

GUIDE TO THE ZOOLOGICAL GARDEN, *ALIPUR, CALCUTTA.*

The Zoological Garden, Alipur, was established in the year 1875 by the Government of Bengal in co-operation with the public. It was inaugurated by His Majesty the King-Emperor Edward VII, then Prince of Wales, on the 1st January 1876, and was opened to the public on the 1st of May of the same year.

The Government of Bengal granted a suitable piece of land for its site, about 33 acres in area and largely contributed to the funds required for the laying out of the Garden and for erecting buildings etc. It contributes also to a large extent to the maintenance of the establishment.

To the enterprising spirit and untiring energy of Mr. L. Schwendler supported by Sir Richard Temple, then Lt.-Governor of Bengal, the public are indebted for this beautiful and interesting Garden.

The objects of the Garden are:—

1. To provide recreation, instruction and amusement for all classes of the community.
2. To facilitate scientific observation of the habits of animals, more especially those peculiar to tropical climates.
3. To encourage the acclimatization, domestication and breeding of animals, and to improve the indigenous breed of cattle and farmstock.
4. To promote the Science of Zoology by the interchange, import and export of animals.

The Garden serves not only as a place for the exhibition of various kinds of animals, but it was also designed to provide a model of landscape gardening. It possesses extensive sheets of water, large shady trees, parterres of indigenous and exotic plants, diversified with ornamental structures etc.

The patrons of the Garden are His Majesty the King-Emperor and His Excellency the Viceroy and Governor-General of India. The President is His Honor the Lieutenant Governor of Bengal. The management is entrusted to by an Honorary Committee appointed by the Government of Bengal, and a paid staff of Officers and servants. The Committee consists of a President, Vice-President Secretary and members whose number is not limited but all of whom must be members of the Garden, with the exception, however, of a few *ex-officio* members. The paid staff consists at present of a resident Superintendent, an Assistant Superintendent, an Overseer, a Store-Clerk, a Gate Clerk and about a hundred keepers, gardeners and labourers.

The Garden is open from half an hour before sunrise to one hour after sunset. The charge for admission is a fee of one anna per head on all days except Sundays when from sunrise to 2 p. m. it is 4 annas, and from 2 p. m. till sunset, Re. 1.

Carriages:—One rupee plus the usual admission fee for each person in the carriage, except the coachman and syces.

Palanquins:—Eight annas plus the usual admission fee for each person in it. Children under 4 years are free on all days.

Family season tickets can be had on payment of Rs. 16 a year.

Life member's tickets can also be had on payment of Rs. 100 and Rs. 150 (Vide rules of the Garden).

Means of access to the Garden.

The Entrance gate of the Garden is situated on the Belvedere Road and may be approached by the following routes:—

1. The Belvedere Road,—for visitors coming from the Calcutta side either in carriages or on foot.
2. The Orphanunge Road—for visitors travelling by tram cars.
3. The Kalighat Bridge Road—for visitors coming from Kalighat. This route is largely used by the pilgrims to the temple at Kalighat.

On entering the Garden the visitor is recommended to follow the path to the left of the main drive, which will lead him to the Dumraon House devoted to apes and monkeys.

The Dumraon House

This splendid house was built in the year 1878 in honor of the Maharaja of Dumraon and extensively remodelled in the year 1906. It is well shaded by trees and is admirably suited during the summer for the monkeys coming from a comparatively colder climate. The two main buildings are connected by a central iron cage. Each building is divided into several compartments or cells built of iron bars and wire-netting, and each compartment or cell is so arranged that it enables all the inmates of the cells to be admitted by turns into the big outer cage for open-air and exercise. By providing these open-air cages mortality among monkeys from phthisis (a common and frequently fatal disease in the majority of European Monkey houses) has been considerably checked.

RHESUS MONKEYS.

(*Macacus rhesus*).

They are well-known in Lower Bengal and widely distributed all over India. They appear to vary much in colour, size, and thickness of the fur and even of the tail. The characteristic red colour of the face and callosities of the adult monkeys is partially or altogether wanting in many.

BURMESE PIGTAILED MONKEY.

Macacus leoninus.

The species is found in Arracan and Upper Burma and can be distinguished by its shorter limbs, short muzzle, long hair and black horse-shoe shaped crest on the forehead. It has a short tufted tail which it generally carries over its back.

MACAQUE MONKEY

(Macacus cynomolgus).

Resembles the Rhesus monkey in general appearance but its tail is much longer, about 19 inches; colour of the body is grey or greyish brown, face generally dusky, the eye-lids white. Found in Irrawadi Valley, Burmah, Malayan, Peninsula and Siam.

BROWN STUMP-TAILED MONKEY

(Macacus arctoides).

Stands about 2 feet high, thick-set in build, abundant long hair; hair of the crown slightly parted in middle and wavy at the shoulder; tail almost rudimentary; large area of the seat bare; face red. Found in Cochin China, Assam and Eastern Tibet.

LION-TAILED MONKEY OR WANDEROO MONKEY.

(Macacus silenus.)

A magnificent-looking, black-coloured, slender-built animal. Its chief features are its ruff of light-coloured hair on the chin, throat, cheeks and temples encircling the head, and tufted tail. In appearance it resembles a black-faced old man with shaggy whiskers and beards. It is commonly found in Cochin Travancore forest and West India.

BONNET MONKEY.

(Macacus sinicus)

A brown-coloured monkey, has no reddish tinge in the face or about the seat. Its distinguishing mark is the hair on the crown of its head radiating from the centre. Found in S. India.

WEEPER CAPUCHIN.

(Cebus capuchinus)

This animal has a peculiar low whistling cry. It also has a prehensile tail and becomes very tame in captivity. Found in Brazil.

On leaving the Dumraon House the visitors will find a little way to the south of it

The Crocodile Pool.

This was originally a snake-rockery, which although very popular at one time, lost its attraction since the erection of the more imposing "Reptile House". In 1917 the Snake-Pit was converted into a Crocodile Pool.

The existing members of the order Crocodila are found in tropical and sub-tropical regions, both in the new and the old world. Their groups are commonly recognised as:—

(1) Alligators; (2) Crocodiles; (3) Gharials.

The head of the crocodile is somewhat narrower and longer than that of the alligator; and the teeth are not so markedly unequal. The large first lower tooth bites into a pit but this is not the case with the large fourth lower tooth which merely bites into a groove and is partly visible when the mouth is shut. The united parts of the lower jaw are somewhat longer than in the alligator, the hind limbs have a jagged posterior fringe, and the feet are more completely webbed than those of the alligator.

THE GHARIAL

can be distinguished by its extremely slender snout and jaws armed with a larger number of comparatively small teeth, all fairly equal in size and arranged with greater regularity than in the alligator and the crocodile.

Alligators are found in America and China.

Crocodiles in America, Africa, South Asia and North Australia.

Gharials in India, in the Ganges, the Indus and the Brahmaputra.

Gharials are occasionally exhibited in this Garden but they do not appear to thrive very well in captivity.

Leaving the Crocodile Pool the next object which attracts the visitors' attention is

The Peafowl Pavilion.

In addition to the common Indian, Burmese, and white Peafowls, the pavilion contained a pair of the wellmarked variety described under the name of "Black-shouldered Peacock" (*Pavo nigripennis*). Birds belonging to this variety closely resemble the Hybrids between *Pavo cristatus* and *Pavo muticus*, but as has been clearly shown by Darwin the black-winged variety arises independently in flocks of *Pavo cristatus* which have been a pure breed for many years. There can be no doubt that it is merely a sport of nature. Opposite the visitor will find

The Porcupine Shed,

which contains the following species:—The Short-spined porcupine (*Hystrix longicauda*). The Indian Crested Porcupine (*Hystrix leucurus*). The Brush-tailed porcupine (*Atherura fasciculata*).

A few paces onward to the south, a foot path diverging from the main road leads the visitor to

The Lalgola House,

erected at the cost of Raja of Lalgola, Murshidabad is appropriated to the representatives of pouch-bearing animals or *Marsupials*. They are remarkable for bringing forth their young in an imperfectly developed state. After their birth the young Marsupials attach themselves to the teats of their mother, inside a pouch placed under the abdomen and remain to there until sufficiently grown to be able to shift for themselves. This method of reproduction may often be seen in the Kangaroos and wallabies which freely breed in the Garden. There are several varieties of the Kangaroo, all of which are natives of Australia and Tasmania and adjacent islands and all have the same general habits. The Kangaroos are peculiar looking animals having small rabbit-like heads with large soft ears, and strong hind quarters with a powerful massive tail. When they stand erect the weight of the body is supported by the hind legs and tail; the mode of progression is by leap. Kangaroos are purely herbivorous animals. Among the representatives of this family the following are generally exhibited here:—

- The Great Kangaroo. *Macropus giganteus*.
- “ Rufus Kangaroo. *Macropus rufus*.
- “ Rufus-necked Wallaby. *Macropus ruficollis*.
- “ Rat Kangaroo. *Potorous Kiductylus*.

Close by is a group of three old Bear houses which radiate from a common centre and are now inhabited by guinea pigs, and rabbits, and six-banded Armadillos (*Dasyus sexcinctus*). The Armadille is a South American animal not very interesting to the visitor as it remains quietly asleep almost the whole day. In the afternoon however it becomes very lively and excited, and runs up and down in the cage, just before the meal. The chief characteristic of this species is the presence of a hard bony covering which protects the upper surface of the head and body. If frightened, it can withdraw its limbs under the bony covering. It has powerful legs covered with bony scales enabling it to dig earth very rapidly.

At this corner of the Garden, begin

The Ruminant's Paddock,

which extend as far north as the Sambar enclosure near the Gubbay Houses.

The following species of ruminants may usually be seen:—

The Indian Gazelle (*Gazelli bonnetta*) found throughout India.

The Hog Deer (*Cervus porcinus*) which belongs to the same sub-region as the sambar and is distributed throughout India, Burma, and Ceylon.

The Barking Deer (*Cervus muntjac*) occurring throughout India, ascending the Himalayas to about 8000 feet and extending eastward through Burma to the Malayan Peninsula and Sumatra. The Nilgai or Blue Bull (*Boselaphus tragocamelus*). It is confined to India extending from the Himalayas as far down as South Mysore, being specially numerous in Central India. The sexes differ in colour. The Nilgai is very uncertain in temper, especially during the breeding season. Nilgai breed freely in the Garden.

The Barasingha or Swamp Deer (*Cervus duvaucelli*). The Indian name "Barasingha" is very characteristic of this deer, in that each antler of this animal has generally six well-developed tines. It is found in the swampy localities on the bank of the Indus, in the Terai, Orissa, Malda, and Assam. The adult male is a fierce animal when he has his horns, but after he sheds them he undergoes a complete change both in respect of his colour and temperament. His coats assume a beautiful reddish fawn colour and he becomes as mild and docile as a lamb.

The Mithan or Gyal (*Bos frontalis*). It is the semi-domesticated wild cattle of the Chittagong Hill tracts, Assam, Cachar etc. It is recorded as having been observed grazing with the Yak at considerable altitude in the Mishmi country. The wild form Gaur (*Bos gaurus*) has often been exhibited in the Garden; but unfortunately they do not bear captivity well. As much diversity of opinion still exists as to the identity of Gayal and Gaur it may be as well to quote what an experienced naturalist sportsman says on the subject—"I am forced to the conclusion that there is no difference of specific value between the two animals (*Gayal and Gaur*). Such differences as do exist being principally, not entirely, the result of domestication."

The Brow-antlered Deer or 'Thameng' (*Cervus melellandii*). It hails from Manipur and Burma and is closely allied to the Barasingha of India. Like the latter it is savage when it has its horns, and mild, after it has shed them. Thamings have frequently bred in the Garden.

On the right side of the road is

THE SONEBURSA ENCLOSURE,

so named after the Maharaja of Sonebursa, containing a number of interesting species of deer and antelopes, the most noticeable among them being—The Japanese deer (*Cervus sika*) from Japan. It is a handy animal and breeds freely in captivity.

The Black Buck or Indian Antelope (*Antelope cervicapra*). It is a most characteristic animal of the plains of India found from the foot of the Himalayas to the extreme south of the Peninsula with the exception of the Malabar coast the eastern Ghats; rare in Lower Bengal, most abundant in the North-west Provinces, Central India and the Deccan. The Four-horned antelope

Tetraceroe quadricornis). This is like the preceding species a characteristic species of the Indian fauna, but it does not occur anywhere in Lower Bengal or Assam. Among the other inmates of the Sonebursa enclosure are Emus (*Dromæus Nova-hollandæ*) from Australia which are next to Ostriches in size. The Llama:—There are four distinct recognised forms of Llama (1) Llama (*Lama glama*). (2) Huanaco *Lama huanacos*. (3) Vicuna (*Lama vicugna*). (4) Alpaca.

The Llama is a natives of South America. These curious animals are representatives of camels of the old world, very useful for wool and hide. They are rather of irritable temper, and when irritated they bite and kick and eject the contents of the stomach or spit.

The Land Tortoise (*Testudo elephantina*)—In this enclosure grazing with the deer, the visitors will find a few gigantic Land Tortoises about 4 feet in length, and about 2 feet in height, and probably over 100 years old. They are found in the Aldabra and Galpagos Islands, and are probably on the verge of extinction. They are herbivorous animals—having no teeth which are replaced by horny plates forming a strong cutting bill. When they are frightened they can withdraw the head and take shelter under their heavy shields.

Continuing his journey alongside the paddocks the visitor will find on the left another spacious paddock shaded by a grove of coconut trees occupied by the the Spotted Deer or Cheetul (*Cervus axis*). This well known species is distributed over Central and Southern India, and along the outer ranges of the Sub-Himalayan and Terai region; abundant in the Sunderbunds, but does not extend further east, nor is it found in the Punjab. The Spotted deer breeds very freely in the Garden.

The Wild Buffalo (*Bos bubalus*). This species is found in the plains of the Brāhmaputra and the Ganges, from Eastern Assam to Tirboot, the coast of Orissa and Midnapur, and the Central Provinces.

The Banting or the Sondaic Ox (*Bos sondaicus*). These beautiful bovines occur in their wild state in Burma, Malayan Peninsula, Sumatra and Borneo. A cow Banting is a very docile animal but the temper of the bull cannot be trusted. Bantings breed freely in the Garden.

On the other side of the lane is the large enclosure inhabited by the Sambar Deer (*Cervus aristotelis*) which is distributed over a greater part of India from the Himalayas to the extreme south of the Peninsula. It is a denizen of the deep forest.

The last enclosure of the range of paddocks has been allotted to pigs of which there are two species now living in the Garden.

The Wild Pig of India (*Sus cristatus*) which is closely allied to the wild boar of Europe, is found all over India, Burma, and the Tenasserim provinces, extending to the islands of the Malay Archipelago. The Andaman Pig (*Sus andamanensis*) which is supposed to be only a dwarf race of the wild Pig of India is found in the Andaman Islands.

Leaving the Pigs the visitor will find further on to the south.

The Rhinoceros enclosure.

Several varieties of the Rhinoceros have been exhibited in the Garden from time to time. The present occupant of the enclosure, "Cleopatra", is an Indian Rhinoceros (*Rhinoceros unicornis*) presented by Lord Curzon of Kedleston.

Rhinoceroses have three toes on each foot, and each toe terminates in a small hoof-like nail; their general form is heavy and large, and the legs short and stout; the dermal horns are situated above the snout and grow throughout the animal's life, and if lost are reproduced. They have two inguinal mammae.

The Indian Rhinoceros (*R. unicornis*). At present the Indian Rhinoceros is mostly confined to the great forests of the Dooars, to the east of the Teesta, Nepal Terai, and Assam. Formerly they had a wider range of distribution. The animal has one horn on the nose. It is a huge unwieldy creature, covered with a thick skin which lies in massive folds on the different parts of its body. It is herbivorous and inoffensive in the natural state unless provoked and appears to enjoy mud and ooze.

In the year 1889 a young hybrid (between *R. Lasiotis* and *R. sumatrensis*) was born and is the second recorded instance of the Rhinoceros bred in captivity.

Close to the Rhinoceros enclosure the visitor will occasionally find under the big tree a young Indian Elephant (*Elephant indicus*). The elephant is a well-known animal all over India and is found in the Terai range of the Himalayas, Assam, Cachar, Burma, Siám, Malayan Peninsula. The Indian elephant is much smaller and of better temper than the African variety, children are permitted to ride the elephant. Application for transact should be made on the entrance to the Garden.

Close by are the Cranes' Paddocks containing the following birds:—

The Cape-crowned Crane (*Balearica chrysoplargus*). This is a beautiful bird from South Africa. It has obtained its name from the tuft of velvety crested feather on the head, which looks like a glossy cap. The Balearic Crane (*Balearica pavonina*). Hab. West Africa.

The Stanley Crane (*Anthropoides paradisea*) Hab. South Africa, east to Mashonaland, west to great Namaqualand and Damaraland.

The Manchurian Crane, (*Grus viridirostris*). The Sarus Crane (*Grus antigone*). The Demoiselle Crane (*Grus Virgo*). The Asiatic Common Crane (*Grus leucogeranos*). The Common Crane (*Grus communis*).

From the south east corner of these enclosures a narrow path leads to

THE GUBBAY HOUSE

built to commemorate the name of Mr. Elias Gubbay and devoted to apes and monkeys is an oblong brick-built edifice measuring 50 feet long by 30 feet broad by 22 feet high with an arched roof. The doors and fan light

are all made of thick plate glass, so that while light and air are freely admitted, draught and cold can be effectually excluded, and the temperature regulated. The cages each measuring 7 feet 6 inches long by 5 feet 6 inches broad by 14 feet high, are fixed in separate blocks against the walls, an arrangement which although involving unnecessary waste of space, has been allowed to continue, as it does not interfere with the health and comforts of the inmates. It was remodelled in the year 1906-07.

The Orang-utan (*Simia satyrus*) from Borneo and Sumatra.

The manlike ape of Borneo and Sumatra differs much in appearance from the other members of the same group. The name orang-utan is derived from the Malayan word signifying "Man-of-the-Wood." An adult Orang has got reddish-hued hair all over the body, tall elevated forehead and a flat face with an oval contour. It stands about 4 feet 4 inches in height, has a pair of long arms which almost touch the ground when it is in an upright position. The legs are very short and thick, and they are twisted in such a manner that the knees are turned outwards and the feet consequently set very obliquely to the line of the leg. Owing to this peculiar structure of the legs and feet it walks on the outer side of its feet, the soles are turned inwards and almost face one another. This arrangement of the feet is admirably suited for climbing trees but ill suited for walking rapidly on the ground. There is a kind of collar round its neck formed of folds of skin containing an internal cavity communicating with the upper part of the wind pipe. The sloping and stooping shoulders and prominent abdomen greatly detract from the appearance of this animal.

The Orang in captivity is very affectionate and docile.

The Common Marmoset (*Hapale jacchus*). This is a beautiful little creature popularly known as the marmoset, many of which are smaller than the squirrel. Its distinguishing features are its long whitish grey hair on the side of the head which conceal the ears, a long bushy ringed tail, eyes large and nose flat.

Hab. Brazil.

The Lemur. There are several species of the lemur in the collection. The true lemurs are confined to Madagascar. Although nocturnal in habits in their wild state, they have, it appears, adapted themselves to their changed circumstances, and remain generally awake and lively during the day.

The Ring-tailed Lemur (*Lemur catta*) is easily recognised as it resembles a small fox. It is of an ashy grey colour darker on the back white on the under parts and its distinctive features are the alternate rings of black and white on the tail, from which it derives its name.

The Chacma Baboon (*Cynocephalus porcaricus*). This is a very powerful monkey. The distinctive feature of a chacma is its large dark colour muzzle, and the absence of tuft from the tail. The colour of its body is uniformly darkbrown mixed with a shade of light yellow or greyish black. It is found in all the mountain ranges of the Cape district of West and South Africa.

The Mandrill (*Cynocephalus mormon*), is a brute of tremendous power and ferocity. It resembles the other Baboons in general appearance, but its leading features are its peak-shaped crest on the crown of the head, and the swellings on the face ornamented with brilliant coloration in the adult state. that West Africa.

The Drill (*Cynocephalus leucophus*). The Drill resembles the Mandrill but lacks its brilliancy of colouring. The general colour of the fur is brown, and the bare part of the face is entirely black. It is found in West Africa.

Emerging from the Gubbay House by the east gate and crossing the road, the visitor will find the smaller duck house by the side of the Serpentine tank for the accommodation of the aquatic birds. This house is known as

The Old Boat House.

It contains the following birds:—

Flamingoes, Herons, Coots, Muscovy Ducks, Indian Snake Birds, Egrets, Adjutants and Storks. The Flamingoes (*Phœnicopterus antiquorum*) can at once be distinguished by their long neck and legs, and bent-down bill. They are found in shallow water and feed on small fish and inhabit Europe, North Africa, and greater part of Asia and India.

The Purple Coot (*Porphyrio Poliocephalus*) is a common bird found throughout India and Ceylon. The Water Coot (*Gallicrex cinereus*) looks like the purple Coot but its plumage is dull black instead of bluish, the male bird having a large red crest.

The Large White Egret (*Herodias alba*) is found throughout India and Ceylon.

The Murshidabad House.

Close by the "Old Boat House" is the Murshidabad House named in honour of its donor, H. H. the Nawab Bahadur of Murshidabad. It has undergone thorough renovation in the last four or five years. Several valuable birds are kept here, viz:—

"The Birds of Paradise."

These magnificent birds are near allies of the crow. There are nearly 50 species of Birds of Paradise of which 18 are well-known.

Most of these birds are confined to the wooded hills of the Malay Archipelago, New Guinea, and the adjacent Papuan Islands and one genus is found in the Malaccas, while three genera extend to the North Australia.

The adult male birds of all the species are characterised by an extraordinary development of plumage quite unparalleled in any other group of birds; but the females are generally plain and ordinary-looking birds most of them being of a uniform chocolate colour.

The Birds of Paradise through exquisite beauty of form and color, and strange development of plumage have always excited the wonder and admiration of the most civilized and intellectual section of mankind and furnished to the philosopher inexhaustible materials for the speculative study of nature.

The collection contains the following specimens:—

The Greater Bird of Paradise (*Paradisea apoda*)

The Lesser Bird of Paradise (*Paradisea minor*)

The Red Bird of Paradise (*Uranornis rubra*)

The Twelve-wired Bird of Paradise (*Seleucidis niger*.)

The Rifle-bird. (*Ptilorhis paradisea*)

The Doves and Pigeons are placed in three different houses viz:—Murshidabad House, Sarnomoyi House and the Jheend house.

The Doves and Pigeons belong to a very large family, Columbidae. Over 500 known species are found all over the world but the most numerous amongst them are those inhabiting Australia and the Oceanic region; many live in America but not of very varied forms, a few in Europe and temperate Asia. They abound also in India.

All pigeons are monogamous in their habits; and the pair show considerable devotion to each other; both sexes assist in making the nest, incubating the eggs, and feeding the young. They do not generally lay more than two eggs at a time.

The following varieties are interspersed things the various houses:—

The Indian Blue Rock—Pigeon (*Columba intermedia*)

The spotted dove (*Turtur suratensis*)

The Common Ring Dove (*Turtur risorius*)

The Crested Pigeon (*Ocyphaps lophotes*)

The Bronze-winged Pigeon (*Phaps chalcoptera*)

The Wonga Wonga Pigeon (*Leucosarcis picta*)

The Blood-breasted Pigeon (*Phlogænas cruentata*)

The Imperial Green Pigeon (*Carpophaga ænea*)

The Bengal Green Pigeon (*Crocopus phænicopterus*)

The Orange-breasted Green Pigeon (*Osmotreron bicincta*)

The Kokla Green Pigeon (*Sphenocercus sphenurus*)

The Nicobar Pigeon (*Calenas nicobarica*)

Coming out by the Western gate, the visitor will find on his left in the middle of the road a monument in memory of Mr. L. Schwendler who, for many years, was intimately connected with the Garden. A little further up, on the right hand side is

The Sarnomyi House.

This house has been erected at the cost of Maharaja Manindra Chandra Nandy, the nephew and successor of the late Maharani Sarnomyi of Cossimbazar.

The house was extended in three sides of the main building are three lofty wirenetting aviaries (the Eastern aviary, the Western aviary, and the Central aviary) which contain bushes and trees and afford practically a natural home for the birds for which they are intended. The birds live without any restraint, with ample opportunities for exercise, and some of them freely breed here. The following are the most important and prominent inmates of this house:—

Parrot (Order Psittaci.)

Parrots form a large group of about 500 species which present well-marked characters. Their most obvious external characters are displayed by their feet and bills. In the feet the first and the fourth toes are permanently turned backwards while the second and third forward. The whole foot is divided into two digits, "*Zygodactylous*"; bill, very short, strongly hooked with acute at the base. Tongue thick and fleshy.

Parrots are found all round the world, chiefly in warm climates especially in tropical America whence come the Macaws (*Ara*) and Amazons (*Chrystis*), and in the Australian regions where Lories (*Lorlinæ*) and the crested Cockatoos (*Cacatænæ*) are found. A few species are found in temperate climates in New Zealand, North America and South America.

For the most part parrots are thoroughly arboreal and climbing birds and are essentially characteristic of the tropical and sub-tropical regions of the globe.

All parrots make their nests in the hollows of trees, and usually lay two or more white eggs. These birds are very intelligent and usually of gorgeous plumage.

The following species will be found:—

Cockatoos.

The Rose-crested Cockatoo (*Cacatua moluccensis*).

The Great Sulphur-crested Cockatoo (*Cacatua galerita*)

The Great White-crested Cockatoo (*Cacatua cristata*)

The Roseate Cockatoo (*Cacatua roseicapilla*)

The Bare-eyed Cockatoo (*Cacatua gymnopsis*)

The Great Black Cockatoo (*Microglossa aterrima*)

All of them came from Australian region and Philippine and Sulu Islands. All of them have got erect crests on the head.

Family Palæornithidæ.

(Parrakeets and Lories).

The Red-cheeked Parrakeet (*Palæornis erythrogegens*)

The Red-breasted Parrakeet (*Palæornis fasciatus*)

The Blue-winged Parrakeet (*Palæornis columboides*)

The Malayan Parrakeet (*Palæornis longicauda*)

The Red-winged Parrakeet (*Aprosmictus erythropterus*)

The Ring-necked Parrakeet (*Palæornis torquatus*)

(Very abundant in India)

The Indian Lorikeet (*Loriculus vernalis*)

The Undulated Grass Parrakeet (*Melopsittacus undulatus*)

The Rose-faced Love bird (*Agapornis roseicollis*)

The Purple-capped Lory (*Lorius domicella*)

The Chattering Lory (*Lorius garrulus*)

The Blue Breasted Lory (*Eos reticulata*)

Family Psittacidæ.

(Macaws)

The Greater Vasa Parrot (*Coracopsis vasa*)

The Grey Parrot (*Psittacus erythacus*)

The Blue and Yellow Macaw (*Ara ararauna*)

The Red and Yellow Macaw (*Ara chloroptera*)

The Hyacinthine Macaw (*Ara hyacinthina*)

The Eastern Aviary.

The Victoria Crowned Pigeons (*Goura victoria*)

Common Crowned Pigeons (*Goura coronata*)

These birds are found in New Guinea and the adjacent islands. They freely breed in the garden.

The Central Aviary

(Hornbills.)

This group of birds can be distinguished at first sight by the enormous size of their bills which are further, in most of the species, increased by a casque or protuberance placed at the base of the bill on the culmen. Eyes are protected by strong eye lashes (modified feather). Plumage—plain but showing a strong contrast—black and white, and the presence of the eye lashes give them a striking appearance.

Hornbills are a well-marked family (*Gucerotidæ*) found nearly throughout the Ethiopian and Oriental regions and occurring also in the Papuan sub-region. They are especially remarkable for their nidification—a hole in a tree is selected, and there the female, usually with the aid of the male, encloses herself and shuts up the orifice by means of mud and her own droppings with the exception of a narrow vertical slit for ingress of fresh air and food. She is thus enclosed before she begins to lay and apparently remains in the hole till the young are fledged, being fed all the time by the male through the slit left in the enclosing wall.

There are about 65 species of the tree hornbills.

The *Bucerotidæ* are found in Africa, south of the Sahara and in the south east Asia to New Guinea in wooded country. The Ground Hornbill (*Bucorvinæ*) are confined to Africa.

Among the tree Hornbills the most familiar in India is the Grey Hornbill (*Ocyros birostris*.)

The Rhinoceros Hornbills (*Buceros rhinoceros*) are found in Malayan Peninsula, Sumatra, and Borneo. The Indo-Burmese Hornbill (*Anthracoceros albirostris*) is found in India, Burmah and the Malayan Peninsula and Borneo.

THE WREATHED HORNBILL.

(*Rhytidoceros undulatus*.)

Hab.—In the hill ranges of Sylhet, Cachar and extends through the Malayan Peninsula to Sumatra and Java.

THE WRINKLED BILL HORNBILL

(*Cranorrhinus corrugatus*.)

From Malacca, Sumatra and Borneo.

THE WESTERN AVIARY

In this aviary are exhibited several hundreds of small birds, such as Finches, Muniahs, Java sparrows, Robins, and Bulbuls. They enjoy the ripe fruits of various trees (*Papaya*, *plantain*) planted in the aviary, and feed on the seeds of grasses.

They breed here freely and in the breeding season it is very interesting to observe them building their nests.

Leaving the Sarnomoyi House and crossing the main road the visitor will find

The Jotindra Mohan Tagore's Library.

(Not open to the Public).

For this house the Garden authorities are indebted to the late Maharaja Sir Jotindra Mohan Tagore, K.C.I.E., of Calcutta, who, during his life time, was a constant supporter of the garden, and was a recognised leader of Bengal aristocracy. Passing the Library Room the visitor will come to

The Mullick House

named after Raja Rajendra Nath Mullick of Chorebagan, Calcutta, an enthusiastic animal fancier of his time, who maintained his own private menagerie long before the "Zoo" came into existence. It is a round brick-built structure with six radiating outer wire-netting cages, each having a small fresh water tank, in which the otters always be seen. Amongst others the following are the chief inmates of this house:—

THE CAT BEAR OR PANDA.

(*Ælurus fulgens*)

This is a beautiful animal about the size of a cat. Legs-short and stout, tail long and bushy, colour yellowish, fur of abdomen and legs generally darker, face and lower lip white. It inhabits the south-eastern Himalayas at about the elevation of 7000 to 8000 feet; Nepal and Assam.

THE COMMON OTTER.

(*Lutra vulgaris*.)

is common in Bengal and is found all over the world. The European otters are larger than the Asiatic varieties. Otters are very playful and active. They overtake fishes in water and bring their prey ashore to eat them.

THE CLAWLESS OTTER.

(*Lutra leptonyx*)

In this variety the claws are extremely small and rudimentary, and the great toes on all the feet are considerably larger than the other; found in greater parts of the oriental region.

The Coypu Rat.

(*Myopotamus coypu.*)

It is a large rodent of South America generally found near rivers and lakes. It delights in water and can swim well.

THE CRAB-EATING MUNGOOSE.

(*Herpestes urva.*)

The Common Indian Mongoose (*Herpestes Mungo*) to be found throughout India; very clever, intelligent easily tamed and is an expert snake-killer. It is very fond of eggs and destroys large number of reptile's eggs, hence it is very useful and requires protection. It is carnivorous in habits, and is found in Africa and Asia.

Little further up from the Mullick House is

The Durga Charan Law's Laboratory

(*Not open to the Public.*)

This building owes its origin to the munificence of the late Maharaja Durga Charan Law of Calcutta, who, during the infancy of this institution, and when it was struggling hard for its existence, helped it not only by contribution towards its funds, but also by his sound advice. In fact, he was one of the oldest counsellors of the Managing Committee of the Garden.

A few spaces northward of the Laboratory and just on the main road is

The Reptile House.

The first attempt at keeping Reptiles in captivity under such conditions as might render it possible to observe their habits was made in 1878 when a Pit (to which allusion has been made already) containing a rockery it was built. This Snake-Pit having proved inadequate for the purpose the present imposing house was erected and opened in 1892, for the better display of the collection.

On entering the house the visitor will observe on his left a plate glass tank filled with salt water, for the display of sea snakes. There is a series of large fixed glass cases, which occupy the three sides of the interior, and contain representatives of the various species of both poisonous and non-poisonous snakes. On the eastern side of the house will also be seen a number of smaller glass cases appropriated to smaller snakes and lizards. In the centre of the house there are two ornamental basins, which are fed by clean pipe water, and were for many years devoted to the crocodiles and alligators but are now tenanted by the water lizards, turtles and tortoises.

The following specimens are to be found in this House :—

The Python or Rock Snake (*Python molurus*).

The Reticulated Python (*P. reticulatus*) from Malaya.

Pythons are non-poisonous snakes. They are of great size and strength seizing and killing their prey instantaneously and painlessly. In captivity, they are very fond of water and are generally fed with freshly killed ducks and rabbits.

The Cobra (*Naja tripudians*) It is a well-known snake of India. Although in appearance very fine-looking it is deadly poisonous and of a very irritable temper. Before using its deadly fangs it stands erect with hood expanded on which the characteristic marks, popularly believed by the Hindus to have been impressed by the feet of Vishnu is visible.

The Hamadryad or Snake-eating Cobra (*Naja Gungarus*). This magnificent creature attains a to a considerable size. When provoked it stands 2 to 3 feet high and expands its hood. The Indian Snake-charmers are very loathe to handle these snakes which as their name indicates are cannibal in their habits.

The Russel's Viper (*Daboia russellii*) is a deadly poisonous snake and may be ranked next to the Cobra. Its peculiarity is that instead of laying eggs, as other snakes do, it hatches them within the body, and the young ones come out in an active state.

The Banded Krait (*Gungarus fasciatus*) is a very common snake of India. It is a beautiful-looking snake with black and yellow stripes completely encircling the body and the tail. It is very poisonous but as its fangs are much smaller than those of the Cobra and the Viper, its bite is not always so fatal and affective as theirs.

There are no sure methods of distinguishing the poisonous snakes by mere external appearance or character, without a thorough knowledge of their various forms. It will be found that certain members of the Viper family are poisonous while the other members are non-poisonous. Almost all the harmless snakes have six rows of teeth-four in the upper and two in the lower jaw. In some snakes all the teeth are equal (in others they are irregular) and are directed backwards, thus affording a formidable obstacle to any resistance on the part of the prey when once seized.

MOUTH AND TEETH OF THE POISONOUS SNAKES.

There are two slightly curved fangs on each side of the upper jaw, (some times one or two rudimentary teeth may be found behind the fangs) and the fangs contain a perfect canal for the conveyance of the poison to the bitten tissue. The fangs are erected and enveloped in a fold of mucous membrane and occupy the same place as the canine or cutting teeth of dogs and other carnivora. They possess only four rows of teeth, two in the upper jaw and two in the lower jaw, and are provided with poison glands which are ultra developments of the salivary gland, these being provided with the muscles necessary to force the secretion of the gland into the fangs when the snake bites.

Reptiles are commonly known as "Cold-blooded" creatures. They are not provided with heat protective arrangements, like skin fat, fur or feathers as in the case of warm-blooded animals. Nor have reptiles a highly organised respiratory and circulating system; consequently the temperature of the body rises and falls and comes to the same level as the surrounding air or water.

The majority of snakes lay eggs oblong in form enclosed in soft leathery sheath which are hatched by natural heat but pythons incubate their eggs. On the other hand in case of both fresh and sea water snakes the eggs are retained within the body of the mother until they are hatched, and the young ones come out in an active state. Snakes have no eyelids but the eyes are covered with a transparent disc which peels off when the snake changes its skin.

Emerging from the Reptile house the visitor should follow the path to the back and on the right of the building which leads to

The Antelope House.

Before the erection of this house, such valuable animals as the Saemmerings and Beisa antelopes hailing from the dry climates of Egypt and Abyssinia, the ordinary Indian antelopes inhabiting the high and dry table-land of North Western India were exposed to conditions very unfavourable to their well-being and consequently the death-rate amongst them was very high. The authorities of the Garden were fully conscious of the draw-backs in their institution, but the want of space and requisite funds hampered them as regards making the necessary improvement in this direction. At last, in the year 1904, the Government of Lord Curzon gave them both and they have erected the present building.

In a Zoological Garden it is essential to follow, as far as circumstances permit, the accepted dictum that the more the conditions the animals live under approximate to those of their natural habits, the better the prospect of their escaping disease. This elevated house, which is divided into six stalls, and the spacious lawn behind it, where the animals can take their open air exercise by turn is well adapted for the accommodation of such antelopes as come from regions drier than Lower Bengal. Some of the rarest varieties of this species are exhibited here, viz. :—

The Anoa (*Anoa depressicornis*)

closely resembles a young buffalo and has short thick prismatic horns which are directed upwards. It is a native of the Celebes and is a very hardy animal and breeds freely in the Garden.

The Beatrix Antelope (*Oryx leucorox*)

is a beautiful black and white antelope from Arabia.

The White-tailed Gnu (*Connochates gnu*)

is a very shy, active, and powerful animal. It has a heavy head with peculiarly bent horns, has long hair on the face. Mane and tail are like those of the horse. This animal comes from South Africa.

The Duiker (*Cephalophus grimmi*) comes from Africa.

The Four-horned antelope (*Tetraceros quadricornis*)

is found through out India, but not in Lower Bengal, very docile in captivity.

The Markhor (*Capra megaceros*.)

Does not stand this climate but has been occasionally exhibited in the Garden.

After leaving the Antelope House the visitor has to retrace his steps and return by the same path to the main drive. To the North he will find—

The Small Carnivora House

This building, was constructed in the year 1898, with view a to accommodate some of the rare and delicate felines. The following animals are exhibited in this house;—

The Leopard (*Felis pardus*) or Panther is a well-known animal of Bengal and occupies the third place in size in the cat family of the old world.

The Black Leopard is only a variety and not a distinct species. The black colour is deeper in some and lighter in others. The black leopards have the reputation of greater ferocity than their paler brethren. Leopards are found in South Asia, India generally, and some parts of Africa.

The Clouded Leopard (*Felis nebulosa*.) It is a beautiful-looking animal, smaller than the leopard. The characteristic features of this animal are its colour and marks. Colour earthy brown, lower part and inside the body whitish, markings of the body, irregular. The head and the limbs spotted. Sides, elongated, having narrow pale-coloured patches on the body, tail, ringed with black mark. Found—South-Eastern Himalayas, Assam and Malayan Peninsula.

The Striped Hyæna (*Hyaena striata*) is a well-known animal of Lower Bengal, found throughout India, unknown in Ceylon and also found in Northern Africa.

The Indian Wolf (*Canis pallipes*). When they are in packs, their ferocity is well-known. They are very common in the Indian peninsula, Behar and Western Bengal.

The Fishing Cat (*Felis viverrina*) Larger than the ordinary domestic cat. It derives its name from its peculiar habit of catching fish and living on it to a great extent. Found in India and Indo-China.

The Jackal (*Canis aureus*). In the collection there are got several varieties of Jackals. They are well-known animals of Bengal. The white Jackal (Albino) the Black Jackal (deeply pigmented) are freaks of nature. Jackals are found throughout India, Ceylon, Burma, South-eastern Europe and North Africa.

The Dingo (*Canis dingo*) resembles the pariah dog of India. Found in wild state in Australia".

Fennec Fox (*Canis cerdo*) is a lovely little animal of North Africa, the smallest of all the fox tribe. It is about 15 inches long and has got very big ears and prominent eyes.

The Lynx (*Felis lynx*) is a heavily-built cat and is an inhabitant of cold climate. Found in Upper Indus Valley, Ladak, Tibet, north of the Himalayas and north of the Alps.

The Side-striped Jackal (*Canis lateralis*).

The visitor should now turn to the left and examine the three houses, next in order viz the Smaller Antelope house, the Ostrich house and the Birds of Prey Aviary.

Smaller Antelope house.

Indian Antelope (*Antelope cervicapra*)

Found throughout India, with the exception of Malabar coast, Eastern Ghats and Lower Bengal. Urial (*Ovis vignei*) It is an Asiatic wild sheep known in the Punjab as Urial and at Ladak "Sha"

Ostrich house.

The Ostrich (*Struthio camelus*)

Ostriches are two-toed birds of gigantic size and are incapable of flying. They have got small bare heads, depressed bill, a long neck and extremely muscular thighs. A good sized bird stands about 7 feet in height. Young birds of both sexes resemble each other. The females at first have a mottled dark brown plumage with yellowish white quills and tail feathers. The color in adult male birds changes into black and pure white respectively, whereas the females become uniformly dark grey. Found in the open sandy tracts of Africa, Arabia.

Rhea—(*Rhea Americana*)

Cassowary—(*Casuarius galeatus*)

Emu—(*Dromaeus-novae-hollandae*)

The Birds of Prey Aviary.

Black vulture (*Cathartes atratus*) from America.

Cinereous vulture (*Vulture monachus*)

Long billed vulture (*Hyps indicus*) found in India.

Lammergeier (*Hypaetus barbatus*) It is a link between eagles and vultures. It is a magnificent bearded bird, and is found in the mountainous regions of South Europe, North Africa, West and Central Asia and common in the Himalayas.

Crested Hawk-Eagle (*Spizætus cirrhatus*) found throughout India ascending the Himalayas up to 7000 feet.

The Pallas's Sea-Eagle (*Haliæetus leucoryphus*) Common in Bengal and North Western India.

The Indian Barn Owl (*Strix javanica*) Found all over India and Ceylon.

The Brown Fish Owl. (*Ketupa ceylonensis*), Found all over India, Burma and Ceylon.

The Brahminy Kite (*Haliaster Indus*) Found throughout India.

The Black-winged Kite. (*Elanus œeruleus*). Found throughout India and greater part of Africa. Following the main drive the visitor will next come to a small solitary house for Indian wild dogs.

The Indian Wild Dog (*Cyon dukhuensis*). In appearance it looks like a jackal but not so compact is found in the Himalayas, Assam forest and western Bengal. It has a peculiar smell, which is perceptible from a long distance.

Next is the

New Bear house.

For this house the Committee of management of this Garden are indebted to the present Nawab Bahadur of Dacca. It affords excellent accommodation for bears. Each pair has two rooms allotted to them, one outer and the other, the inner or the retiring den. The inner den is provided with a water tank, in which they bathe especially in the hot weather. This house shelters a number of Himalayan bears (*Urus torquatus*), Malayan bears (*Urus malayanus*), Sloth bears (*Melursus ursinus*). In another part of the Garden there is a large Brown bear.

The Himalayan Bear (*Urus torquatus*) is found throughout the forest ranges of the Himalayas, Afganistan, Beluchistan, Eastern Assam and Burma.

The Sloth Bear is found in the hill and jungly forests of India. It is a well known animal of India and Ceylon, It can be recognised by its protrusible lips, white muzzle, white claw and very long shaggy black hair.

All bears have the same general habits and are fond of feeding on berries, fruit-roots, grubs, insects. They are exceedingly good climbers and take great trouble to climb trees in search of honey.

Next we come to the

Cooch Behar house.

The old shed which used to contain smaller carnivorous animals was demolished and replaced by this new shed of a more substantial and durable character which now accommodated by the following animals:—

The Leopard Cat:—This is a pretty little cat and varies a good deal in different individuals in size and shade of colour. It is commonly found in the Himalayas, Lower Bengal, Assam, Burma, Malayan Peninsula and Western part of India.

The Civet (*Genus viverra*) is well known in India. It has got a characteristic odour, due to some glands on the skin and perineum, which secrete an oily substance from which the well-known perfume is prepared, which gives the name to the group. There are generally six species of true civets. Five being Asiatic and the one is African. They are nocturnal in habits and are solitary animals.

The Bear Cat or Binturong. This resembles both a civet and a bear in general appearance. It is of a greyish black colour with a shaggy coat with numerous whiskers. Found in Assam, Arracan and Malayan Peninsula.

The Hog Badger. This resembles a pig. The prevailing colour of the body is grey and the head white. It is generally found in Nepal, Assam and Pegu. By retracing his foot steps to the main road and turning to the right the visitor will find

The Buckland Enclosure.

This enclosure was built to commemorate the name of Mr. C. T. Buckland I. C. S. who was the president of Garden for many years and contributed largely to its welfare at the time of its infancy. This enclosure originally built for the Rhinoceros, is now inhabited by a young Hippopotamus (*Hippopotamus amphibius*.)

Hippopotamus (*Hippopotamus amphibius*): It is believed that in the Pliocene and the Pleistocene ages several species were found in India. It is a large thick-skinned animal like the other ungulata. It has a very big head with a gigantic mouth. The eyes, ears, nostrils, are situated rather towards the top and at the same level so that when floating in water it can see hear and breathe without exposing the body. It is entirely herbivorous.

The Tapir Enclosure.

The next enclosure on the right hand side contains a very pretty sight—a pair of Malayan Tapir (*Tapirus indicus*) and their striped baby making a very picturesque family group when standing up together. Externally the tapir much resembles a pig but anatomically it is related to the Rhinoceros on the one hand and to the horse on the other. It is rather shy and very mild in temper. It is a herbivorous animal and is very fond of water. From here the visitor will be able to view the big lake where a large number of aquatic birds are exhibited. About 5 years ago it was enclosed with were-netting for the reception of these species. It is a real paradise to them, as they live here without any restraint, as if they are in their natural habitat. Here in the morning, the Brahminy ducks (the chakrabak of the Indian classical writers), may be seen by scores, prunning their feathers, or basking in the sun while the swans and geese are yet enjoying their early bath. Saras cranes may often be seen dancing with ludicrous gyrations, showing their vanity or love of demonstration. Besides the swans, geese, and cranes on land and water,

the trees of the enclosure, especially on the island have their occupants. Hundreds of night herons resort to them for nesting purposes. Besides the herons, the egrets, storks, Indian Snake-birds etc also live here and some of them breed freely here.

Walking round the flower bed the visitor will come to the

Ezra house.

Built by the late Mr. David Ezra for the accommodation of the splendid pair of Giraffes which he presented to the Garden in 1877. It is now tenanted by a pair of Zebras, 3 wild Asses, 1 Kiang.. The Zebra is a well-marked and a remarkably docile animal.

Zebra (*Equus burchelli*). There are several varieties of Zebras The mountain Zebras (*Equus Zebra*) Burchell's Zebras (*E. Burchelli*) Grant's Zebras (*E. Granti*) Chapman's Zebras (*E. Chapmani*) and Grevy's Zebras (*E. Grevyi*).

In collection there is only a pair of Burchell's Zebra. They are beautiful creatures, standing about 4 feet high, robust thick animals mane and tail full, the general colour of the body pale yellow and the stripes are brownish black and there are fainter and narrower stripes in the interspace between the broad stripes. These are natives of south Africa.

Wild Ass (*Equus onager*). Found in the Punjab, Sindh, Cutch, Rajputna and in Afganistan, and Beluchistan to Persia.

The Kiang or wild horse (*E. Kiang*) is larger than the wild ass; found in the plains of Tibet.

On turning to the east from the Ezra House the visitor will at once see at the end of the straight road a semi-circular brick building. It is the most important and attractive house in the Garden known as the

Burdwan house

for the accommodation of the larger carnivorous animals. It was built at the expense of the Burdwan Raj Estate. It is 250 feet long 32 foot wide and divided into 11 double chamber dens-outer or exhibiting, inner or retiring dens. Each den communicates with the other and the sliding doors are worked from the top. It is a most up-to-date house with a broad verandah which runs along the southern front of the house. The floor of the house is 3 feet in height and was recently fitted with wooden platforms. But the most conspicuous improvement which has lately been carried out in this house is a new open air enclosure at the back of it the cost of which was met from the fund provided by the late Maharaja Bahadur Surya Kanta Acharya Chowdhury of Mymensing.

The house contains some very interesting selections of large carnivorous animals, foremost among them being a pair of docile and good-tempered lions belonging to the celebrated Kordofan race which attains to larger size than most

racers of African lions. Besides this pair, there are two other pairs of lions from Africa, a pair of lively and amusing lion cubs born in the Garden and the ferocious and man eating tigress (man-eater) from the Gaya District in Bengal.

The animals are fed at 5 p.m. every day and it is a sight to see their feeding and the eagerness, when the food is thrown to them. The behaviour of even the tamest among them seems to change for the moment on the scent of flesh and their excitement and impatience reach a climax when the buckets containing the food are placed near the den preparatory to distribution; they may be seen clawing at the bars, and leaping upwards in their excitement.

The Lion (*Felis leo*) It is a most magnificent and far more striking in appearance, of the whole of the cat tribe and indeed of all the carnivora animals. Its most striking feature is its splendid mane decorating the head and chest of the male, its well-shaped body and its tufted tail. The lions vary a great deal in colour and size. The lion is a true cat; it has retractile claws and the circular aperture for the pupil of the eyes. Lions are found in Africa, South-west Asia. Indian Lions are now only found in the Gir forest in Kattiwar. Lions stand captivity well and since last year they have been breeding freely in the Garden.

The Tiger (*Felis tigris*) It is also a true cat, and entirely an Asiatic animal, the largest of the living cat family. It is the most powerful and the strongest of all the carnivora animals. It is distributed throughout India, Burma, Malayan Peninsula, South Eastern Asia, Java, Sumatra, throughout China, Northern Persia into Turkistan, Central Asia and Southern Siberia. They are subjected to great variation in form and colour. They breed freely in the Garden.

The Jaguar (*Felis onca*.) It is a South American animal. It clearly resembles the Leopard and is a perfectly arboreal animal.

On the east side of the Burdwan house is the Old Mandrill House. The present inmates of this house are a beautiful full-grown Mandrill and an Anubis Baboon. By following the same path a few yards towards the south the visitor will find a solitary house for the Brown bear.

The Brown Bear (*Ursus arctos*). The Brown bear is commonly found in North and Central Asia extending all over Europe.

Coming down from the Bear house and following the path leading to the east and crossing the Serpentine Lake by the ornamental iron bridge the visitor will find an ornamental round house known as the Jhind house which has been devoted to the several kinds of seed-eating birds, such as, Pheasants, doves, pigeons, cardinals, and grass-parakeets. Past the Jheend house in front of the undulated lawn the road bifurcates. Taking the left side road the visitor will come to one of the most delightful places in the garden—

The Duck Pond.

It is a large-wire-netting aviary with its large and high covered enclosure, which was enlarged and improved a few years ago with funds provided by the

Raja of Pošta in Calcutta. The birds are evidently quite at home here, as several of them, including the Scarlet Ibis from Brazil, breed every year. There is always a specimen or two of the rare Pink-headed duck which, though an Indian species, is never seen in large numbers. No visitor can miss the Stone-plover, which, with unfailing regularity follows the footsteps of every passer by in hope of food or notice. The following birds are generally housed here :—

- The Flamingo (*Phœnicopterus antiquornm.*)
- „ Black Ibis (*Inocotis papillosus.*)
- „ Glossy Ibis (*Plegadis falcinellus.*)
- „ Scarlet Ibis (*Eudocimus ruber.*)
- „ Common Heron (*Ardea cinerea.*)
- „ Large white Egret (*Harodias alba.*)
- „ Chestnut Bitterns. (*Ardetta cinnamomea.*)
- „ Cotton Teal. (*Nettapus coromandelianus.*)
- „ Comb duck. (*Sarcidiornis melanonota.*)
- „ Brahminy duck. (*Tadorna cascara.*)
- „ Sheldrake. (*Tadorna cornuta.*)
- „ Wild duck. (*Anas boscas.*)
- „ Spotted-bill duck. (*Anas pæcilorhyncha.*)
- „ Common teal. (*Querquedula crecca.*)
- „ Pintailed duck. (*Dafla acuta.*)
- „ Mandarin duck. (*Æx galericulata.*)
- „ Redheaded Pochard. (*Aythya ferina.*)
- „ Gulls. (*Larus canus.*)

The Spotted bill and Ibis. About 30 species of these birds are found all over the world, mostly in the warmer climates. The Glossy Ibis is found in both the worlds. The White Spoon-bill is also widely distributed. A familiar species in South America is the Scarlet Ibis, whose name expresses its prevailing colour.

Ducks (*Anatidæ.*) Ducks in the wide sense are web-footed, four toed water-fowls, with a straight beak, armed with teeth or ridges along the edges

of the both jaws; The three front toes are usually fully webbed; hind toe, small, neck, long. In the collection there are several geese, swans &c. and ducks. To distinguish one from the other the following points may be useful to the casual visitors.

Ducks.	Geese.	Swans.
(<i>Anatidæ.</i>)	(<i>Anserinæ.</i>)	(<i>Cygninæ.</i>)
<p>1. Their nostrils are always nearer the roof than the tip.</p> <p>2. Neck moderately long.</p> <p>3. Much smaller in size than the swans and geese. Teals are small ducks.</p>	<p>1. Nostrils about the middle of the beak.</p> <p>2. Plumage is always plain, grey or brown with lighter edges giving it a barred appearance.</p> <p>3. Large in size as a rule but not so big as ordinary tame Indian goose.</p>	<p>1. Exceedingly long neck of great size and plumage is white, grey or black.</p> <p>2. Space between the eyes and bill is bare in full grown birds.</p> <p>3. Middle toe longer than the shanks. The Mute swan may be distinguished by its front edge of the nostrill nearer to the roof of the bill, than to the tip.</p>

The Black Swan (*Cygnus atratus*), is a most magnificent creature of Australia. Mute Swan (*Cygnus olor*) may be found somewhere in the Lake—

The Nukta or Comb Duck (*Sarcidionis melanonota*). Very big in size and is more like a goose. They have got an upright fleshy comb at the roof of the bill, They are true ducks. They build their nest on the tree. Found in India Ceylon, Burma and Africa.

The White-winged Wood Duck (*Asarcornis scutulatus*) is more or less like the Comb duck, found in Assam, Tanaserim, Malawan Peninsula and Java.

The Brahminy Duck (*Tadorna casarca*.) It is a well-known duck of India,

The Mandarin Duck (*Æx galericulata*) is most gorgeous looking bird, coming from China. The female bird is a sober coloured ordinary looking duck.

The Common Sheldrake. (*Tadorna cornuta*) Its coloration is very striking. The bill is pinky scarlet and legs fleshy pink. The female is little paler in colour. It is found in the temperate parts of Europe and Asia and migrate in winter to the south. The next house is

The Schwendler House.

which has also undergone considerable alterations. There is everything there that its inhabitants may want a nice little miniature lake, in which the proud and ornate Mandarin ducks disport themselves a tiny little stream fed by clean pipe water trickling down from a little rockery, with grass plots on one side, and pebbly flats on the other. Little waders hiding in the grass look quite natural. Here the visitor must not omit to see the rare teals from Lake Baikal or the gorgeous and showy silver pheasant.

By the side of this house is a Kiosk which is occupied by a greater Bird of Paradise

Coming a few steps towards the east the visitor will reach the main road, and in the front is

The Refreshment Pavilion.

There are two other stalls where light refreshment may be procured at reasonable prices. On the south is

The Rodent house.

The rodents or order rodentia form a very numerous series of small animals and are scattered all over the world. In all the rodents the canine teeth are entirely absent and they have got one pair of powerful chisel shaped incisor teeth in each jaw. Most of the rodents use their fore paws to hold their food when eating.

Unfortunately the series of these mammals is distributed in several parts of the Garden. Squirrels, rats, mice, rabbits etc are exhibited in this house.

Exit.

The visitor who has followed the route given in the Guide has seen practically everything of interest in the Garden. Hackney carriages may generally be obtained near the main Entrance.

Those who intend leaving by tram should use the Exit turnstile which leads out of the Garden into the Orphangunge Road.

GUIDE TO THE ZOOLOGICAL GARDEN, *ALIPUR, CALCUTTA.*

The Zoological Garden, Alipur, was established in the year 1875 by the Government of Bengal in co-operation with the public. It was inaugurated by His Majesty the King-Emperor Edward VII, then Prince of Wales, on the 1st January 1876, and was opened to the public on the 1st of May of the same year.

The Government of Bengal granted a suitable piece of land for its site, about 33 acres in area and largely contributed to the funds required for the laying out of the Garden and for erecting buildings etc. It contributes also to a large extent to the maintenance of the establishment.

To the enterprising spirit and untiring energy of Mr. L. Schwendler supported by Sir Richard Temple, then Lt.-Governor of Bengal, the public are indebted for this beautiful and interesting Garden.

The objects of the Garden are :—

1. To provide recreation, instruction and amusement for all classes of the community.
2. To facilitate scientific observation of the habits of animals, more especially those peculiar to tropical climates.
3. To encourage the acclimatization, domestication and breeding of animals, and to improve the indigenous breed of cattle and farmstock.
4. To promote the Science of Zoology by the interchange, import and export of animals.

The Garden serves not only as a place for the exhibition of various kinds of animals, but it was also designed to provide a model of landscape gardening. It possesses extensive sheets of water, large shady trees, parterres of indigenous and exotic plants, diversified with ornamental structures etc.

The patrons of the Garden are His Majesty the King-Emperor and His Excellency the Viceroy and Governor-General of India. The President is His Honor the Lieutenant Governor of Bengal. The management is entrusted to by an Honorary Committee appointed by the Government of Bengal, and a paid staff of Officers and servants. The Committee consists of a President, Vice-President Secretary and members whose number is not limited but all of whom must, be members of the Garden, with the exception, however, of a few *ex-officio* members. The paid staff consists at present of a resident Superintendent, an Assistant Superintendent, an Overseer, a Store-Clerk, a Gate Clerk and about a hundred keepers, gardeners and labourers.

The Garden is open from half an hour before sunrise to one hour after sunset. The charge for admission is a fee of one anna per head on all days except Sundays when from sunrise to 2 p. m. it is 4 annas, and from 2 p. m. till sunset, Re. 1.

Carriages:—One rupee plus the usual admission fee for each person in the carriage, except the coachman and syces.

Palanquins:—Eight annas plus the usual admission fee for each person in it. Children under 4 years are free on all days.

Family season tickets can be had on payment of Rs. 16 a year.

Life member's tickets can also be had on payment of Rs. 100 and Rs. 150 (Vide rules of the Garden).

Means of access to the Garden.

The Entrance gate of the Garden is situated on the Belvedere Road and may be approached by the following routes:—

1. The Belvedere Road,—for visitors coming from the Calcutta side either in carriages or on foot.

2. The Orphangunge Road—for visitors travelling by tram cars.

3. The Kalighat Bridge Road—for visitors coming from Kalighat. This route is largely used by the pilgrims to the temple at Kalighat.

On entering the Garden the visitor is recommended to follow the path to the left of the main drive, which will lead him to the Dumraon House devoted to apes and monkeys.

The Dumraon House

This splendid house was built in the year 1578 in honor of the Maharaaja of Dumraon and extensively remodelled in the year 1906. It is well shaded by trees and is admirably suited during the summer for the monkeys coming from a comparatively colder climate. The two main buildings are connected by a central iron cage. Each building is divided into several compartments or cells built of iron bars and wire-netting, and each compartment or cell is so arranged that it enables all the inmates of the cells to be admitted by turns into the big outer cage for open-air and exercise. By providing these open-air cages mortality among monkeys from pthisis (a common and frequently fatal disease in the majority of European Monkey houses) has been considerably checked.

RHESUS MONKEYS.

(*Macacus rhesus*).

They are well-known in Lower Bengal and widely distributed all over India. They appear to vary much in colour, size, and thickness of the fur and even of the tail. The characteristic red colour of the face and callosities of the adult monkeys is partially or altogether wanting in many.

BURMESE PIGTAILED MONKEY.

Macacus leoninus.

The species is found in Arracan and Upper Burma and can be distinguished by its shorter limbs, short muzzle, long hair and black horse-shoe shaped crest on the forehead. It has a short tufted tail which it generally carries over its back.

MACAQUE MONKEY

(Macacus cynomolgus).

Resembles the Rhesus monkey in general appearance but its tail is much longer, about 19 inches; colour of the body is grey or greyish brown, face generally dusky, the eye-lids white. Found in Irrawadi Valley, Burmah, Malayan, Peninsula and Siam.

BROWN STUMP-TAILED MONKEY

(Macacus arctoides).

Stands about 2 feet high, thick-set in build, abundant long hair; hair of the crown slightly parted in middle and wavy at the shoulder; tail almost rudimentary; large area of the seat bare; face red. Found in Cochin China, Assam and Eastern Tibet.

LION-TAILED MONKEY OR WANDEROO MONKEY.

(Macacus silenus.)

A magnificent-looking, black-coloured, slender-built animal. Its chief features are its ruff of light-coloured hair on the chin, throat, cheeks and temples encircling the head, and tufted tail. In appearance it resembles a black-faced old man with shaggy whiskers and beards. It is commonly found in Cochin Travancore forest and West India.

BONNET MONKEY.

(Macacus sinicus)

A brown-coloured monkey, has no reddish tinge in the face or about the seat. Its distinguishing mark is the hair on the crown of its head radiating from the centre. Found in S. India.

WEEPER CAPUCHIN.

(Cebus capuchinus)

This animal has a peculiar low whistling cry. It also has a prehensile tail and becomes very tame in captivity. Found in Brazil.

On leaving the Dumraon House the visitors will find a little way to the south of it

The Crocodile Pool.

This was originally a snake-rockery, which although very popular at one time, lost its attraction since the erection of the more imposing "Reptile House". In 1917 the Snake-Pit was converted into a Crocodile Pool.

The existing members of the order Crocodylia are found in tropical and sub-tropical regions, both in the new and the old world. Their groups are commonly recognised as:—

(1) Alligators; (2) Crocodiles; (3) Gharials.

(2) The head of the crocodile is somewhat narrower and longer than that of the alligator; and the teeth are not so markedly unequal. The large first lower tooth bites into a pit but this is not the case with the large fourth lower tooth which merely bites into a groove and is partly visible when the mouth is shut. The united parts of the lower jaw are somewhat longer than in the alligator, the hind limbs have a jagged posterior fringe, and the feet are more completely webbed than those of the alligator.

(3) THE GHARIAL

can be distinguished by its extremely slender snout and jaws armed with a larger number of comparatively small teeth, all fairly equal in size and arranged with greater regularity than in the alligator and the crocodile.

Alligators are found in America and China.

Crocodiles in America, Africa, South Asia and North Australia.

Gharials in India, in the Ganges, the Indus and the Brahmaputra.

Gharials are occasionally exhibited in this Garden but they do not appear to thrive very well in captivity. *when mature*

Leaving the Crocodile Pool the next object which attracts the visitors' attention is

The Peafowl Pavilion.

In addition to the common Indian, Burmese, and white Peafowls, the pavilion contained a pair of the wellmarked variety described under the name of "Black-shouldered Peacock" (*Pavo nigripennis*). Birds belonging to this variety closely resemble the Hybrids between *Pavo cristatus* and *Pavo muticus*, but as has been clearly shown by Darwin the black-winged variety arises independently in flocks of *Pavo cristatus* which have been a pure breed for many years. There can be no doubt that it is merely a sport of nature. Opposite the visitor will find

(I)
Alligator's snout is relatively short & broad. Teeth are very in size 1st & 4th teeth of the lower jaw bite into pits in the upper jaw in such a way that they are hidden from view when the mouth is shut. Hind limbs have a broad outline & the toes are only half-webbed.

Crocodiles lay eggs in holes made in the sand, the young break open & come out from the egg-shell

The Porcupine Shed,

which contains the following species:—The Short-spined porcupine (*Hystrix longicauda*). The Indian Crested Porcupine (*Hystrix leucurus*). The Brush-tailed porcupine (*Atherura fasciculata*).

A few paces onward to the south, a foot path diverging from the main road leads the visitor to

The Lalgola House,

erected at the cost of Raja of Lalgola, Murshidabad is appropriated to the representatives of pouch-bearing animals or *Marsupials*. They are remarkable for bringing forth their young in an imperfectly developed state. After their birth the young Marsupials attach themselves to the teats of their mother, inside a pouch placed under the abdomen and remain to there until sufficiently grown to be able to shift for themselves. This method of reproduction may often be seen in the Kangaroos and wallabies which freely breed in the Garden. There are several varieties of the Kangaroo, all of which are natives of Australia and Tasmania and adjacent islands and all have the same general habits. The Kangaroos are peculiar looking animals having small rabbit-like heads with large soft ears, and strong hind quarters with a powerful massive tail. When they stand erect the weight of the body is supported by the hind legs and tail; the mode of progression is by leaps. Kangaroos are purely herbivorous animals. Among the representatives of this family the following are generally exhibited here:—

The Great Kangaroo. *Macropus giganteus*.

“ Rufus Kangaroo. *Macropus rufus*.

“ Rufus-necked Wallaby. *Macropus ruficollis*.

“ Rat Kangaroo. *Potorous Kiductylus*.

Close by is a group of three old Bear houses which radiate from a common centre and are now inhabited by guinea pigs, and rabbits, and six-banded Armadillos (*Dasypus sexcinctus*). The Armadillo is a South American animal not very interesting to the visitor as it remains quietly asleep almost the whole day. In the afternoon however it becomes very lively and excited, and runs up and down in the cage, just before the meal. The chief characteristic of this species is the presence of a hard bony covering which protects the upper surface of the head and body. If frightened, it can withdraw its limbs under the bony covering. It has powerful legs covered with bony scales enabling it to dig earth very rapidly.

At this corner of the Garden, begin

The Ruminant's Paddock,

which extend as far north as the Sambar enclosure near the Gubbay Houses.

The following species of ruminants may usually be seen:—

The Indian Gazelle (*Gazelli bonnetta*) found throughout India.

The Hog Deer (*Cervus porcinus*) which belongs to the same sub-region as the sambur and is distributed throughout India, Burma, and Ceylon.

The Barking Deer (*Cervus muntjac*) occurring throughout India, ascending the Himalayas to about 8000 feet and extending eastward through Burma to the Malayan Peninsula and Sumatra. The Nilgai or Blue Bull (*Boselaphus tragocamelus*). It is confined to India extending from the Himalayas as far down as South Mysore, being specially numerous in Central India. The sexes differ in colour. The Nilgai is very uncertain in temper, especially during the breeding season. Nilgai breed freely in the Garden.

The Barasingha or Swamp Deer (*Cervus duvaucelli*). The Indian name "Barasingha" is very characteristic of this deer, in that each antler of this animal has generally six well-developed tines. It is found in the swampy localities on the bank of the Indus, in the Terai, Orissa, Malda, and Assam. The adult male is a fierce animal when he has his horns, but after he sheds them he undergoes a complete change both in respect of his colour and temperament. His coats assume a beautiful reddish fawn colour and he becomes as mild and docile as a lamb.

The Mithan or Gyal (*Bos frontalis*). It is the semi-domesticated wild cattle of the Chittagong Hill tracts, Assam, Cachar etc. It is recorded as having been observed grazing with the Yak at considerable altitude in the Mishmi country. The wild form Gaur (*Bos gaurus*) has often been exhibited in the Garden; but unfortunately they do not bear captivity well. As much diversity of opinion still exists as to the identity of Gyal and Gaur it may be as well to quote what an experienced naturalist sportsman says on the subject—"I am forced to the conclusion that there is no difference of specific value between the two animals (*Gyal and Gour*). Such differences as do exist being principally, not entirely, the result of domestication."

The Brow-antlered Deer or Thameng (*Cervus mellelandi*). It hails from Manipur and Burma and is closely allied to the Barasingha of India. Like the latter it is savage when it has its horns, and mild, after it has shed them. Thamings have frequently bred in the Garden.

On the right side of the road is

THE SONEBURSA ENCLOSURE,

so named after the Maharaja of Sonebursa, containing a number of interesting species of deer and antelopes, the most noticeable among them being—The Japanese deer (*Cervus sika*) from Japan. It is a handy animal and breeds freely in captivity.

The Black Buck or Indian Antelope (*Antelope cervicapra*). It is a most characteristic animal of the plains of India found from the foot of the Himalayas to the extreme south of the Peninsula with the exception of the Malabar coast the eastern Ghats; rare in Lower Bengal, most abundant in the North-west Provinces, Central India and the Deccan. The Four-horned antelope

Tetraceroe quadricornis). This is like the preceding species a characteristic species of the Indian fauna, but it does not occur anywhere in Lower Bengal or Assam. Among the other inmates of the Sonebursa enclosure are E-nus (*Dromæus Novæ-hollandæ*) from Australia which are next to Ostriches in size. The Llama:—There are four distinct recognised forms of Llama (1) Llama (*Lama glama*). (2) Huanaco *Lama huanacos*. (3) Vicuna (*Lama vicugna*). (4) Alpaca.

The Llama is a natives of South America. These curious animals are representatives of camels of the old world, very useful for wool and hide. They are rather of irritable temper, and when irritated they bite and kick and eject the contents of the stomach or spit.

The Land Tortoise (*Testudo elephantina*)—In this enclosure grazing with the deer, the visitors will find a few gigantic Land Tortoises about 4 feet in length, and about 2 feet in height, and probably over 100 years old. They are found in the Aldabra and Galpagos Islands, and are probably on the verge of extinction. They are herbivorous animals—having no teeth which are replaced by horny plates forming a strong cutting bill. When they are frightened they can withdraw the head and take shelter under their heavy shields.

Continuing his journey alongside the paddocks the visitor will find on the left another spacious paddock shaded by a grove of cocanaut trees occupied by the the Spotted Deer or Cheetul (*Cervus axis*). This well known species is distributed over Central and Southern India, and along the outer ranges of the Sub-Himalayan and Terai region; abundant in the Sunderbunds, but does not extend further east, nor it is found in the Panjab. The Spotted deer breeds very freely in the Garden.

The Wild Buffaloe (*Bos bubalus*). This species is found in the plains of the Brahmputra and the Ganges, from Eastern Assam to Tirhoot, the coast of Orissa and Midnapur, and the Central Provinces.

The Banting or the Sondaic Ox (*Bos sondaicus*). These beautiful bovines occur in their wild state in Burma, Malayan Peninsula, Sumatra and Borneo. A cow Banting is a very docile animal but the temper of the bull cannot be trusted. Bantings breed freely in the Garden.

On the other side of the lane is the large enclosure inhabited by the Sambur Deer (*Cervus aristotelis*) which is distributed over a greater part of India from the Himalayas to the extreme south of the Peninsula. It is a denizen of the deep forest.

The last enclosure of the range of paddocks has been allotted to pigs of which there are two species now living in the Garden.

The Wild Pig of India (*Sus cristatus*) which is closely allied to the wild boar of Europe, is found all over India, Burma, and the Tenasserim provinces, extending to the islands of the Malay Archipelago. The Andaman Pig (*Sus andamanensis*) which is supposed to be only a dwarf race of the wild Pig of India is found in the Andaman Islands.

Leaving the Pigs the visitor will find further on to the south.

The Rhinoceros enclosure.

Several varieties of the Rhinoceros have been exhibited in the Garden from time to time. The present occupant of the enclosure, "Cleopatra", is an Indian Rhinoceros (*Rhinoceros unicornis*) presented by Lord Curzon of Kedleston.

Rhinoceroses have three toes on each foot, and each toe terminates in a small hoof-like nail; their general form is heavy and large, and the legs short and stout; the dermal horns are situated above the snout and grow throughout the animal's life, and if lost are reproduced. They have two inguinal mammæ.

The Indian Rhinoceros (*R. unicornis*). At present the Indian Rhinoceros is mostly confined to the great forests of the Dooars, to the east of the Teesta, Nepal Terai, and Assam. Formerly they had a wider range of distribution. The animal has one horn on the nose. It is a huge unwieldy creature, covered with a thick skin which lies in massive folds on the different parts of its body. It is herbivorous and inoffensive in the natural state unless provoked and appears to enjoy mud and ooze.

In the year 1889 a young hybrid (between *R. Lasiotis* and *R. sumatrensis*) was born and is the second recorded instance of the Rhinoceros bred in captivity.

Close to the Rhinoceros enclosure the visitor will occasionally find under the big tree a young Indian Elephant (*Elephant indicus*). The elephant is a well-known animal all over India and is found in the Terai range of the Himalayas, Assam, Cachar, Burma, Siam, Malayan Peninsula. The Indian elephant is much smaller and of better temper than the African variety, children are permitted to ride the elephant. Application for transact should be made on the entrance to the Garden.

Close by are the Cranes' Paddocks containing the following birds:—

The Cape-crowned Crane (*Balearica chrysoplargus*). This is a beautiful bird from South Africa. It has obtained its name from the tuft of velvety crested feather on the head, which looks like a glossy cap. The Balearic Crane (*Balearica pavonina*). Hab. West Africa.

The Stanley Crane (*Anthropoides paradisea*) Hab. South Africa, east to Mashona-land, west to great Namaqualand and Damaraland.

The Manchurian Crane; (*Grus viridirostris*). The Sarus Crane (*Grus antigone*). The Demoiselle Crane (*Grus Virgo*). The Asiatic Common Crane (*Grus leucogeranos*). The Common Crane (*Grus communis*).

From the south east corner of these enclosures a narrow path leads to

THE GUBBAY HOUSE

built to commemorate the name of Mr. Elias Gubbay and devoted to apes and monkeys is an oblong brick-built edifice measuring 50 feet long by 30 feet broad by 22 feet high with an arched roof. The doors and fan light

are all made of thick plate glass, so that while light and air are freely admitted, draught and cold can be effectually excluded, and the temperature regulated. The cages each measuring 7 feet 6 inches long by 5 feet 6 inches broad by 14 feet high, are fixed in separate blocks against the walls, an arrangement which although involving unnecessary waste of space, has been allowed to continue, as it does not interfere with the health and comforts of the inmates. It was remodelled in the year 1906-07.

The Orang-utan (*Simia satyrus*) from Borneo and Sumatra.

The manlike ape of Borneo and Sumatra differs much in appearance from the other members of the same group. The name orang-utan is derived from the Malayan word signifying "Man-of-the-Wood." An adult Orang has got reddish-hued hair all over the body, tall elevated forehead and a flat face with an oval contour. It stands about 4 feet 4 inches in height, has a pair of long arms which almost touch the ground when it is in an upright position. The legs are very short and thick, and they are twisted in such a manner that the knees are turned outwards and the feet consequently set very obliquely to the line of the leg. Owing to this peculiar structure of the legs and feet it walks on the outer side of its feet, the soles are turned inwards and almost face one another. This arrangement of the feet is admirably suited for climbing trees but ill suited for walking rapidly on the ground. There is a kind of collar round its neck formed of folds of skin containing an internal cavity communicating with the upper part of the wind pipe. The sloping and stooping shoulders and prominent abdomen greatly detract from the appearance of this animal.

The Orang in captivity is very affectionate and docile.

The Common Marmoset (*Hapale jacchus*). This is a beautiful little creature popularly known as the marmoset, many of which are smaller than the squirrel. Its distinguishing features are its long whitish grey hair on the side of the head which conceal the ears, a long bushy ringed tail, eyes large and nose flat.

Hab. Brazil.

The Lemur. There are several species of the lemur in the collection. The true lemurs are confined to Madagascar. Although nocturnal in habits in their wild state, they have, it appears, adapted themselves to their changed circumstances, and remain generally awake and lively during the day.

The Ring-tailed Lemur (*Lemur catta*) is easily recognised as it resembles a small fox. It is of an ashy grey colour darker on the back white on the under parts and its distinctive features are the alternate rings of black and white on the tail, from which it derives its name.

The Chacma Baboon (*Cynocephalus porcellus*). This is a very powerful monkey. The distinctive feature of a chacma is its large dark colour muzzle, and the absence of tuft from the tail. The colour of its body is uniformly dark brown mixed with a shade of light yellow or greyish black. It is found in all the mountain ranges of the Cape district of West and South Africa.

The Mandrill (*Cynocephalus mormon*), is a brute of tremendous power and ferocity. It resembles the other Baboons in general appearance, but its leading features are its peak-shaped crest on the crown of the head, and the swellings on the face ornamented with brilliant coloration in the adult state. that West Africa.

The Drill (*Cynocephalus leucophus*). The Drill resembles the Mandrill but lacks its brilliancy of colouring. The general colour of the face is brown, and the bare part of the face is entirely black. It is found in West Africa.

Emerging from the Gubbay House by the east gate and crossing the road, the visitor will find the smaller duck house by the side of the Serpentine tank for the accommodation of the aquatic birds. This house is known as

The Old Boat House.

It contains the following birds :—

Flamingoes, Herons, Coots, Muscovy Ducks, Indian Snake Birds, Egrets, Adjutants and Storks. The Flamingoes (*Phœnicopterus antiquorum*) can at once be distinguished by their long neck and legs, and bent-down bill. They are found in shallow water and feed on small fish and inhabit Europe, North Africa, and greater part of Asia and India.

The Purple Coot (*Porphyrio Poliocephalus*) is a common bird found throughout India and Ceylon. The Water Coot (*Gallicrex cinereus*) looks like the purple Coot but its plumage is dull black instead of bluish, the male bird having a large red crest.

The Large White Egret (*Herodias alba*) is found throughout India and Ceylon.

The Murshidabad House.

Close by the "Old Boat House" is the Murshidabad House named in honour of its donor, H. H. the Nawab Bahadur of Murshidabad. It has undergone thorough renovation in the last four or five years. Several valuable birds are kept here, viz :—

"The Birds of Paradise."

These magnificent birds are near allies of the crow. There are nearly 50 species of Birds of Paradise of which 18 are well-known.

Most of these birds are confined to the wooded hills of the Malay Archipelago, New Guinea, and the adjacent Papuan Islands and one genus is found in the Malaccas, while three genera extend to the North Australia.

The adult male birds of all the species are characterised by an extraordinary development of plumage quite unparalleled in any other group of birds, but the females are generally plain and ordinary-looking birds, most of them being of a uniform chocolate colour.

The Birds of Paradise through exquisite beauty of form and color, and strange development of plumage have always excited the wonder and admiration of the most civilized and intellectual section of mankind and furnished to the philosopher inexhaustible materials for the speculative study of nature.

The collection contains the following specimens:—

The Greater Bird of Paradise (*Paradisea apoda*)

The Lesser Bird of Paradise (*Paradisea minor*)

The Red Bird of Paradise (*Uranornis rubra*)

The Twelve-wired Bird of Paradise (*eleucides niger*.)

The Rifle-bird. (*Ptilorhis paradisea*)

The Doves and Pigeons are placed in three different houses viz:—Murshidabad House, Sarnomoyi House and the Jheend house.

The Doves and Pigeons belong to a very large family, Columbidae. Over 500 known species are found all over the world but the most numerous amongst them are those inhabiting Australia and the Oceanic region; many live in America but not of very varied forms, a few in Europe and temperate Asia. They abound also in India.

All pigeons are monogamous in their habits; and the pair show considerable devotion to each other; both sexes assist in making the nest, incubating the eggs, and feeding the young. They do not generally lay more than two eggs at a time.

The following varieties are interspersed through the various houses:—

The Indian Blue Rock—Pigeon (*Columba intermedia*)

The spotted dove (*Turtur suratensis*)

The Common Ring Dove (*Turtur risorius*)

The Crested Pigeon (*Ocyphaps lophotes*)

The Bronze-winged Pigeon (*Phaps chalcoptera*)

The Wonga Wonga Pigeon (*Leucosarcis picta*)

The Blood-breasted Pigeon (*Phlogænas cruentata*)

The Imperial Green Pigeon (*Carpophaga ænea*)

The Bengal Green Pigeon (*Crocopus phanicopterus*)

The Orange-breasted Green Pigeon (*Osmotreron bicincta*)

The Kokla Green Pigeon (*Sphenocercus sphenurus*)

The Nicobar Pigeon (*Calenas nicobarica*)

Coming out by the Western gate, the visitor will find on his left in the middle of the road a monument in memory of Mr. L. Schwendler who, for many years, was intimately connected with the Garden. A little further up, on the right hand side is

The Sarnomyi House.

This house has been erected at the cost of Maharaja Manindra Chandra Nandy, the nephew and successor of the late Maharani Sarnomoyi of Cossimbazar.

The house was extended in three sides of the main building are three lofty wirenetting aviaries (the Eastern aviary, the Western aviary, and the Central aviary) which contain bushes and trees and afford practically a natural home for the birds for which they are intended. The birds live without any restraint, with ample opportunities for exercise, and some of them freely breed here. The following are the most important and prominent inmates of this house:—

Parrot (*Order Psittaci*)

Parrots form a large group of about 500 species which present well-marked characters. Their most obvious external characters are displayed by their feet and bills. In the feet the first and the fourth toes are permanently turned backwards while the second and third forward. The whole foot is divided into two digits, "*Zygodactylous*"; bill, very short, strongly hooked with acere at the base. Tongue thick and fleshy.

Parrots are found all round the world, chiefly in warm climates especially in tropical America whence come the Macaws (*Ara*) and Amazons (*Chrysotis*), and in the Australian regions where Lories (*Lorinae*) and the crested Cockatoos (*Cacatua*) are found. A few species are found in temperate climates in New Zealand, North America and South America.

For the most part parrots are thoroughly arboreal and climbing birds and are essentially characteristic of the tropical and sub-tropical regions of the globe.

All parrots make their nests in the hollows of trees, and usually lay two or more white eggs. These birds are very intelligent and usually of gorgeous plumage.

The following species will be found:—

Cockatoos.

The Rose-crested Cockatoo (*Cacatua moluccensis*).

The Great Sulphur-crested Cockatoo (*Cacatua galerita*)

The Great White-crested Cockatoo (*Cacatua cristata*)

The Roseate Cockatoo (*Cacatua roseicapilla*)

The Bare-eyed Cockatoo (*Cacatua gymnopsis*)

The Great Black Cockatoo (*Microglossa aterrima*)

All of them came from Australian region and Philippine and Sulu Islands. All of them have got erect crests on the head.

Family Palæornithidæ.

(Parrakeets and Lories).

The Red-cheeked Parrakeet (*Palæornis erythrogeus*)

The Red-breasted Parrakeet (*Palæornis fasciatus*)

The Blue-winged Parrakeet (*Palæornis columboides*)

The Malayan Parrakeet (*Palæornis longicauda*)

The Red-winged Parrakeet (*Aprosmictus erythropterus*)

The Ring-necked Parrakeet (*Palæornis torquatus*)

(Very abundant in India)

The Indian Lorikeet (*Loriculus vernalis*)

The Undulated Grass Parrakeet (*Melopsittacus undulatus*)

The Rose-faced Love bird (*Agapornis roseicollis*)

The Purple-capped Lory (*Lorius domicella*)

The Chattering Lory (*Lorius garrulus*)

The Blue Breasted Lory (*Eos reticulata*)

Family Psittacidæ.

(Macaws)

The Greater Vasa Parrot (*Coracopsis vasa*)

The Grey Parrot (*Psittacus erythacus*)

The Blue and Yellow Macaw (*Ara ararauna*)

The Red and Yellow Macaw (*Ara chloroptera*)

The Hyacinthine Macaw (*Ara hyacinthina*)

The Eastern Aviary.

The Victoria Crowned Pigeons (*Goura victoriae*)

Common Crowned Pigeons (*Goura coronata*)

These birds are found in New Guinea and the adjacent islands. They freely breed in the garden.

The Central Aviary

(Hornbills.)

This group of birds can be distinguished at first sight by the enormous size of their bills which are further, in most of the species, increased by a casque or protuberance placed at the base of the bill on the culmen. Eyes are protected by strong eye lashes (modified feather). Plumage—plain but showing a strong contrast—black and white, and the presence of the eye lashes give them a striking appearance.

Hornbills are a well-marked family (*Gucerotidæ*) found nearly throughout the Ethiopian and Oriental regions and occurring also in the Papuan sub-region. They are especially remarkable for their nidification—a hole in a tree is selected, and there the female, usually with the aid of the male, encloses herself and shuts up the orifice by means of mud and her own droppings with the exception of a narrow vertical slit for ingress of fresh air and food. She is thus enclosed before she begins to lay and apparently remains in the hole till the young are fledged, being fed all the time by the male through the slit left in the enclosing wall.

There are about 65 species of the tree hornbills.

The Bucerotidæ are found in Africa, south of the Sahara and in the south-east Asia to New Guinea in wooded country. The Ground Hornbill (*Bucorvinæ*) are confined to Africa.

Among the tree Hornbills the most familiar in India is the Grey Hornbill (*Ocyros birostris*.)

The Rhinoceros Hornbills (*Buceros rhinoceros*) are found in Malayan Peninsula, Sumatra, and Borneo. The Indo-Burmese Hornbill (*Anthracoceros albirostris*) is found in India, Burmah and the Malayan Peninsula and Borneo.

THE WREATHED HORNBILL.

(*Rhytidoceros undulatus*.)

Hab.—In the hill ranges of Sylhet, Cachar and extends through the Malayan Peninsula to Sumatra and Java.

THE WRINKLED BILL HORNBILL

(*Cranorrhinus corrugatus*.)

From Malacca, Sumatra and Borneo.

THE WESTERN AVIARY

In this aviary are exhibited several hundreds of small birds, such as, Finches, Muniahs, Java sparrows, Robins, and Bulbuls. They enjoy the ripe fruits of various trees (*Papaya*, *plantain*) planted in the aviary, and feed on the seeds of grasses.

They breed here freely and in the breeding season it is very interesting to observe them building their nests.

Leaving the Sarnomoyi House and crossing the main road the visitor will find

The Jotindra Mohan Tagore's Library.

(Not open to the Public).

For this house the Garden authorities are indebted to the late Maharaja Sir Jotindra Mohan Tagore, K.C.I.E., of Calcutta, who, during his life time, was a constant supporter of the garden, and was a recognised leader of Bengal aristocracy. Passing the Library Room the visitor will come to

The Mullick House

named after Raja Rajendra Nath Mullick of Chorebagan, Calcutta, an enthusiastic animal fancier of his time, who maintained his own private menagerie long before the "Zoo" came into existence. It is a round brick-built structure with six radiating outer wire-netting cages, each having a small fresh water tank, in which the otters always be seen. Amongst others the following are the chief inmates of this house :—

THE CAT BEAR OR PANDA.

(*Elurus fulgens*)

This is a beautiful animal about the size of a cat. Legs-short and stout, tail long and bushy, colour yellowish, fur of abdomen and legs generally darker, face and lower lip white. It inhabits the south-eastern Himalayas at about the elevation of 7000 to 8000 feet; Nepal and Assam.

THE COMMON OTTER.

(*Lutra vulgaris*.)

is common in Bengal and is found all over the world. The European otters are larger than the Asiatic varieties. Otters are very playful and active. They overtake fishes in water and bring their prey ashore to eat them.

THE CLAWLESS OTTER.

(*Lutra leptonyx*)

In this variety the claws are extremely small and rudimentary, and the great toes on all the feet are considerably larger than the other; found in greater parts of the oriental region.

The Coypu Rat.

(*Myopotamus coypu.*)

It is a large rodent of South America generally found near rivers and lakes. It delights in water and can swim well.

THE CRAB-EATING MUNGOOSE.

(*Herpestes urva.*)

The Common Indian Mongoose (*Herpestes Mungo*) to be found throughout India; very clever, intelligent easily tamed and is an expert snake-killer. It is very fond of eggs and destroys large number of reptile's eggs, hence it is very useful and requires protection. It is carnivorous in habits, and is found in Africa and Asia.

Little further up from the Mullick House is

The Durga Charan Law's Laboratory

(*Not open to the Public.*)

This building owes its origin to the munificence of the late Maharaja Durga Charan Law of Calcutta, who, during the infancy of this institution, and when it was struggling hard for its existence, helped it not only by contribution towards its funds, but also by his sound advice. In fact, he was one of the oldest counsellors of the Managing Committee of the Garden.

A few spaces northward of the Laboratory and just on the main road is

The Reptile House.

The first attempt at keeping Reptiles in captivity under such conditions as might render it possible to observe their habits was made in 1878 when a Pit (to which allusion has been made already) containing a rockery it was built. This Snake-Pit having proved inadequate for the purpose the present imposing house was erected and opened in 1892, for the better display of the collection.

On entering the house the visitor will observe on his left a plate glass tank filled with salt water, for the display of sea snakes. There is a series of large fixed glass cases, which occupy the three sides of the interior, and contain representatives of the various species of both poisonous and non-poisonous snakes. On the eastern side of the house will also be seen a number of smaller glass cases appropriated to smaller snakes and lizards. In the centre of the house there are two ornamental basins, which are fed by clean pipe water, and were for many years devoted to the crocodiles and alligators but are now tenanted by the water lizards, turtles and tortoises.

The following specimens are to be found in this House :—

The Python or Rock Snake (*Python molurus*).

The Reticulated Python (*P. reticulatus*) from Malaya.

Pythons are non-poisonous snakes. They are of great size and strength seizing and killing their prey instantaneously and painlessly. In captivity, they are very fond of water and are generally fed with freshly killed ducks and rabbits.

The Cobra (*Naja tripudians*). It is a well-known snake of India. Although in appearance very fine-looking it is deadly poisonous and of a very irritable temper. Before using its deadly fangs it stands erect with hood expanded on which the characteristic marks, popularly believed by the Hindus to have been impressed by the feet of Vishnu is visible.

The Hamadryad or Snake-eating Cobra (*Naja Gungarus*). This magnificent creature attains a to a considerable size. When provoked it stands 2 to 3 feet high and expands its hood. The Indian Snake-charmers are very loathe to handle these snakes which as their name indicates are cannibal in their habits.

The Russel's Viper (*Daboia russellii*) is a deadly poisonous snake and may be ranked next to the Cobra. Its peculiarity is that instead of laying eggs, as other snakes do, it hatches them within the body, and the young ones come out in an active state.

The Banded Krait (*Gungarus fasciatus*) is a very common snake of India. It is a beautiful-looking snake with black and yellow stripes completely encircling the body and the tail. It is very poisonous but as its fangs are much smaller than those of the Cobra and the Viper, its bite is not always so fatal and affective as theirs.

There are no sure methods of distinguishing the poisonous snakes by mere external appearance or character, without a thorough knowledge of their various forms. It will be found that certain members of the Viper family are poisonous while the other members are non-poisonous. Almost all the harmless snakes have six rows of teeth-four in the upper and two in the lower jaw. In some snakes all the teeth are equal (in others they are irregular) and are directed backwards, thus affording a formidable obstacle to any resistance on the part of the prey when once seized.

Some in fact
certain

MOUTH AND TEETH OF THE POISONOUS SNAKES.

There are two slightly curved fangs on each side of the upper jaw, (sometimes one or two rudimentary teeth may be found behind the fangs) and the fangs contain a perfect canal for the conveyance of the poison to the bitten tissue. The fangs are erected and enveloped in a fold of mucous membrane and occupy the same place as the canine or cutting teeth of dogs and other carnivora. They possess only four rows of teeth, two in the upper jaw and two in the lower jaw, and are provided with poison glands which are ultra-developments of the salivary gland, these being provided with the muscles necessary to force the secretion of the gland into the fangs when the snake bites.

Reptiles are commonly known as "Cold-blooded" creatures. They are not provided with heat protective arrangements, like skin fat, fur or feathers as in the case of warm-blooded animals. Nor have reptiles a highly organised respiratory and circulating system; consequently the temperature of the body rises and falls and comes to the same level as the surrounding air or water.

The majority of snakes lay eggs oblong in form enclosed in soft leathery sheath which are hatched by natural heat but pythons incubate their eggs. On the other hand in case of both fresh and sea water snakes the eggs are retained within the body of the mother until they are hatched, and the young ones come out in an active state. Snakes have no eyelids but the eyes are covered with a transparent disc which peels off when the snake changes its skin.

Emerging from the Reptile house the visitor should follow the path to the back and on the right of the building which leads to

The Antelope House.

Before the erection of this house, such valuable animals as the Saemmerings and Beisa antelopes hailing from the dry climates of Egypt and Abyssinia, the ordinary Indian antelopes inhabiting the high and dry table-land of North Western India were exposed to conditions very unfavourable to their well-being and consequently the death-rate amongst them was very high. The authorities of the Garden were fully conscious of the drawbacks in their institution, but the want of space and requisite funds hampered them as regards making the necessary improvement in this direction. At last, in the year 1904, the Government of Lord Curzon gave them both and they have erected the present building.

In a Zoological Garden it is essential to follow, as far as circumstances permit, the accepted dictum that the more the conditions the animals live under approximate to those of their natural habits, the better the prospect of their escaping disease. This elevated house, which is divided into six stalls, and the spacious lawn behind it, where the animals can take their open air exercise by turn is well adapted for the accommodation of such antelopes as come from regions drier than Lower Bengal. Some of the rarest varieties of this species are exhibited here, viz.:-

The Anoa (*Anoa depressicornis*)

closely resembles a young buffalo and has short thick prismatic horns which are directed upwards. It is a native of the Celebes and is a very hardy animal and breeds freely in the Garden.

The Beatrix Antelope (*Oryx leucorox*)

is a beautiful black and white antelope from Arabia.

The White-tailed Gnu (*Connochaetes gnu*)

is a very shy, active, and powerful animal. It has a heavy head with peculiarly bent horns, has long hair on the face. Mane and tail are like those of the horse. This animal comes from South Africa.

The Duiker (*Cephalophus grimmi*) comes from Africa.

The Four-horned antelope (*Tetraceros quadricornis*)

is found through out India, but not in Lower Bengal, very docile in captivity.

The Markhor (*Capra megaceros*.)

Does not stand this climate but has been occasionally exhibited in the Garden.

After leaving the Antelope House the visitor has to retrace his steps and return by the same path to the main drive. To the North he will find—

The Small Carnivora House

This building, was constructed in the year 1898, with view a to accommodate some of the rare and delicate felines. The following animals are exhibited in this house;—

The Leopard (*Felis pardus*) or Panther is a well-known animal of Bengal and occupies the third place in size in the cat family of the old world.

The Black Leopard is only a variety and not a distinct species. The black colour is deeper in some and lighter in others. The black leopards have the reputation of greater ferocity than their paler brethren. Leopards are found in South Asia, India generally, and some parts of Africa.

The Clouded Leopard (*Felis nebulosa*.) It is a beautiful-looking animal, smaller than the leopard. The characteristic features of this animal are its colour and marks. Colour earthy brown, lower part and inside the body whitish, markings of the body, irregular. The head and the limbs spotted. Sides, elongated, having narrow pale-coloured patches on the body, tail, ringed with black mark. Found—South-Eastern Himalayas, Assam and Malayan Peninsula.

The Striped Hyæna (*Hyæna striata*) is a well-known animal of Lower Bengal, found throughout India, unknown in Ceylon and also found in Northern Africa.

The Indian Wolf (*Canis pallipes*). When they are in packs, their ferocity is well-known. They are very common in the Indian peninsula, Behar and Western Bengal.

The Fishing Cat (*Felis viverrina*) Larger than the ordinary domestic cat. It derives its name from its peculiar habit of catching fish and living on it to a great extent. Found in India and Indo-China.

The Jackal (*Canis aureus*). In the collection there are got several varieties of Jackals. They are well-known animals of Bengal. The white Jackal (Albino) the Black Jackal (deeply pigmented) are freaks of nature. Jackals are found throughout India, Ceylon, Burma, South-eastern Europe and North Africa.

The Dingo (*Canis dingo*) resembles the pariah dog of India. Found in wild state in Australia".

Fennec Fox (*Canis cerdo*) is a lovely little animal of North Africa, the smallest of all the fox tribe. It is about 15 inches long and has got very big ears and prominent eyes.

The Lynx (*Felis lynx*) is a heavily-built cat and is an inhabitant of cold climate. Found in Upper Indus Valley, Ladak, Tibet, north of the Himalayas and north of the Alps.

The Side-striped Jackal (*Canis lateralis*).

The visitor should now turn to the left and examine the three houses, next in order viz the Smaller Antelope house, the Ostrich house and the Birds of Prey Aviary.

Smaller Antelope house.

Indian Antelope (*Antelope cervicapra*)

Found throughout India, with the exception of Malabar coast, Eastern Ghats and Lower Bengal. Urial (*Ovis vignei*) It is an Asiatic wild sheep known in the Punjab as Urial and at Ladak "Sha"

Ostrich house.

The Ostrich (*Struthio camelus*)

Ostriches are two-toed birds of gigantic size and are incapable of flying. They have got small bare heads, depressed bill, a long neck and extremely muscular thighs. A good sized bird stands about 7 feet in height. Young birds of both sexes resemble each other. The females at first have a mottled dark brown plumage with yellowish white quills and tail feathers. The color in adult male birds changes into black and pure white respectively, whereas the females become uniformly dark grey. Found in the open sandy tracts of Africa, Arabia.

Rhea—(*Rhea Americana*)

Cassowary—(*Casuarius galeatus*)

Emu—(*Dromaeus-novae-hollandae*)

The Birds of Prey Aviary.

Black vulture (*Cathartes atratus*) from America.

Cinereous vulture (*Vulture monachus*)

Long billed vulture (*Hyps indicus*) found in India.

Lammergeier (*Hypaetus barbatus*) It is a link between eagles and vultures. It is a magnificent bearded bird, and is found in the mountainous regions of South Europe, North Africa, West and Central Asia and common in the Himalayas.

Crested Hawk-Eagle (*Spizætus cirrhatus*) found throughout India ascending the Himalayas up to 7000 feet.

The Pallas's Sea-Eagle (*Haliæetus leucoryphus*) Common in Bengal and North Western India.

The Indian Barn Owl (*Strix javanica*) Found all over India and Ceylon.

The Brown Fish Owl. (*Ketupa ceylonensis*), Found all over India, Burma and Ceylon.

The Brahminy Kite (*Haliaster Indus*) Found throughout India.

The Black-winged Kite. (*Elanus cæruleus*). Found throughout India and greater part of Africa. Following the main drive the visitor will next come to a small solitary house for Indian wild dogs.

The Indian Wild Dog (*Cyon dukhuensis*). In appearance it looks like a jackal but not so compact is found in the Himalayas, Assam forest and western Bengal. It has a peculiar smell, which is perceptible from a long distance.

Next is the

New Bear house.

For this house the Committee of management of this Garden are indebted to the present Nawab Bahadur of Dacca. It affords excellent accommodation for bears. Each pair has two rooms allotted to them, one outer and the other, the inner or the retiring den. The inner den is provided with a water tank, in which they bathe especially in the hot weather. This house shelters a number of Himalayan bears (*Urus torquatus*), Malayan bears (*Urus malayanus*), Sloth bears (*Melursus ursinus*). In another part of the Garden there is a large Brown bear.

The Himalayan Bear (*Urus torquatus*) is found throughout the forest ranges of the Himalayas, Afganistan, Beluchistan, Eastern Assam and Burma.

The Sloth Bear is found in the hill and jungly forests of India. It is a well known animal of India and Ceylon, It can be recognised by its protrusible lips, white muzzle, white claw and very long shaggy black hair.

All bears have the same general habits and are fond of feeding on berries, fruit-roots, grubs, insects. They are exceedingly good climbers and take great trouble to climb trees in search of honey.

Next we come to the

Cooch Behar house.

The old shed which used to contain smaller carnivorous animals was demolished and replaced by this new shed of a more substantial and durable character which now accommodated by the following animals:—

The Leopard Cat:—This is a pretty little cat and varies a good deal in different individuals in size and shade of colour. It is commonly found in the Himalayas, Lower Bengal, Assam, Burma, Malayan Peninsula and Western part of India.

The Civet (*Genus viverra*) is well known in India. It has got a characteristic odour, due to some glands on the skin and perineum, which secrete an oily substance from which the well-known perfume is prepared, which gives the name to the group. There are generally six species of true civets. Five being Asiatic and the one is African. They are nocturnal in habits and are solitary animals.

The Bear Cat or Binturong. This resembles both a civet and a bear in general appearance. It is of a greyish black colour with a shaggy coat with numerous whiskers. Found in Assam, Arracan and Malayan Peninsula.

The Hog Badger. This resembles a pig. The prevailing colour of the body is grey and the head white. It is generally found in Nepal, Assam and Pegu. By retracing his foot steps to the main road and turning to the right the visitor will find

The Buckland Enclosure.

This enclosure was built to commemorate the name of Mr. C. T. Buckland I. C. S. who was the president of Garden for many years and contributed largely to its welfare at the time of its infancy. This enclosure originally built for the Rhinoceros, is now inhabited by a young Hippopotamus (*Hippopotamus amphibius*.)

Hippopotamus (*Hippopotamus amphibius*). It is believed that in the Pliocene and the Pleistocene ages several species were found in India. It is a large thick-skinned animal like the other ungulata. It has a very big head with a gigantic mouth. The eyes, ears, nostrils, are situated rather towards the top and at the same level so that when floating in water it can see hear and breathe without exposing the body. It is entirely herbivorous.

The Tapir Enclosure.

The next enclosure on the right hand side contains a very pretty sight—a pair of Malayan Tapir (*Tapirus indicus*) and their striped baby making a very picturesque family group when standing up together. Externally the tapir much resembles a pig but anatomically it is related to the Rhinoceros on the one hand and to the horse on the other. It is rather shy and very mild in temper. It is a herbivorous animal and is very fond of water. From here the visitor will be able to view the big lake where a large number of aquatic birds are exhibited. About 5 years ago it was enclosed with were-netting for the reception of these species. It is a real paradise to them, as they live here without any restraint, as if they are in their natural habitat. Here in the morning, the Brahminy ducks (the chakrabak of the Indian classical writers), may be seen by scores, prunning their feathers, or basking in the sun while the swans and geese are yet enjoying their early bath. Saras cranes may often be seen dancing with ludicrous gyrations, showing their vanity or love of demonstration. Besides the swans, geese, and cranes on land and water,

the trees of the enclosure, especially on the island have their occupants. Hundreds of night herons resort to them for nesting purposes. Besides the herons, the egrets, storks, Indian Snake-birds etc also live here and some of them breed freely here.

Walking round the flower bed the visitor will come to the

Ezra house.

Built by the late Mr. David Ezra for the accommodation of the splendid pair of Giraffes which he presented to the Garden in 1877. It is now tenanted by a pair of Zebras, 3 wild Asses, 1 Kiang.. The Zebra is a well-marked and a remarkably docile animal.

Zebra (*Equus burchelli*). There are several varieties of Zebras The mountain Zebras (*Equus Zebra*) Burchell's Zebras (*E. Burchelli*) Grant's Zebras (*E. Granti*) Chapinan's Zebras (*E. Chapmani*) and Grevy's Zebras (*E. Grevyi*).

In collection there is only a pair of Burchell's Zebra. They are beautiful creatures, standing about 4 feet high, robust thick animals mane and tail full, the general colour of the body pale yellow and the stripes are brownish black and there are fainter and narrower stripes in the interspace between the broad stripes. These are natives of south Africa.

Wild Ass (*Equus onager*). Found in the Punjab, Sindh, Cutch, Rajputna and in Afganistan, and Beluchistan to Persia.

The Kiang or wild horse (*E. Kiang*) is larger than the wild ass; found in the plains of Tibet.

On turning to the east from the Ezra House the visitor will at once see at the end of the straight road a semi-circular brick building. It is the most important and attractive house in the Garden known as the

Burdwan house

for the accommodation of the larger carnivorous animals. It was built at the expense of the Burdwan Raj Estate. It is 250 feet long 32 foot wide and divided into 11 double chamber dens-outer or exhibiting, inner or retiring dens. Each den communicates with the other and the sliding doors are worked from the top. It is a most up-to-date house with a broad verandah which runs along the southern front of the house. The floor of the house is 3 feet in height and was recently fitted with wooden platforms. But the most conspicuous improvement which has lately been carried out in this house is a new open air enclosure at the back of it the cost of which was met from the fund provided by the late Maharaja Bahadur Surya Kanta Acharya Chowdhury of Mymensing.

The house contains some very interesting selections of large carnivorous animals, foremost among them being a pair of docile and good-tempered lions belonging to the celebrated Kordofan race which attains to larger size than most

aces of African lions. Besides this pair, there are two other pairs of lions from Africa, a pair of lively and amusing lion cubs born in the Garden and the ferocious and man eating tigress (man-eater) from the Gaya District in Bengal.

The animals are fed at 5 P.M. every day and it is a sight to see their feeding and the eagerness, when the food is thrown to them. The behaviour of even the tamest among them seems to change for the moment on the scent of flesh and their excitement and impatience reach a climax when the buckets containing the food are placed near the den preparatory to distribution; they may be seen clawing at the bars, and leaping upwards in their excitement.

The Lion (*Felis leo*) It is a most magnificent and far more striking in appearance, of the whole of the cat tribe and indeed of all the carnivora animals. Its most striking feature is its splendid mane decorating the head and chest of the male, its well-shaped body and its tufted tail. The lions vary a great deal in colour and size. The lion is a true cat; it has retractile claws and the circular aperture for the pupil of the eyes. Lions are found in Africa, South-west Asia. Indian Lions are now only found in the Gir forest in Kattiwar. Lions stand captivity well and since last year they have been breeding freely in the Garden.

The Tiger (*Felis tigris*). It is also a true cat, and entirely an Asiatic animal, the largest of the living cat family. It is the most powerful and the strongest of all the carnivora animals. It is distributed throughout India, Burma, Malayan Peninsula, South Eastern Asia, Java, Sumatra, throughout China, Northern Persia into Turkistan, Central Asia and Southern Siberia. They are subjected to great variation in form and colour. They breed freely in the Garden.

The Jaguar (*Felis onca*.) It is a South American animal. It clearly resembles the Leopard and is a perfectly arboreal animal.

On the east side of the Burdwan house is the Old Mandrill House. The present inmates of this house are a beautiful full-grown Mandrill and an Anubis Baboon. By following the same path a few yards towards the south the visitor will find a solitary house for the Brown bear.

The Brown Bear (*Ursus arctos*). The Brown bear is commonly found in North and Central Asia extending all over Europe.

Coming down from the Bear house and following the path leading to the east and crossing the Serpentine Lake by the ornamental iron bridge the visitor will find an ornamental round house known as the Jhind house which has been devoted to the several kinds of seed-eating birds, such as, Pheasants, doves, pigeons, cardinals, and grass-parakeets. Past the Jheend house in front of the undulated lawn the road bifurcates. Taking the left side road the visitor will come to one of the most delightful places in the garden—

The Duck Pond.

It is a large-wire-netting aviary with its large and high covered enclosure, which was enlarged and improved a few years ago with funds provided by the

racés of African lions. Besides this pair, there are two other pairs of lions from Africa, a pair of lively and amusing lion cubs born in the Garden and the ferocious and man eating tigress (man-eater) from the Gaya District in Bengal.

The animals are fed at 5 P.M. every day and it is a sight to see their feeding and the eagerness, when the food is thrown to them. The behaviour of even the tamest among them seems to change for the moment on the scent of flesh and their excitement and impatience reach a climax when the buckets containing the food are placed near the den preparatory to distribution; they may be seen clawing at the bars, and leaping upwards in their excitement.

The Lion (*Felis leo*) It is a most magnificent and far more striking in appearance, of the whole of the cat tribe and indeed of all the carnivora animals. Its most striking feature is its splendid mane decorating the head and chest of the male, its well-shaped body and its tufted tail. The lions vary a great deal in colour and size. The lion is a true cat; it has retractile claws and the circular aperture for the pupil of the eyes. Lions are found in Africa, South-west Asia. Indian Lions are now only found in the Gir forest in Kattiwár. Lions stand captivity well and since last year they have been breeding freely in the Garden.

The Tiger (*Felis tigris*) It is also a true cat, and entirely an Asiatic animal, the largest of the living cat family. It is the most powerful and the strongest of all the carnivora animals. It is distributed throughout India, Burma, Malayan Peninsula, South Eastern Asia, Java, Sumatra, throughout China, Northern Persia into Turkistan, Central Asia and Southern Siberia. They are subjected to great variation in form and colour. They breed freely in the Garden.

The Jaguar (*Felis onca*.) It is a South American animal. It clearly resembles the Leopard and is a perfectly arboreal animal.

On the east side of the Burdwan house is the Old Mandrill House. The present inmates of this house are a beautiful full-grown Mandrill and an Anubis Baboon. By following the same path a few yards towards the south the visitor will find a solitary house for the Brown bear.

The Brown Bear (*Ursus arctos*). The Brown bear is commonly found in North and Central Asia extending all over Europe.

Coming down from the Bear house and following the path leading to the east and crossing the Serpentine Lake by the ornamental iron bridge the visitor will find an ornamental round house known as the Jhind house which has been devoted to the several kinds of seed-eating birds, such as, Pheasants, doves, pigeons, cardinals, and grass-parakeets. Past the Jheend house in front of the undulated lawn the road bifurcates. Taking the left side road the visitor will come to one of the most delightful places in the garden—

The Duck Pond.

It is a large-wire-netting aviary with its large and high covered enclosure, which was enlarged and improved a few years ago with funds provided by the

Raja of Posta in Calcutta. The birds are evidently quite at home here, as several of them, including the Scarlet Ibis from Brazil, breed every year. There is always a specimen or two of the rare Pink-headed duck which, though an Indian species, is never seen in large numbers. No visitor can miss the Stone-plover, which, with unfailing regularity follows the footsteps of every passer by in hope of food or notice. The following birds are generally housed here :—

- The Flamingo (*Phœnicopterus antiquornm.*)
- „ Black Ibis (*Inocotis papillosus.*)
- „ Glossy Ibis (*Plegadis falcinellus.*)
- „ Scarlet Ibis (*Eudocimus ruber.*)
- „ Common Heron (*Ardea cinerea.*)
- „ Large white Egret (*Harodias alba.*)
- „ Chestnut Bitterns. (*Ardetta cinnamomea.*)
- „ Cotton Teal. (*Nettapus coromandelianus.*)
- „ Comb duck. (*Sarcidiornis melanonota.*)
- „ Brahminy duck. (*Tadorna cascara.*)
- „ Sheldrake. (*Tadorna cornuta.*)
- „ Wild duck. (*Anas boscas.*)
- „ Spotted-bill duck. (*Anas pœcilorhyncha.*)
- „ Common teal. (*Querquedula crecca.*)
- „ Pintailed duck. (*Dafila acuta.*)
- „ Mandarin duck. (*Æx galericulata.*)
- „ Redheaded Pochard. (*Aythya ferina.*)
- „ Gulls. (*Larus canus.*)

The Spotted bill and Ibis. About 30 species of these birds are found all over the world, mostly in the warmer climates. The Glossy Ibis is found in both the worlds. The White Spoon-bill is also widely distributed. A familiar species in South America is the Scarlet Ibis, whose name expresses its prevailing colour.

Ducks (*Anatidæ.*) Ducks in the wide sense are web-footed, four toed water-fowls, with a straight beak, armed with teeth or ridges along the edges

of the both jaws; The three front toes are usually fully webbed; hind toe, small, neck, long. In the collection there are several geese, swans &c. and ducks. To distinguish one from the other the following points may be useful to the casual visitors.

Ducks. (<i>Anatidæ.</i>)	Geese. (<i>Anserinæ.</i>)	Swans. (<i>Cygninæ.</i>)
1. Their nostrils are always nearer the roof than the tip.	1. Nostrils about the middle of the beak.	1. Exceedingly long neck of great size and plumage is white, grey or black.
2. Neck moderately long.	2. Plumage is always plain, grey or brown with lighter edges giving it a barred appearance.	2. Space between the eyes and bill is bare in full grown birds.
3. Much smaller in size than the swans and geese. Teals are small ducks.	3. Large in size as a rule but not so big as ordinary tame Indian goose.	3. Middle toe longer than the shanks. The Mute swan may be distinguished by its front edge of the nostrill nearer to the roof of the bill, than to the tip.

The Black Swan (*Cygnus atratus*), is a most magnificent creature of Australia. Mute Swan (*Cygnus olor*) may be found somewhere in the Lake—

The Nukta or Comb Duck (*Sarcidionis melanonota*). Very big in size and is more like a goose. They have got an upright fleshy comb at the roof of the bill. They are true ducks. They build their nest on the tree. Found in India, Ceylon, Burma and Africa.

The White-winged Wood Duck (*Asarcornis scutulatus*) is more or less like the Comb duck, found in Assam, Tanaserim, Malawan Peninsula and Java.

The Brahminy Duck (*Tadorna casarca*) It is a well-known duck of India,

The Mandarin Duck (*Aix galericulata*) is most gorgeous looking bird, coming from China. The female bird is a sober coloured ordinary looking duck.

The Common Sheldrake (*Tadorna tadorna*) Its coloration is very striking. Its legs fleshy pink. The female is little paler in colour. The male has a pinky scarlet bill. The female is little paler in winter to the south. The next house is Europe and Asia and migrate in

The Schwendler House.

which has also undergone considerable alterations. There is everything there that its inhabitants may want a nice little miniature lake, in which the proud and ornate Mandarin ducks disport themselves a tiny little stream fed by clean pipe water trickling down from a little rockery, with grass plots on one side, and pebbly flats on the other. Little waders hiding in the grass look quite natural. Here the visitor must not omit to see the rare teals from Lake Baikal or the gorgeous and showy silver pheasant.

By the side of this house is a Kiosk which is occupied by a greater Bird of Paradise

Coming a few steps towards the east the visitor will reach the main road, and in the front is

The Refreshment Pavilion.

There are two other stalls where light refreshment may be procured at reasonable prices. On the south is

The Rodent house.

The rodents or order rodentia form a very numerous series of small animals and are scattered all over the world. In all the rodents the canine teeth are entirely absent and they have got one pair of powerful chisel shaped incisor teeth in each jaw. Most of the rodents use their fore paws to hold their food when eating.

Unfortunately the series of these mammals is distributed in several parts of the Garden. Squirrels, rats, mice, rabbits etc are exhibited in this house.

Exit.

The visitor who has followed the route given in the Guide has seen practically everything of interest in the Garden. Hackney carriages may generally be obtained near the main Entrance.

Those who intend leaving by tram should use the Exit turnstile which leads out of the Garden into the Orphangunge Road.