

A letter from Sir R. Temple forwarding copies of correspondence with the Commissioner of Coorg, respecting an interesting discovery of a number of ancient Cromlechs in South Coorg, was laid on the table. Also a letter from Colonel J. T. Walker, forwarding a letter from Mr. Mulheran on the crosses and Cromlechs of Chindwara district. The reading of these papers was deferred until the next monthly meeting.

The receipt of the following communications was announced.

1. Notes on rare and little known Malayan Birds by Dr. A. C. Maingay.

2. Contributions towards a Persian Lexicography, by H. Blochmann, Esq.

3. On Solar Eclipses and the total Eclipse, August 18th, 1868. By Major F. Tennant.

The chairman stated that this paper, being of great present interest, had been, by order of Council, sent to press for immediate printing.

The following paper, postponed from the last meeting, was read by the author.

Notes on Elephants, by LIEUT. JOHNSTONE, *Supdt. Kheddus, Cuttack Tributary Mehals.*

The Indian Elephant is usually supposed to be one species, differing slightly in external appearance according to the locality in which it is found.

Elephants are found in Chittagong, Burmah, Sylhet, Assam, Bhootan, Nepaul, Cuttack, Chota-Nagpore, Central Provinces, Mysore and Dehra Dhoon. Of all these places Chittagong, Jynteea and Mysore are said to produce the finest kind, and Assam the worst.

The "Elephas Indicus" has six true, and thirteen false ribs on either side; the "Elephas Sumatranus," of Borneo, Sumatra and Ceylon has fourteen false ribs, the true ribs being the same in both species. I have found elephants in the Central Provinces of the latter description. Whether the Central Province elephant is to be considered a distinct species from "Elephas Indicus," is a question to be decided by naturalists.

The African elephant differs from the Indian species in having much larger ears and a sloping forehead; both male and female have tusks, and the specimens I have seen more resemble the "Mirgahand," or very light built Indian elephants, than any other. The teeth also differ from those of the Indian elephant.

In noticing the Central Province elephant, I omitted to state that in one prominent feature, it closely resembles the Ceylon elephant, viz. in the small proportion of tuskers to "macknás" (or male elephants without tusks). The habits of all elephants are the same, and all seem equally capable of being trained for the use of man.

An elephant arrives at maturity at from 25 to 30 years of age; and I am of opinion that in their wild state the average duration of life is about 80 to 100 years, though it is *extremely difficult* to ascertain this point, and I may mention that out of a herd of 30 or 40 elephants, it is not at all uncommon to find only one really old female.

The female elephant begins to breed at about 18 years of age, and goes on breeding for 40 or 50 years, giving birth to a young one about once in 5 years: this I have ascertained from careful observation.

The period of gestation varies from 18 to 24 months.

A large proportion of males never attain a large size, but are puny and stunted, though why, I cannot understand. Of those that do attain a large size, (say 1 in 10,) the smallest are always killed or turned out of the herd by the larger ones, and this of course tends to keep up the size of the breed.

It is a remarkable fact that a dead elephant is *never* found in the jungle, and therefore I believe that when about to die they retire to the most inaccessible parts of the forest.

A female elephant suckles her young till another is born. I have seen a young one of 12 years of age, sucking.

If a young one strays from its mother, and finds her again after two or three days, the old elephant will not own it, but drive it away.

Elephants copulate in *exactly* the same manner as horses, but very rarely in confinement, though I have known two or three instances. A male elephant, captured by me on January 7th of this year, covered a female while in the stockade.

In their wild state, elephants are excessively timid, and *very* rarely attack a man even in self-defence.

The average number of a herd of elephants is about 20 or 25, they have a female at their head, who leads the way; in the cold weather

three or four herds often join together; and when a female is in heat, a male joins them, otherwise the males remain apart.

Often a large male is seen attended by three or four smaller ones.

Males, when with the herd, never help to defend the others from any outward attack, but are generally the first to run.

When rivers are dry, wild elephants often scoop out little pools in the sand in which the water remains; this I have seen *myself*, and I have lately heard of elephants damming up a stream with boulders and sand, so as to keep a good supply of water for themselves.

It is a mistake shooting elephants to prevent their devastating the crops; shooting only breaks up the herds and disperses them over a large space, thereby increasing the amount of damage done.

I may observe that though the elephants of the countries I have named, all possess distinctive features of their own, still in every country you find elephants of all kinds, thus, though the "Mirgá-band" is characteristic of Assam, nevertheless I have seen animals equal to the Jynteea kind caught in Upper Assam; I have also lately seen a Kumaon elephant exactly resembling a Chittagong one. This remark does not, however, apply to the Central Provinces, as the elephants there are all of one kind, and seem to me totally distinct from those found in any other part of the Continent of India.

Midnapore, 12th March, 1868.

Mr. Ball said:—

"During the past season when engaged in a geological examination of the hilly country which separates Manbhoom from Dhalbhoom and Singhbhoom, I have frequently, on the tops of hills and in the depths of the jungles, met with traces of wild elephants. The period of the elephants' stay in that part of the country is altogether dependent on the rice crop; and as this had been cut about a fortnight or three weeks before the time of my visit, I missed seeing the elephants themselves, but found that much might be learned of their habits from an examination of their tracks.

"The natives say that a herd of at least 30 individuals come up every year from the S. E. (Satbhoom) and, while the rice is available, spread themselves along the range of hills of which Dulma (3047 feet) is the culminating point. Thence they nightly make descents on the crops of the neighbouring villages, causing great loss to the

poor Santhal and Bhumij ryots. To prevent this loss as much as possible, watchers are set; and so soon as the elephants approach, the whole village get the alarm, and with shouting, drum-beating, and brandishing of torches, they manage to drive them off.

“In some villages, I found that the ryots, in order to save any portion of their crops, had been obliged to cut the paddy while still green. There are many deserted villages from which the inhabitants have fled in fear for their lives; one of these, which I saw, had evidently become a favourite place of resort with the elephants; foot-prints and other traces of their recent presence being abundant even inside the crumbling walls of the houses.

“Occasionally the elephants commence their depredations before sunset; close to Dulma I was told of five elephants appearing one day in the rice field at about 4 o'clock.

“On most of the hills, the elephants have made paths with a gentle ascent; and the comparative ease with which, where these existed, I was enabled to do my work, made me frequently bless them and regard them, no matter what they might be to the ryots, as at least *my* benefactors.

“During the day the elephants feed upon several jungle trees, of which the principal, as far as I could detect from the debris, are the following:—

	<i>Branches and leaves.</i>		
<i>Ficus Indica</i>	Bar, B.	}	not very common in the Jungle.
<i>religiosa</i>	Pipal, B.		
<i>racemosa.</i>			
<i>Phœnix acaulis</i>	Jangly-khejur, B.		
	<i>Bark only.</i>		
<i>Cochlospermum gossypium</i>	Gol-gol.		
<i>Shorea robusta</i>	Sál.		
<i>Bauhinia Vahlîi</i>	Chehúr.		
<i>Butea superba</i>	Palás		
	<i>Shoots and Roots.</i>		
<i>Bambusa stricta.</i>			

“Large gol-gol trees may often be seen torn up by the roots, and with the greater part of their bark stripped off: it is the only part of this tree eaten by elephants. Sál trees from four to six inches in diameter

are frequently broken off sharp at about four feet from the ground. Large bamboos seem to be crushed between the teeth just as a mere amusement, in fact, as a groom might chew a straw.

“In examining the foot-prints at the river ghâts and other places, I was much struck with the carelessness with which the wild elephants walk as compared with the domesticated animals; the latter, as is well known, try every step on doubtful ground, and if there is danger, refuse to proceed: the former seem constantly to make false steps and even venture upon recently made tank bunds which, in several cases, I noticed had given way under their weight.”

Dr. Stoliczka said—The most prominent distinctions between the African and the Indian elephant, besides the difference in the size of the ears, were the greater frontal roundness of the head and the easier slope from near the middle of the back in the former species. Lieutenant Johnstone had noticed in the Indian elephant the variation in the number of false ribs, and in the size of the ears, and it would be very interesting to notice how far the other distinctive characters were constant. There could be little doubt that several more or less constant variations among the Indian elephants may in time be traced out. And it would be very desirable further to notice how much these variations depend upon, or are caused by, local influences and conditions of climate—by food, &c., and whether these variations are hereditary. The form of the milk-teeth should also be very carefully noted, very few observations having been made in their direction.

Dr. Fayrer asked whether there was more than one species of elephants known in India, and whether any differences in the lamellæ of the molar teeth, such as were characteristic of the African elephant, had been observed.

Dr. Stoliczka said that so far as present observations went, Indian elephants have all been referred to one species, and pointed out the great difficulty which existed in making accurate observations on the teeth, after they had been much ground down by use. While the arrangement of the lamellæ will of course remain constant, variations may arise from different causes. Observations on the milk-teeth, would be much simpler and more to be depended upon. Several important distinctions have been traced out among fossil elephants by the study of these milk-teeth.

The President thought the Society would join him in thanking Lieutenant Johnstone for his brief and modest, but very suggestive notes. There were many, very many, points of interest, which few could have such opportunities of settling as Lieutenant Johnstone. The very question of the number of ribs in the Indian elephant had been open to discussion, and there were many other points of the highest interest which, he doubted not, the writer of these notes would now bear more fully in mind.

Lieutenant Johnstone would be very happy to aid to the best of his ability in carrying out any investigations concerning elephants. He would beg to suggest that some competent person would take up a question of very high importance,—he alluded to the diseases of elephants. He himself knew very little about it, while the oldest and best máhúts appeared to know even less. They were possessed of a number of empirical remedies handed down for generations, but many of which were grossly absurd. The roasted head of a dog was, for instance, considered specific in some cases. There were several attacks quite fatal to these animals, which, if properly studied, he felt convinced, could be brought under control.

In reply to a question from Mr. Atkinson, he said he never had met with a white elephant. Elephants frequently became partially light-coloured, or what was called white; he had seen one himself in Assam, which was quite piebald. This change of colour was brought on, he believed, by attacks of a kind of fever. Wild elephants never were so prettily varied in colour in this way about the trunk as those in captivity.

The President announced at the request of Colonel H. Yule, R. E. that he was engaged in the preparation of a commentary on Marco Polo; and would feel very grateful to any member who would favour him with notices tending to illustrate the localities visited by Marco Polo, or the subjects noticed by him.

Mr. Waldie gave notice that he would, at the next meeting, move the following alteration in Rule 51 of the Bye-laws.

That "the general meeting of December," be substituted for "the day of election," and that the following be inserted at the end of