	Grey Peacock Pheasant ( <i>Polyplectron bicalcaratum</i> )	0:0:2
2	10.04.2014	Grey Peacock Pheasant ( <i>Polyplectron bicalcaratum</i> )	0:0:2
3	16.05.2014	Grey Peacock Pheasant ( <i>Polyplectron bicalcaratum</i> )	0:0:1
4	13.03.2014	Red Jungle Fowl ( <i>Gallus gallus</i> )	0:0:4
5	07.04.2014	Red Jungle Fowl ( <i>Gallus gallus</i> )	0:0:6
6	03.05.2014	Temminck's Tragopan ( <i>Tragopan temminckii</i> )	0:0:3
7	08.05.2014	Silver Pheasant ( <i>Lophura nycthemera</i> )	0:0:4
8	15.05.2014	Silver Pheasant ( <i>Lophura nycthemera</i> )	0:0:4
9	17.05.2014	Golden Pheasant ( <i>Chrysolophus pictus</i> )	0:0:6
10	21.05.2014	Golden Pheasant ( <i>Chrysolophus pictus</i> )	0:0:4
<b>HERBIVORES</b>			
11	04.05.2014	Himalayan Thar ( <i>Hemitragus jemlahicus</i> )	0:1
12	18.05.2014	Himalayan Thar ( <i>Hemitragus jemlahicus</i> )	0:1
13	24.05.2014	Blue Sheep ( <i>Pseudois nayaur</i> )	0:1
14	24.05.2014	Barking deer ( <i>Muntiacus Muntjac</i> )	1:0
15	24.06.2014	Barking deer ( <i>Muntiacus Muntjac</i> )	0:1
<b>Lesser Carnivore</b>			
16	21.04.2014	Asian Palm Civet ( <i>Paradoxurus hermaproditus</i> )	0:0:4
<b>Carnivores</b>			
17	02.05.2014	Snow leopard ( <i>Uncia uncia</i> )	0:0:2



Grey Peacock Pheasant Chick



Red Jungle Fowl Chick



Temminck's Tragopan Chick



Silver Pheasant Chick



Himalayan Thar Fawn



Blue Sheep Fawn





**Barking Deer Fawn**



**Asian Palm Civet Cub**



**Snow Leopard Cub**

**Publications**

1. Roka B., & Jha A.K. Census of Red Panda (*Ailurus fulgens*) at Singalila National Park and its surrounding area, Darjeeling, West Bengal, India. *Zoos' Print*, Volume XXIX, Number 4, April 2014.
2. Rai S., Jha A.K. & Rai U. Behavioural Observation of Snow leopard (*Uncia uncia*) at new off display breeding Centre of Padmaja Naidu Himalayan Zoological Park. *Zoos' Print*, Volume XXIX, Number 4, April 2014.

**Outreach programme.**

The outreach programme of the Park involves students of all levels including trainees. The students are taken for a tour around the park and then an interaction session is conducted. The sessions include discussions on Role of modern Zoo, Conservation Breeding Programmes, how a zoo functions, what are rare and endangered species, environmental issues. What are the efforts taken up by the Park towards saving these species etc. The session also includes question and answer round where the queries of the students are attended to. At the end books related to animals, conservation breeding programmes, biodiversity of the Park and notebook are distributed to the students.

During this quarter the education wing of the Park attended 12 different institutes which are as follows:

Sl No.	Date of visit	Name of the School/ Training Institutes	Number of Students	Number of Teachers	Educational incentives imparted
1	02.04.2014	Gurukul Ashram School, Dhajea Busty.	33	7	Lecture on wild animals
2	02.04.2014	Puvikum learning Centre, Tamil Nadu	12	2	Lecture on wild animals
3	26.04.2014	Risheehat High School, Darjeeling	68	10	Lecture on wild animals
4	30.04.2014	Good Start	82	12	Lecture on wild

		Montessori School			animals
5	02.05.2014	Loreto Convent	120	4	Visit to the Park
6	02.05.2014	Central School for Tibetans, Darjeeling	63		Visit to the Park
7	03.05.2014	Tashiling Tibetan Settlement Office, A unit of His Holiness the Dalai Lama's Tibetan relief Committee	51	17	Visit to the Park
8	10.5.2014	St Joshep's School, Bihar	102		Visit to the Park
9	24.05.2014	CASFOS, Burnihat, Assam	31	2	Lecture on Zoo Management and Conservation Breeding programmes
10	24/05/2014	Himali Boarding School, Kurseong	80	5	Visit to the Park
11	28.05.2014	Don Bosco School, Malbasey, West Sikkim	78	6	Lecture on Zoo Management and Conservation Breeding programmes
12	07.06.2014	Shalom English School, Chotta Hatta	17	5	Lecture on Zoo Management and Conservation Breeding programmes



**Risheehat High School,  
Darjeeling**



**Municipal High School,  
Darjeeling**



**Gurukul Ashram School,  
Dhajea Busty**

✚ **VIP visits and their valuable comments**

Date of Visit	Name of the Visitor	Remarks
02.04.2014	Shri Alkesh Sharma IAS, Joint Secretary, Govt. of India. New Delhi	It was quite learning and enriching experience. I would like to compliment the team responsible for maintaining the zoo and for undertaking specialized breeding programme for endangered species.
13.06.2014	Shri Manoj Agarwal, IAS, North Bengal Development Department/Principal Secretary GTA	A very well maintained zoo with a perfect balance and harmony between fauna and flora. The specialized breeding programme for snow leopards and Red pandas offer this zoo a place of pride and distinction in its fraternity. My best wishes for all the office staff of this centre of excellence.
22.06.2014	Dr. Bikram Sarkar IAS (Retd), Kolkota	Wonderful time. My wife Sibani and I visited Darjeeling and the great zoo here after 21 years. We are very much impressed by the way the zoo is being maintained. Credit goes to Shri. Alankar Jha, Director and his team for this. We wish them great health.
26.06.2014	Brigadier General ,Md. Latiful Haider Addlt. Director General Border Guard, Bangladesh	We are really impressed to see the zoo in its perfect shape. We thank the zoo director and his staff for maintaining the zoo nicely. We also appreciate them for their kind hospitality.
<b>TOPKEYDARA VISIT</b>		
29.04.2014		The location of Snow Leopard and Red Panda is so beautiful and the system of Conservation and breeding centre is very nice and the staff is also hard working and look after the centre.
23.04.2014	Dr. Yogesh Bharadwaj, Veterinary Officer, Nainital Zoo (Uttarakhand)	After visiting this breeding centre of red panda and snow leopard, we are really satisfied as this centre is giving a good feel as the work is going in good direction, which is undoubtedly full of dedication and patience of all the staff involved in this. We are also feeling satisfied that this centre is working in India.
18.05.2014	Dr. Malay Maity, BLDO, Phansidewa.	The Breeding Centre at Thopkeydara is beautiful and fit for breeding of snow leopard and red panda.
18.05.2014	Dr. Uma Sankar Sen, Asst. Director, Disease Investigation, Siliguri, Dist. Darjeeling	Visited the breeding centre and found the snow leopards are maintained scientifically in natural condition. All the staffs including the doctor are working hard and sincerely to maintain the unit for increasing no. of snow leopards here for the sake of the environment.
19.05.2014	B.R. Sharma, M.S. WBZA	Very nice upcoming facility. Hope will be of great use in future. Darjeeling Zoo perhaps need to give more focused attention to Himalayan Thar (a species found in Singalila N.P. and as per 2003 census less than 100 in number) and Himalayan Monal (extinct locally in WB Himalaya)
12.06.2014	K.R. Singh, CCF, Odisha	Visited this breeding centre located in ideal habitat. The project is a milestone for future vistas in realm of conservation breeding of snow leopard and red panda in the country. Our best wishes to the project and staff associated with it.

**SATELLITE FACILITY, DOWHILL VISIT**

22.04.2014	Dr. Yogesh Bharadwaj, Vet. Officer, Nainital Zoo (Uttarakhand)	Today visited the Pheasantry and Herbivore section. No doubt the health status of all the animals is very good. We learnt a lot about the enrichment of the pheasantry and the practicality of breeding birds. The zoo staff is well versed with the breeding and has knowledge about the animals. The credit goes to all these staff.
19.05.2014	B.R. Sharma, M.S. WBZA	Visited Dowhill. Well created and maintained. Forester-in-charge has absorbed well the zoo functioning. Records are also well maintained. It will be a better idea to start the History Card with the laying of eggs- incubation- date of hatching. Very focused facility. Let us keep it this way only.



**Topkeydara visit of  
Mr. K.R. Singh,  
CCF, Odisha**



**Nainital Zoo Officials Visit**



**Field Visit of the SP**



**Field Visit of the CCF**



**Field Visit of Dr. Bikram  
Sarkar IAS (Retd),  
Kolkata**





**Field Visit of the Border Security Force**

**✚ A Report on the breeding of mealworms (*Tenebrio molitor*) and super worms (*Zophobus morio*) at Padmaja Naidu Himalayan Zoological Park: Mr. Aditya Mitra Research Scholar, Ms. Pranita Gupta Research Scholar, PNHZ Park.**

From 29.03.2014 to 05.04.2014 an official visit to Chamarajendra Zoological Garden was undertaken by me in order to study the behavior of the pheasants housed in the park. The tour included interaction with the zoo officials and behavioural observation of the pheasants. The Mysore Zoo has pioneered in providing live feed to the birds housed at their park since 2012 in order to enhance the nutritional need of the individuals and has been reported to observe a booming success in the breeding potential and birth rates of the pheasants. As a result, there was an official agreement between PNHZ Park and Mysore Zoo, where the Zoo officials agreed to provide us with a starter stock of Mealworms (Larvae of *Tenebrio molitor*) and Superworms (Larvae of *Zophobus morio*) in order to start the culture that would aim at maintaining nutritional needs of the pheasants at PNHZ Park. The park is planning to provide mealworms as a special supplement to fulfill the protein content in the captive feed provided. . These worms are live feeds for the pheasants housed at the park.

The insects are kept in different trays and hatched eggs by adult insects are kept separately to increase the production. It has been observed that the worms do not drink water as they absorb water from their food sources, which include wheat bran, sliced vegetables, including carrot, potato and some other vegetables that are provided to them every day. Hatched eggs by insects turn into larvae and when larvae become pupa, they are kept in separate boxes which changes into adult beetles. Both the species of beetles have similar life cycles with equal time span. They are also known to be sensitive to earth's magnetic field.

**Life Cycle of Mealworms and Superworms**

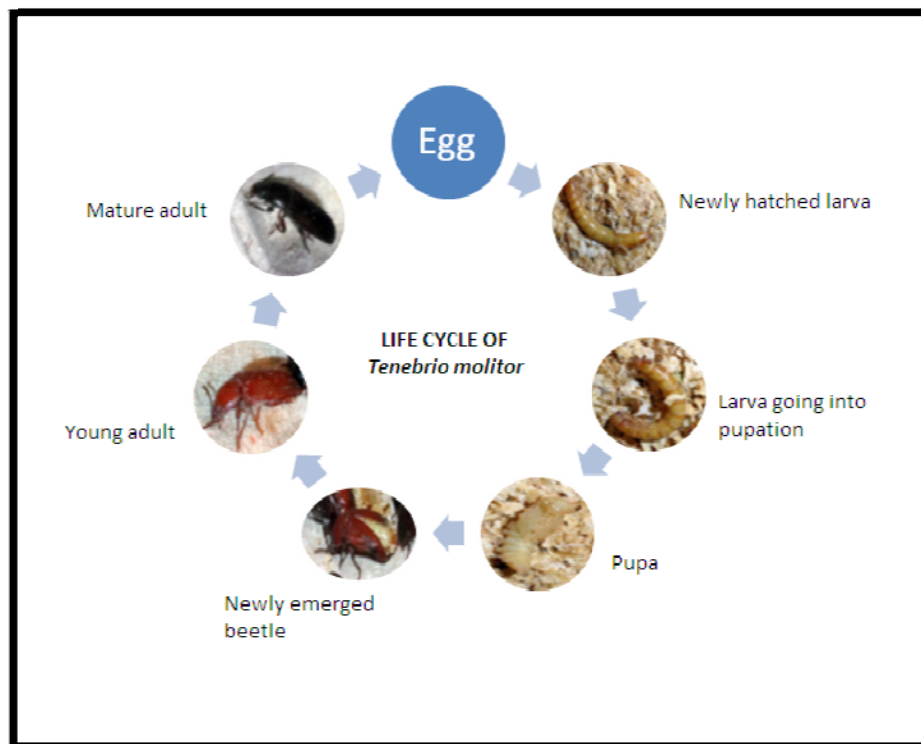
The beetles experience complete metamorphosis which means that they have four distinct stages of life. The four stages are egg, larva, pupa, and adult. The amount of time a beetle spends in each stage varies greatly due to environmental factors like temperature, humidity, food, and water.

- **Egg-** The first stage of life is spent as an egg. The white bean-shaped egg is tiny and about the size of a speck of dust. The egg is sticky and is quickly concealed by dirt, dust, and substrate. It took around two weeks for an egg to hatch and the larva to emerge.
- **Larva-** The second stage of life lasts for about eight weeks and was spent as a brown larva. This is the stage where the insect is a mealworm. When first hatched, it is quite small but grows to one to one and a half inches long. Since it has a hard exoskeleton, the worm needs to

molt and shed its hard outer shell in order to grow. Molts occur ten to twenty times during this stage of life. A recently molted worm is soft and white, but the exoskeleton quickly hardens. The larva spends its time eating and growing in order to save up energy for the next transformation.

- **Pupa-** During the larva's last molt it turns into a white alien-like pupa. It has no mouth or anus so does not eat. It does have leg and wing buds, but they do not function. The pupa is quite helpless and the only movement it can do is wiggle. This stage of life lasts for about two weeks as the pupa transforms its organs and body into an adult.
- **Adult-** The final stage of the insect's life is as the beetle and lasts about three months. The beetle is white with a soft exoskeleton. As the outer shell hardens, it turns brown and then black. The beetle does have hard wings, but it is unable to fly.

After about one to two weeks of adult life, beetles begin to mate and reproduce. A few days after mating, female beetles burrow into soil or substrate and lay eggs. The beetles are prolific breeders and females can lay hundreds of eggs during their adult lives.



### Methodologies Followed

- When the larvae were brought from Mysore Zoo, they had already undergone a few molts.
- The larvae of the two species were separated and kept in two different boxes, each having dimensions of 48.5cmX30cmX12cm and each containing wheat bran as a substrate for the worms. The boxes were covered with wire mesh.
- The worms survive best at temperatures from 25°C-35°C and the temperature of the room was maintained accordingly by providing artificial heating by means of heaters and blowers.

- Feed consisting of sliced potatoes and carrots were regularly provided to the worms and shelters in the form of egg cartons were also kept inside the boxes.
- The larvae underwent 4-5 molts, increasing in size with each molt and after about 3 weeks the larvae of *Tenebrio molitor* started to pupate. But the larvae of *Zophobus morio* failed to show any such signs.
- The pupae were then transferred to a separate box containing wheat bran as substrate.
- Each of the larvae of *Zophobus morio* was separated and kept in paper cups and were forced to undergo pupation.
- Within 3-4 days the larvae curled up into a “C” shape and after 2-3 weeks were finally observed to undergo pupation.
- After 12-14 days the pupa of both the species were finally observed to shed their exoskeleton and turn into adult beetles.
- Newly emerged beetles appear whitish in colour and within 1 day turned brown and finally changed into the black fully matured beetles within 2 days.
- These adult beetles were transferred in different boxes containing wheat bran and the feed and were left to mate under careful observation in order to obtain a future healthy progeny.



Management of Mealworms and Superworms at the Park

#### 🌍 Celebration of World Environment Day

The Park celebrated World Environment Day on 5th June 2014. The theme for this year was “Raise your Voice. Not the Sea level”. Different schools from Darjeeling were invited to participate in the program to promote awareness on the importance of trees and biodiversity and its impact on the environment and our lives in general. Sit and Draw competition was organized for the students from Grade I-III and Grade V-VIII. The topic for the sit and draw competition was “**My favorite wild animal**” and “**A tree saves many lives**” respectively. Ten school with a total of forty students participated.

The winner of the Sit and Draw competition were as follows:

#### Class I-III

1. Sachin Munda, Kanchenjunga Public School - 1<sup>st</sup> prize
2. Raj Kumar Rai, RKSP - 2<sup>nd</sup> prize
3. Aman Rai, St Michael’s School - 3<sup>rd</sup> prize

## Class V-VIII

1. Soyai Rai, St Roberts School - 1<sup>st</sup> prize
2. Dikshit Sharma, Gyanoday Niketan - 2<sup>nd</sup> prize
3. Rohit Rai, St Michaels School - 3<sup>rd</sup> prize

A day's workshop was organized where Shri R.P Saini IFS, Add PCCF (Special) and CCF Hill Circle was the Chief guest. The other forest officers who participated in the workshop were Dr. Basavaraj Holleyachi IFS, Divisional Forest Officer, Darjeeling Wildlife Division, Shri B.R. Sewa IFS, Divisional Forest Officer, Darjeeling Division, ADFO, Range Officers, Beat officers and other forest staffs from both the divisions. Students from schools of Darjeeling also participated in the workshop. Prior to beginning of the workshop the prize distribution ceremony for the two competitions was held. Shortly after the prize distribution ceremony the workshop began with a welcome address by Shri. A.K. Jha IFS, Director, PNHZ Park followed by presentations by Shri R.P Saini IFS, and Mr Bhupen Roka, Educational officer, PNHZP related to the theme. Dr Holeyachi and Mr. Saibal Sengupta delivered a lecture. A vote of thanks was proposed by Mr. Shiromani Syangden Estate Officer of the Park. Pamphlets and educational materials were distributed to the students.



**The Sit and Draw Competition followed by the Seminar**



**The Prize Distribution Ceremony**

**Winners of Class I-III**





1st

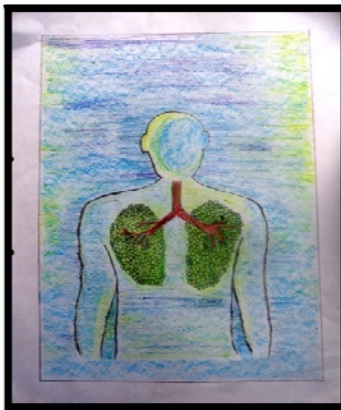


2nd



3rd

**Winners of Class V-VIII**



1st



2nd



3rd

**✚ Successful treatment of Red Panda at the Park**

A peculiar case was reported to the vet section by the zookeeper about male Red Panda (*Ailurus fulgens*) Shainee. The right testis of the animal was enlarged about ten times the normal size. Then accordingly after examination of the animal, treatment was given by Dr. Pankaj Kumar and the vet section, but suddenly on 17.05.2014, bleeding from the affected testis was reported by zookeepers. Then the animal was brought to the hospital and Dr. Pankaj Kumar and Dr. M. Maity (Guest Dr. from ARD) after consultation decided to operate the affected testis, which was then surgically removed along with the cell debris. This was followed by a month of antibiotic treatment and necessary medicines were administered. The animal is healthy at present and the wound is healing.

**✚ Adoption of Animals**

Dr. Sayantani Bhattcharjee of Kolkata has adopted one Blue and Gold Macaw. The park appreciates her effort towards conservation of Wildlife.

**✚ News from the Conservation Breeding Centre for Red Panda (*Ailurus fulgens*) and Snow Leopard (*Uncia uncia*).**

Since the inauguration of the Conservation Breeding Centre for Snow leopard and Red panda at Topkeydara with the shifting of a pair of Snow leopards, the Park has already taken initiatives to make the centre an efficient one. Following are the measures taken up.

- Shifting of more animals i.e. Snow leopard and Red Panda. The centre houses 1:3 snow leopard and 1:2 Red panda currently.
- Installation of Solar lights.
- Modification of two night shelters into the breeding den.
- Dehumidifiers used on the basis of the data obtained on humidity of Topkeydara.
- Behavioural observations conducted for baseline data on the behaviour of the individuals in the new facility.
- Enrichment model designed and implemented thereafter.
- Plantation work in progress.
- CCTV cameras installed for behavioural observation.
- Construction of staff quarters in progress.
- Record maintained for- Behaviour, feeding, treatment, visitors etc.



**The Staff Quarters under construction at Topkeydara**



**Breeding Den for Snow Leopards**



**De-Humidifier**



**Behavioural Monitoring**



**Plantations at Topkeydara**

## Zoo interns

Miss Namrata Pradhan and Miss Deena Gurung from , Loyola College, Chennai joined as Zoo intern on 01.05-2014 till 31-5-2014 and conducted research on “PARASITIC STUDY OF CAPTIVE ANIMALS- SNOW LEOPARDS ( *Uncia uncia*) AND RED PANDAS ( *Ailurus fulgens fulgens* )”. a behavioural study on “LESSER CARNIVORE MAMMALS ON DARJEELING ZOO” respectively. The Park provided them with all the necessary assistance required by them including a certificate and remuneration for their service to the Park. The report of the two research work shall be published in the park’s website **www. pnhzp.gov.in**

Mr. Vedavash Pradhan a Grade XI student of Mount Hermon School, Darjeeling joined the park as a Zoo Volunteer on 03.05.2014 and has been involved with the visitors survey work. Dr Nicola M Goodship from United Kingdom joined the Park on 20.05.2014 and is engaged in studying the faunal diversity of the Park.



**Miss Namrata Pradhan  
doing her Lab Work**



**Miss Deena Gurung  
doing her observation**



**Mr. Vedavash Pradhan  
doing his Survey**

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