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Edited by C. R. ROY, M.A., B.L.

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Government and Municipal grants not being sufficient for our purpose, it was proposed to enrol members so as to increase our funds, and a Quarterly Journal has been started. The Journal is no longer confined to articles on the Natural History of the above mentioned area, but includes those from anywhere. It is hoped that everybody will join the Society and co-operate to make the Museum and Journal a success.

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CORRIGENDA.

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PAGE	LINE	
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64	1	read "166" instead of 123.
64	8	insert "." in place of.
		and insert "In" in place of in.
64	13	read "Now" instead of New.
64	13	read "200 and 400" instead of 400 and 600.
65	15	read "en route" instead of on rute.

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Vol. XXII. No. 3.

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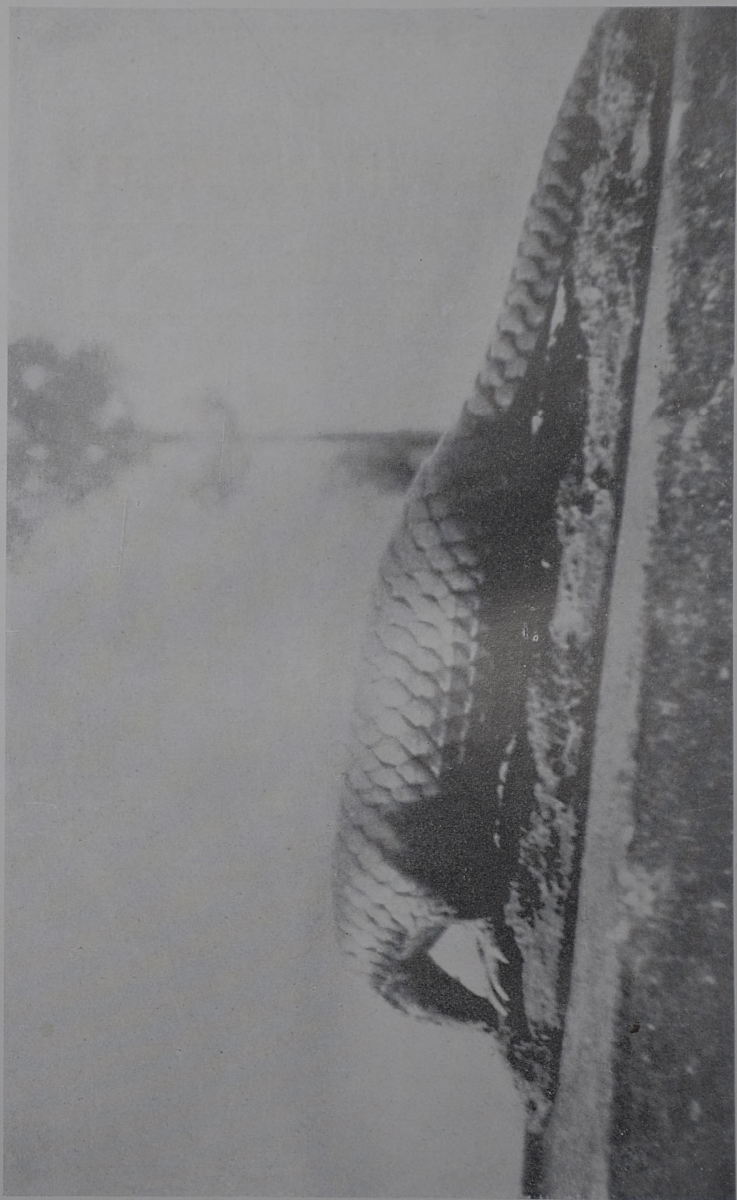


Photo C. R. Key

Indian Pangolin

JOURNAL
OF THE
BENGAL NATURAL HISTORY SOCIETY.

VOL XXIII. APRIL 1949. No. 4.

THE INDIAN PANGOLIN.

By

C. R. Roy, M. A., B. L., F. I. A. I.

(With photograph)

The Pangolin is said to be the Nature's living Tank as its body and tail are covered with armoured plates of imbricate horny scales as defensive weapons. At the approach of an enemy it curls into an armoured ball covering the head with the tail and it is very difficult to unroll it even considerable force is used and thus it is to a certain extent immune from outside attack. Once the Pangolin is in defensive position, you may strike dozens of blows with either butt or sharp end of an axe, it makes no impression on the animal. It reminds us of the armoured plated great dinosaurs Stegosaurus which became extinct about 60 million years ago.

The Pangolin is one of the strangest animals of the world. Though it is rare to be seen because of its nocturnal habits and of living in sub-terranean world by burrowing, but they are not so uncommon in all parts of India and other parts of the world. Not much fact about of this animal has been recorded and is not very popularly known. Though it is known to the people from the earliest times but its knowledge was very meagre as it can be seen from the name given in Sanskrit books as Barja Kit probably meaning it a "worm not vulnerable by thunderbolt". When it is seen in the jungles of Bengal it is called there Ban Roi, i.e. Jungle Carp due to similarity of scales of big Roi fish.

The Pangolin is neither a worm nor a fish as supposed by common people but it is a mammal belonging to the Order Edentata i. e. belonging to the group of toothless animals such as Sloths, Anteaters, and Armadillos of America, the last ones also have got armoured plates over their bodies.

The Pangolin belongs to the genus *Manis* of the Family Manidae. In India there is only one genus containing three species namely (i) The Indian Pangolin (*Manis Pentadactyla*) found in all parts of India from Sind to Bengal and from the base of the Himalayas to Cape Comorin. (ii) The Chinese Pangolin (*Manis aurita*) found in Eastern Himalayas and in the Assam Hills and (iii) The Malay Pangolin (*Manis javanica*) found in Sylhet, Tipperah and Far East.

The head of Pangolin is small, long and pointed. The mouth is also small and has got a long extensible glutenous tongue being used for capturing insects. Its eyes are small and its ears are rudimentary and its sight and hearing are apparently poor but it has got sharp sense of smell which guides the animal in seeking food. The upper part of the body, the whole tail and the outside of the limbs are covered with imbricate or overlapping horny scales. The scales are in fact hairs or spines of the body enormously enlarged and flattened. The lower surface of the body, sides of head and inner surface of the limbs are scaleless, scantily covered with hairs and there a few coarse hairs between the scales which can be seen from outside. All the five toes bear slightly curved claws those on the fore feet being longer than those of the hind feet. The third claw is the longest on all feet.

The Pangolin has no tooth and this deterioration of the dentition is probably due to its non-use as the Pangolin entirely lives on soft bodied ants and termites. It is a Nature's warning to those who wish to keep their teeth strong not to take soft food. Apart from ants and termites, it also relishes eggs of ants and termites but it does not touch red ants. The peculiar way it grubs its meal is very interesting as it licks with its protruding glutenous tongue the ants and termites which stick to it. When termite mounds are found it tears a breach in the mound with its claws and thrusts its head into it reaching the buried comblike nests

where swarms of eggs and adults generally reside and then rapidly swallows them by the help of the tongue. It is very amazing that a creature weighing about 20 to 40 lbs and measuring about 4 ft in length maintains itself only from these tiny insects. The number of its feed must be considerable.

The Pangolin lives in burrows. With their fore feet which are furnished with blunt claws, it digs the earth with fore legs and with the help of the hind legs, it throws the debris behind by violent kicks. The Pangolins dig burrows even upto a depth of 20. ft or more but generally upto 8 ft to 10 feet underground with circular chambers at the ends of them which are about 2 ft in diameter. They close the entrance of the burrows with earth when they are inside. They live in pairs with one or two, young ones. They sleep in the chamber by curling the body and covering the head with tail.

Though the Pangolins are territorial in habits they often climb trees in search of food and they climb like bears by strongly gripping the branches with their fore limbs and also with their tails which are prehensile. This is the only animal in India with prehensile tail except a bear cat.

The breeding habits of the Pangolin are not thoroughly known. It generally breeds one or two young ones from January to March but there appears to be not definite time of breeding. The young one sucks milk from the two pectoral mammae of its mother. When young its scales are soft. Mother carried the baby Pangolin on its raised tail placing it across. When alarmed the mother curls up and covers the young one in the ventral part of the body. The Pangolin walks slowly lifting its tail and when walking its gait remains curved in the middle of the back. When it wants to see far beyond it stands on its hind legs with the forepart protruding forward.

It has been reported that the horny scales of Pangolin are made into finger rings and buckles by professional men in Jagdalpur and other villages in Baster State, and sold to patients suffering from rheumatism: These scales are now found in many quakers shop in many towns of India.

Many curious stories are prevalent among the aboriginal tribes. They believe that when a Samber comes across a Pangolin

it rears up on its hind legs and the same time rolls itself into a ball and then Samber comes down with all its weights on the back of the Pangolin and delivers blows after blows until the Samber succeeds in dislodging a couple of bony scales which the Samber picks up and swallows. It appears that there is some truth in the story as the movements and general habits of Pangolin are practically the same though the trampling of the Samber may be a chance occurrence.

The general features of all the three species of Pangolin found in India are practically the same with slight variations and they can be distinguished by the following characters.

Indian Pangolin—*Manis pantidactyla*—Fore claws are about double the length of the hind claws. Body and tail stout. Scales of the body large none keeled in adults. There are 11 to 13 longitudinal rows of scales round the body and 14 to 17 in the median row above the tail. Colour of the scales is light yellowish brown, naked skin flesh colour. Head and body is about 23 to 24 inches and tail about 22 to 23 inches. Weight is about 20 to 42 lbs. (Ref. F. B. I. Mamalia Blanf. p597.)

The Chinese Pangolin—*Manis aurata*—Body and tail more slender and scales smaller. Scales without keel or 3 or 4 outer rows on body keeled. Longitudinal rows 16 to 18 in the body and 16 to 20 in the tail. Head and body 19 to 23 inches tail 13 to 15 inches. Weight about 15 to 17 lbs. Colour of scales dark brown.

The Malay Pangolin—*Manis javanica*—More slender than the other two species. Fore claws but little longer than the hind claws. Scales longer and more pointed behind, the posterior edges chipped and with a median keel specially on the tail, sides and limbs. 15 to 19 rows round the body and 20 to 30 scales in the median row of the tail. Colour of the scales dark brown with terminal portion of the tail whitish. Naked skin whitish. Head and body about 20.5 inches tail about 20 inches.

The photograph of the Pangolin given here is that of Indian Pangolin *Manis pantidactyla* which has been caught at Tukvar, Darjeeling at an elevation of 4000 ft. Blandford remarked that Indian Pangolin are not found in any part of the Himalayas, but atleast it can be found in Eastern Himalayas at the elevation of 4000 ft.

OBSERVATIONS ON CAPT. BAILLIE'S HAZARIBAGH
BIRD RECORDINGS

By

S. C. LAW, M. A., Ph. D., F. N. I.

(Continued from Vol. XXIII. Page 44)

ÆGYPTIDÆ. Capt. Baillie records three species—*Sarcogyps calvus*, *Pseudogyps bengalensis* and *Neophron p. ginginianus* as common, and mentions *Gyps indicus nudiceps* as not as common as *Sarcogyps calvus* and *Pseudogyps bengalensis*. These three species of Vultures are no doubt commonly noticed all over the district, but it does not necessarily follow that a species which is never abundant cannot be dubbed common. And the fact of its being common in an area does not depend on the relative abundance or otherwise of the species. Take the case of *Sarcogyps calvus*. By habit it is never gregarious; it is non-colonial and lives singly or in pairs, being nowhere found in large numbers. Nevertheless it is quite common in Hazaribagh and very well distributed throughout the district. *Pseudogyps bengalensis* congregates in immense numbers near towns and villages and naturally attracts notice more than others. But this is no reason why one should take it by virtue of its numbers alone as more common than, say, *Sarcogyps calvus* or *Gyps indicus*. The latter is also found to collect in numbers near villages, particularly over carcasses. *Neophron p. ginginianus*, never occurring in multitudes, is nevertheless extremely common about the haunts of man. In Suriya (Hazaribagh Road) one can view the species all times of the day pacing along the rocky ground or scavenging within a few yards of the village hamlets. Between April 20 and 28, 1945 I observed a pair *in copula* on two or three occasions,—there was hardly any ceremony in this act; the male bird, which was a few minutes before on the ground, flew upto the female, standing on top of a compound-wall and at once jumped on her back. *Gyps fulvus fulvescens* is not uncommon in Hazaribagh, being noticed in some numbers, which bespeaks its gregarious habit. Baillie mentions it, however, as an occasional cold weather visitor to the district.

FALCONIDÆ. Many Raptorial species abound in the district, which due to its peculiar diversified features provides

them with a happy hunting ground. It is worthy of note that just as the comparatively arid, open and rocky parts of the country harbour quite a legion of them, there are other species or races which haunt the well-wooded and well-watered tracts. It is equally remarkable that among the species frequenting either kind of country good many are noticeable in winter as cold weather visitors; but these have their counterparts in allied species or subspecies, which are residents and more or less found all the year round. *Falco peregrinus* and *F. jugger* occur sparingly in the district; the former, when observed in winter, is evidently in most instances subspecies *calidus* as distinguished from the Shahin (subspecies *peregrinator*) which is resident like *F. Jugger*. *F. subbutteo* is a winter migrant affecting well-wooded parts, while *F. C. chiquera*, a resident form, is characteristically a bird of the open, undulating country—easily recognizable by its chestnut head and neck and bluish ashy upper parts. I once (April 22, 1945) observed it chasing and attempting to swiftly pounce upon Bush-Larks (*Mirafra erythroptera*) feeding on waste land in Suriya (Hazaribagh Road). *Cerchneis tinnunculus* is quite common in winter, and the specimens collected by me in two instances, viz. 29-10-26 and 17-10-27, are referable to the typical race. Capt. Baillie, however, mentions the Himalayan Kestrel, which is a resident subspecies in the hills but migrates locally in winter to the plains of Northern India. *Aquila rapax vindhiana* appears to be resident and one may find it breeding in November and December. *A. clanga* is sometimes noticed in winter in wooded parts near water. *A. pomarina hastata* is no doubt resident. The status and distribution of *Ictinaetus malayensis perniger* in Hazaribagh is rather obscure. *Limnaetops cirrhatius* is not entirely absent in the forests. *Circus gallicus* not uncommonly haunts open, cultivated tracts, where it may be seen beating over the ground in search of prey like a Harrier. *Hematornis cheela* is found as a resident species, while *Butastur teesa*, also a resident bird, is given to local movements evincing a bias for open country with low scrub and cultivation near water or streams. In Suriya (Hazaribagh Road) I came across this species several times in March 1947 on the edge of inundated paddy fields from which the crop had been cut, and even on the bank of the river Barakar

sluggishly looking for its prey and sometimes keeping to the same spot for hours together. *Haliastur i. indus* and *Milvus migrans govinda* are common, resident and well-distributed throughout the district. I have no record of *Milvus m. lineatus* being ever observed in Hazaribagh, though Ball (*S. F.*, II, 381) obtained it in the adjoining district of Ranchi. *Circus macrourus*, *C. pygargus*, *C. c. cyaneus* and *C. melanoleucus* are pretty common from October to end of March, *C. aeruginosus* is also common at this time around water-logged cultivation. *Astur badius dussumieri*, a resident bird, is most common and widely distributed; the bird in flight soaring over rather open tracts often comes to notice, but it is no less a familiar sight when under cover of foliage the bird moves nimbly from one branch to another for position of vantage in order to tackle a tough prey like a lizard clinging to the tree-trunk. It was on July 20, 1944 in Suriya I came across such a sight. There is no record of the distribution of *Accipiter nisus* in the district, but the occurrence of *Accipiter Virgatus affinis* is likely. I, however, collected the species on November 5, 1931 from Ranchi. *Pernis p. tilorhynchus ruficollis* occurs sparingly in suitable localities in the district.

COLUMBIDÆ. *Crocopus p. phenicopterus* is very common, noticed in parties—small or large—throughout the district. It is interesting to watch them just before dusk collecting for roosting in many a large tree standing along the motor route from Bagodar to Hazaribagh town. I found it also in light *Sal* (*Shorea robusta*) jungles in Suriya and even solitary individuals frequenting Eucalyptus trees in human abode. *Dendrophassa b. bicincta* is rare and occurs very sparingly. *Chalcophaps i. indica* appears to haunt *Sal* jungles and solitary birds not unoften come to notice flying past swiftly. In Suriya (Hazaribagh Road) too I met with one or two examples making way through scattered forests lying on the bank of the river Barakar. *Columba livia intermedia* is common and noticed in parties in village fields. *Streptopelia orientalis* occurs in the wooded parts of Hazaribagh and the specimen obtained by me on 11-11-26 is referable to subspecies *meena*. It is not found around villages or in gardens like *S. chinensis suratensis* and *S. senegalensis cambayensis*, which, however, are not exclusive in their choice of habitat, affecting as they

do the scrub jungles and afforested tracts as much as open cultivation and human habitation. *Streptopelia d. decaocto* likewise frequents open cultivated country, villages and gardens as well as scrub and deciduous jungle of Hazaribagh. In Suriya I found on April 26, 1945 this species actively engaged in nesting in trees on waste lands in close proximity of Crow's nests. A remarkable instance of its boldness attracted my attention. It was in its nest when a Grey Hornbill (*toekus birostris*) sweeping over the rolling scene suddenly came to perch on a branch of the tree. The Dove did not hesitate to give it a chase, the Crows following suit with the result that it was driven away in no time. *Enopopelia t. tranquebarica* has, however, wilder habits and is noticed in Suriya to keep to light *Sal* jungles, where it is common but never abundant.

PTEROCLIDÆ. Curiously enough Capt. Baillie makes no mention of any member of this family. *Pterocles indicus* occurring in small flocks is pretty common in winter; it, however, appears to be a resident species. While staying at Suriya (Hazaribagh Road) I came across on July 20, 1944 a party of 3 or 4 birds among cultivation of pulses in a remote village lying on the north-east of Dhanwar Road. On September 20, 1947 I flushed three birds under *Palás* (*Butea frondosa*) bush in Suriya, which flying low dropped down at a short distance and sat close in a hollow (water-channel) of a rocky *bund*, dividing paddy fields, under the shade of a tall *Palás* tree. Soon after when they came out to feed among the grass growing on or near the edge of the hollow, I succeeded in shooting one ♂ of the three birds among which was observed a juvenile. *Pterocles exustus erlangeri* is noticed in winter in flocks in open waste land dotted with bushes and scrub.

PHASIANIDÆ. *Pavo cristatus*, formerly so numerous in the hilly jungles, has become rather scarce and less numerous due to destruction and shrinkage of forest during the War. *Gallus bankiva murghi* appears to be not so much affected and is even in the postwar period pretty common in all types of forests. *Galloperdix lunulata* is the only species of Spur-Fowl found in Hazaribagh. I have found sometimes trapped specimens of the species brought by the aborigines to the city market for

sale. I can even recall an occasion when one such bird—a female—was purchased for me as a mate for a cock bird, which I had living in my aviary. The result of such mating was no doubt successful and several young were born. It is of interest to note that the species takes to captivity quite readily and soon becomes tame and confiding. The normal clutch of eggs laid in aviary is three, though sometimes more are laid. *Coturnix c. coturnix* is found in winter in cultivated lands and grassy ground. *Pedicularia a. asiatica* appears to be resident in the district. On November 4, 1926 I encountered a party of five such birds with two young, out of which one was bagged. Its favourite resort in Suriya is rocky waste covered with scrub and bush, where I came across and even flushed it on several occasions (July, 1944; April, 1945). Both *Francolinus f. asia* and *Francolinus pondicerianus interpositus* occur in the district; the former affecting wilder situations and rocky jungles, while the latter are quite common alike in jungle tracts and cultivated areas and are found in the close vicinity of villages. They are resident birds. During my stay at Suriya I found several young ones of the Grey Partridge (*F. p. interpositus*) having been collected in early July and kept in improvised cages by the village cow boys. I can also recall an instance at this time of a male Black Partridge (*F. f. asia*) in perfect breeding condition, seated on a bare branch of a tree on the top of a hillock, uttering a series of cheery and almost musical calls.

TURNICIDÆ. *Turnix suscitator taigoor* is not uncommonly noticed amongst scrub and grass contiguous to light deciduous forests of Hazaribagh. *Turnix dussumieri*, occurring in abundance according to Beavan near Parisnath, is seldom found, except perhaps as a straggler or wanderer during the rains, when it is not too hot for the bird.

(To be continued)

BOTANISING IN EASTERN SIKKIM.

By

B. N. GHOSH.

Dr. S. C. LAW, Ph. D., F. Z. S., etc., started for Sikkim Himalaya to collect and study birds. He was accompanied by Mr. Sain the famous artist of Darjeeling and I was invited by Dr. Law to join his party. To students of botany Sikkim presents an extremely interesting flora and I immediately made up my mind not to miss the opportunity afforded. Early on Sunday the 3rd. June I started for Tista. Late in the afternoon of that day I joined Dr. Law at Gangtok Dakbungalow, my journey having been hampered by torrential rain at Rangpo. Gangtok is the capital of Sikkim State admirably situated on a high ridge at an elevation of 5800'.

The following day I accompanied Dr. Law in his bird catching excursion. I studied the local flora round about Gangtok. Several species of *Michelia*, *Quercus*, *Edgeworthia*, *Gardneri*, *Caladium* with dark brown leaves, the birds nest fern *Avis nidus*, *Alnus nepalensis*. Bomoos of several kinds were conspicuous. Mr. Sain took fancy to a group of boulders perhaps deposited by a land slide and painted it beautifully and accurately. In the evening we were all confined in the Bungalow for the rain broke in with unparalleled severity accompanied by storm.

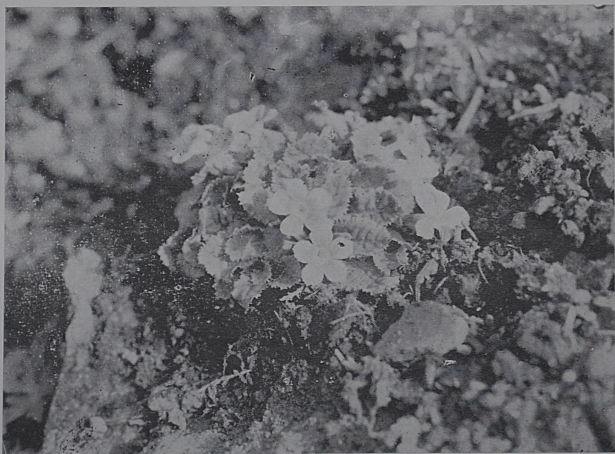
The rains ceased next morning and the mist cleared, riding ponies, mules and porters to carry our bedding, food supplies were rapidly arranged and by 10 A. M. we marched off to Karponang.

I wish to record here our indebtedness to the State Engineer, Rai Bahadur Fakir Chand Jali for his unfailing courtesy, the facilities afforded and for the many kindness we received at his hands.

From Gangtok a good road leads uphill through primeaval forests to Karponang. The vegetation consists chiefly of *Rhododendrons*, *Magnolias*, *Michelias*, *Didimocarpus*, *Meconopsis villosa*, *Rosa sericea*, *Lycesteria*, *Geranium*, Bamboos of kinds *Ariseama*



Rhododendron Falconeri



Primula winteri

Griffithii. The road has been cut with considerable difficulty and great ingenuity. The valley is wild and very steep unpopulated and unfit for cultivation.

In the afternoon we reached Karponang Bungalow which is situated on a steep slope, once overgrown with bamboos, now bare. The place is one of the wettest in the Himalayas and exposed to the full force of monsoon rains nicknamed by Rai Bahadur Fakir Chand as the Cherapunji of Sikkim. It received a yearly rainfall of 240 inches. It began to rain as soon as we arrived the Bungalow.

Next day (6th. June) we proceeded to Changu. The road is uphill running through a narrowing valley. It has been cut out of cliffs, high above the roaring streams and fenced-in in some places. We had not travelled more than 2 miles when we were accosted by a host of *Primula vaginata* and *P. geraniifolia* in flower, growing over damp mossy rocks. A few tall *Rhododendrons* were still in flower. The entrance to the Laghep La (pass) is marked by a shallow lake dry in winter. Many plants were springing up amongst grass. Dr. Law drew my attention to a *Primula* in flower, which on examination proved to be *P. Tanneri*. I observed another *primula* in habit very much like a *P. petiolaris*, but as it bore neither fruits nor flowers I could not determine what it was. Various dwarf *Rhododendrons* with scarlet, pink and mauve colours the dark blue *Iris Clarkii* and *primulas* were growing here in such profusion and so beautifully arranged that I could hardly persuade myself to believe that human hands were not responsible for this. Some distance from Laghep La we came across a stream urging its turbulent course. Its bed is cumbered all over with blocks of stones and many fine grained granite apparently transported from higher levels. The sheltered position of this place favours the growth of large pine trees, which were festooned with long gray streamers of Lichens. I am told that the Bhutias eat this lichen when reduced to great straits. It is nourishing and life sustaining as meat. In Iceland also a Danish Lady told me Lichens are eaten boiled and a kind of colour is also extracted. Here we rested a while for our midday meal. We washed our hands in the flowing water which, we noticed, to be icy cold.

The ground rapidly rises from here and we zig-zag up the flank of this beautiful valley, passing flocks of yaks grazing in the fields which Mr. Sain cinematographed. The valley was full of *Iris Clarkii* studded all over with *Ariseama Griffithii* (whose flowers much resemble the fanged head of the dreaded cobra), *Anemone trullifolia*, *meconopsis simplicifolia*, *Trollius* etc. On and up we go our roads meandering through rocks scattered all over the ground; further on the whole surface of the hill is covered with a confused mass of glacier deposited boulders of gigantic forms still bare and free from any vegetable growth, till we reach the end of the valley when suddenly comes to our view the sight of a magnificent lake at 12,000' feet elevation. At its farthest end stands Changu Bungalow 12,600'. The road to the Bungalow runs along the right bank. On the side opposite a lofty hill rises clothed with dwarf *Rhododendrons* properly covered with clinging flowers of varied colours which sheds its shadow and darkens half of the water of the lake. The lake lies in a hollow, girt by irregular ridges which rises to 15,000'. The spurs on the western flank overlooking the Ailuchu Valley are precipitous, rocky and sterile, supporting some *Rhododendron* bushes and herbaceous vegetation only in sheltered positions. Every mountain mass in this region facing the southerly direction is exposed to the full force of the southerly winds laden with mist which blow here with great violence. This continuous currents deposit in Summer rain and in winter snow which on account of steepness of the mountains fall in great force like avalanches, thus rapidly disintegrating the surface of the ridges, washing down the little quantity of earth resting over them and wearing away rocks which becomes precipices or crags of fantastic shapes. The slopes to the north is also rocky and barren exposed as it is to the full force of the rains. The snow lies here and on the Yak La longer and melts slowly and thus the cold condition combine to give the flora here a short growing season. The coarse meadow below is studded with yellow flowering *Potentillas*, a white flowering *Rubus*, several *Saussaurea* species with barbed leaves, *Primulas* with purple flowers, a white flowering *Cardamine*, the yellow *Meconopsis villosa*, *Meconopsis Wallichii*, *M. paniculata*, *M. simplicifolia* (with light blue flowers) *Primula oblique*, *P. Calderiana* *Trollius*, *Allium* not yet in flower, *Lloydia serotina*

with their nodding yellow bell shaped flowers, *Rhume nobile* standing like giants amidst rocks, the beautiful flesh coloured *Podophyllum emodi* and *Morina Betonocoides* with its attractive red flowers. *Saxifraga*, *purpurescens* with purple flowers, a dwarf *Dalphinium* with dark blue flowers, many labiates and composites, *Pedicularis* with finely cut fern like leaves, *Leontopodium* (the Edelwise of the Alps in search of which many have lost their lives) *Arenaria*, *Clematis Montana* climbing over bushes, *Meconopsis simplicifolia* nestling under *Iris* were observed.

The slopes above are in most places abundantly covered with *Rhododendrons* in flowers of most gorgeous hue. I observed for miles and miles *Rhododendron campanulatum*, *R. Thomsonii*, *R. vacciniodes* still in their glory. Those who have seen the *Rhododendrons* in their full bloom here say that it surpasses *Sandakphu* in the beauty of their flowers. The sight is so grand that one can hardly forget it.

The *Primulas* are as famous as *Rhododendrons* and we saw hosts of *P. Sikkimensis* growing in shallow streams and nodding their yellow flowers in a most fantastic fashion.

The tall *Gentiana stylophora*, *Swertia Hookeri*, *Rhume nobile* appear at 13,500'. A large species of *Senecio*, *Gentiana*, *Ariseama Griffithii* and *Primula* were very conspicuous amongst masses of *Iris Clarkii*. The latter bore very dark blue flowers far more beautiful than her pale blue sister of *Tongloo*. Here trees occurred in sheltered places. Just above and below the lake were forests of *Abies Webbiana* growing amongst boulders and dwarf *Rhododendrons*. Unfortunately many of the trees were dead and these naked giants are tottering to decay. There are no trees here to rival the *Abies* in height or girth. Though *Acer*, *Prunus*, *Viburnums* abound, they are all in stunted form, and are unable to reach the usual height owing to the inclement weather.

The land beyond *Changu* is swampy and covered with *Rhododendrons* and *Primulas*. The ridge above *Yak La* is steep and partly covered with snow; its black barren crags of foliated gneiss present a most forbidding appearance. We observed large thickets of *Berberis*, not yet in leaf and various *Primulas* growing

in the verge of water courses. Above 13,000' the most notable plants are *Meconopsis paniculata* and a species of *Fragaria* with narrow oblong fruits. The Bhutia Coolies cut the young stems of *Meconopsis*, peel off the thick shaggy stems and eat them raw. *Allium Wallichii* is abundant and is largely consumed by the porters as pot herb, as an antidote against the effect of high altitude. Various species of *Sedum* were common in the clefts of rocks, big boulders were covered with a thin *Polygonum*, as also *Swertia Hookeri* with brown leaves and flowers growing together in whorls; *Rhododendron anthopogon* which when trodden upon exhale a powerful smell of incense.

The Orchid family is sparsely represented by *Satyrium*, *Habenaria* and *Orchis Chusua*. The latter was in flower and we dug a few specimen. They are all herbaceous on perennial roots—they shed their leaves and stems at the advent of winter and hibernate underneath the blanket of snow during the long and severe winter.

THE STORY OF MY BULBULS

By

COL. H. S. WOOD, I. M. S. (*Retd.*)

During my lifetime I have kept all sorts of pets, but none have appealed so much to me as Bulbuls. They make the most affectionate and devoted pets, and once you have gained their confidence you can do anything with them. Their mentality is very interesting, almost human in its nature.

Of the many varieties I have only kept the Persian, the Bengal and the Red-eared Bulbul. The last-named gets tame up to a certain point, but as adult plumage approaches they get restless, the call of the wild is strong and one day the bird disappears. The Persian variety is the one most easily tamed and readily responds to captivity.

Bulbul should be taken from the nest when nearly fledged and fed on ripe peepul berries and biscuit soaked in milk or

water; I always used the thin Arrowroot biscuits for my Bulbuls. The usual food given is suttoo, made from parched gram; but do not give them suttoo as purchased in the Bazaar, because the seeds of the Kesari dal often get mixed up with the gram and this will produce paralysis. It is best to purchase the parched gram, pick out the gram seeds carefully, remove the husk and place in a wide-mouthed bottle. The quantity required for say a week should be finely ground and stored in another glass bottle. Be careful that this food does not get damp or mouldy, especially during the monsoon. As the bird grows up fruits of all kinds may be given, especially plantains, which they prefer to any others. Of course insect food is necessary and I always kept a stock of meal worms; all are eagerly devoured; blue bottles ordinary flies and a few grasshoppers can be given but only the bodies of the latter as the hard part are apt to produce dysentery. Moths of all kinds, except those that have a bad smell are liked; but the insect the Bulbul likes best is the mole cricket. Cuttlefish bone must be provided and of course a bath, an oblong one, for preference, and it is best to let the bird have its bath when you release it from the cage. You will never get a Bulbul really tame if you keep it in an aviary; it must have freedom and exercise; Every day, after shutting all doors and windows, I released it and if the cage was held near it at the end of the time, the bird returned to it. I trained my Bulbuls to enter at word of command; when I said "Go to your cage, go to your cage," the bird entered it. Don't leave a basin of water in the room; I lost one of my birds from drowning that way; it couldn't get out once it had got in.

The cage, perches etc. must be kept scrupulously clean. All my cages had sliding trays on the floor and twice a day folded paper was placed on it; sand is recommended, but this is apt to make the feet sore. The perches must be wiped daily with a moist cloth and once a week the whole cage washed with a diluted solution of Potassium Permanganate. The water vessel is apt to collect a gelatinous material and must be thoroughly washed every day in warm water. When putting away the cage for the night, remove all food but leave the water, as Bulbuls are thirsty little mortals. Then for the cold winters, or travelling, a cover

of some kind must be provided ; it must also be put on at night as birds cannot sleep in a bright light.

Bulbuls are very fond of looking-glasses, they never tire of admiring themselves in it, so a round shaving mirror on the dressing table is recommended. They are, also, like Magpies and Jackdaws, fond of carrying away any bright object, so look out for your collar studs, rings and tie pins. One of my birds used to sit beside my purse and would immediately seize a coin and fly away, returning for another.

In India the cages must be secure from rats, therefore it is a good plan to hang a stout wire from the ceiling with a hook on the end whereon to hang the cage ; I have had many of my bird pets killed by rats ; to avoid the rat danger always have a wire cage, as a rat will gnaw through a bamboo one in a few minutes. Put the cage in a moderate sun for a little while as Bulbuls enjoy the sun and it is a pretty sight to watch a Bulbul sunning itself, feathers all fluffed up, lying on its side, with beak partly open and head held sideways looking up at the orb which is giving it so much pleasure.

During moulting, which in my Bulbuls usually occurred in the autumn, one must be specially careful of avoiding damp and cold, and insect food is absolutely necessary. I forgot to say that Bulbuls are very fond of grape-juice, milk and sweet orange-juice ; they hate anything acid. The Persian Bulbul, in Mesopotamia, feeds almost wholly on dates, as there is a great dearth of insect life ; my Bengal Bulbuls were fond of these too.

Bulbuls live to a comparatively good old age ; one I had lived $7\frac{1}{2}$ years. My Bengal Bulbul which unfortunately, died recently due to an accident, was with us for 13 years, and a friend of mine has one now that is 15 years of age.

In the process of moulting the wing feathers first drop, then the tail ; after this the head and neck, and, lastly, the body feathers ; the bird eats up all the scales that come off from the growing feathers. The moulting is rather slow as compared with other birds. I have a Red Cardinal bird now while completed his moult in a month, except the head.

In the spring, females, especially, are apt to get restless, as they think of making a nest and producing their kind, and it is best to provide them with strips of paper and strands of wool with which to amuse themselves. In captivity 4 eggs are, usually, laid, but one of mine laid 8. They are beautiful objects, white with chocolate coloured blotches; the broad end of the egg is, sometimes, almost wholly that colour.

I will now proceed to give the story of my Bulbuls:—

1. "Jacky" was born in a honey-suckle creeper that climbed over the wall of our Bungalow at Sipsagan. Only two eggs were hatched, one of the fledglings was taken away by a crow, so we took Jacky out and brought him up mostly on Peepul berries. He was a sprightly little chap, full of the *joie de vivre*. After being fed, he would give several leaps in the air.

We nearly lost Jacky once in Calcutta. We were stopping at the Great Eastern Hotel, and in the evening my wife and I went to a cinema; on our return we heard a great fluttering in the cage and on removing the cover a rat was found inside, and Jacky dashing madly about to avoid it. We were just in time to rescue the little bird but unfortunately, the rat escaped; it had pulled all the birds tail feathers out. We put Jacky into a cage with a Female Persian Bulbul, and they became very fond of each other. Their nest-building operations commenced and we supplied strips of paper and strands of wool; only the female built the nest, the other superintended. When the nest did not meet with his approval he pounced on it and tore it to pieces; we then, supplied a circular wire receptacle, which met with the same result. At last the female laid an egg whilst on her perch, it was her first egg and she got rather frightened on seeing it.

Before leaving for England I left my three Bulbuls, including Bobby the Persian Bulbul and another one called Boosten, with my mother in Bangalore; but she moved shortly afterwards to Dera and the Persian Bulbul died there so my mother gave the other two to an Assistant Surgeon. He died and I do not know what happened to the two sorrowing ones. Bobby's body was

embalmed and kept until my return from England, when the body was sent to our house in Haflong, where I buried her under an orchid-covered tree in our compound.

2. "Boosten" was a curious little Bulbul. He was an example of prelanisin, jet black all over, except the patch under the tail which was darker than in normal Bubluls. He was a regular tartar, never made friends but bullied the rest and knocked them off whenever they happened to sidleg up with reuffed out feathers. He was a regular comic and very amusing.

3. "Bobby" a Persian Bulbul, I got when on field service in Mesopotamia. She was born in an orange tree in our garden. I took her from the nest when very young, and as I had not the time to feed her, I made her over to my carpenter, but after a while I kept her in my room and for two years she was a devoted and affectionate companion. I had no cage, so she had the run of my room. One of the coloured panes of glass was broken so I stuffed some paper into it ; but while I was not there she dragged the paper out and escaped ; I and all the hospital staff searched for her, but at night-fall no Bobby had appeared. Before going to bed I thought I would have a look out of the window, and there she was, sitting on one of the struts of the blind ; How she knew that was my room was very clever of her, of course I was overjoyed. Another day I stupidly forgot to switch off my large electric fan, and on my return I found poor Bobby gasping on the floor. I dashed cold water on her and gave her a little brandy and water which seemed to revive her, but I saw that one of her eyes was injured. I applied fomentations and lotions, but in spite of this the sight of the eye was lost. She never struggled whilst I applied the medicines, and seemed to know that I was trying to relieve her pain.

Rats were very numerous in Mesopotamia so I hung an old forage cap on the wall and into this I put my bird every night, and as morning came she flew out. It was a thirsty place too, so I kept a canvas bucket in my room, filled with ice and some ginger-beer bottles when I got up at night to quench my thirst, as soon as I had pushed down the glass stipper, out would come Bobby's head as much as to say "I want a drink too !", so I gave

her some and then she retired inside the cap for the rest of the night. In the winter months when the mornings were very cold she came into my bed for warmth and went to sleep on my shoulders. I had three electric fans going to keep away attacks from sand-flies and also a Blue carpet in my room. The hurricane from the three fans drove down hundreds of sand-flies on to the carpet, and it was Bobby's delight to eat them; I once counted 241 which she had eaten; so the Bulbul is a useful bird in these sand-fly ridden regions.

Before I left Mesopotamia I got another Bulbul to keep Bobby company, but at Quetta a drunken servant trod on it and killed it. He told a lie about it and hid himself under a coverlet, so I got him out and gave him a good hiding, which I hope he long remembered.

How glad Bobby was to see me return to my rooms! She danced, fluttering her wings and opening and shutting her orange coloured throat, with tongue thrust to one side showing all the signs of joy at seeing me.

Bobby was with us nine months at Quetta and went through the Bhotan Pass as far as Lorelai. I can see her now in that arid and Godforsaken place simply panting with the heat. We took her back to Assam when I reverted to Civil duty there. On my retirement my wife and I came to England, leaving my beloved pets with my mother, and I never saw my loving companion again, and grieved for her loss. She was the best companion mortal man could wish to have, deep affection and devotion were her characteristics.

4. My last story is of "Tootee", a Bengal Bulbul, which has a very sad ending, as my readers will hear. A picture painted by my great friend Mr. C. M. Inglis (our editor) of her, appears as frontispiece of my book "Glimpses of the Wild" in which some of her history is given. But I now give it in more detail as her life is so interesting to bird lovers.

As a prelude I may say that I am writing, or have written, a third book of my memoirs. By the irony of fate, just as I had finished writing these memoirs, and, before the *Finis*, had quoted

the following lines from A. C. Swinburne's "Atalanta in Calydon", for which I have to thank Messrs. Heinmann & Co., the publishers, for permission: "Live thou and take thy fill of days and die when thy day comes, and make not much of death, least on thy day thou reap an evil thing..." the tragedy occurred. As I was putting the typed manuscript away in a drawer, I did not notice our little bird, who had come to see what I was doing. I took a step and felt something soft under it. I removed my foot immediately, but the poor bird flopped a few feet away. I took her in my hand, but she died almost at once. Her spirit had fled and her last journey was completed. What made the tragedy worse was that I, who would have been the last to injure one of her feathers, should have been the cause of her death. My wife and I were stricken with grief, we wept bitter tears and I am sure those who have had a devoted dog, cat or bird would have sympathized with us. We could not have lavished more care and affection on a child. Only time, the healer of all grief, will lessen our anguish.

What I am about to relate is perfectly true, and makes one inclined to believe in spiritualism. Every night, when I put my hand over my eyes, I can see the head and eyes of our pet, the eyelids gradually closing in sleep as they used to do when I took her into my hand; the vision only lasts a few seconds. I also, had a dream in which I saw her flying away from me but she turned back and returned to her master.

It was a sad business embalming her body, at Cannes, where she died. I have put it in a box, and every day I place flowers on it. That box will always accompany us until our day comes, when our ashes will rest in the Memorial Bird Pool, which I have had constructed in Selsden Wood, Sanderstead, Surrey. Here we shall be happy amongst the Blue bells, primroses, and creatures of the wild.

Tootee's history is so interesting that I give a short resume:—

She was born on the 6th of August 1926 and died on the 20th February 1939, almost 13 years, a good age for a small bird. She was born in a Bougainvillea which grew on an archway at

Haflong station, Assam. A woman who lived close by took the young ones, Tootee and her brothers one day, when returning from town, we saw two wretched-looking fledglings in her hut in a very dirty cage. We took pity on them and I gave six pence for the couple.

Both birds slept on top of a cage just outside the mosquito curtain in our bedroom. Waking up one morning, we saw there was only one. I suspected a rat had taken the other, and sure enough, on looking behind some boxes in my dressing room, I found the mangled body. I baited a gin-trap with the remains and caught the murderer. At that time we had two other Bulbuls and Tootee grew up with them. Of an evening we let them loose on our lawn, but as soon as dusk set in they hopped towards us and sought shelter in parts of our clothing. One evening Tootee wandered away, then we heard her screaming and I was just in time to rescue her from a Butcher bird. Her wing was raw and bleeding but soon healed. The feathers never grew on the injured part. When I purchased her one hind claw was dislocated forward and for several years the foot swelled and pieces of bone worked out. She was so good when I dressed it, not a struggle to get away.

Tootee had travelled throughout the length and breadth of India, since we came back for good to England she has travelled with us through most parts of France, Italy, Germany, Austria, Switzerland, Corsica, the Bolearics and Southern England. She must have crossed the English Channel 24 times. People wondered how we could be bothered with a bird, but I always told them that she gave less trouble than a child. When we went out for the whole day she called the whole time, her notes were like those of a Yellow-Hammer: "A little bread and butter and no cheese (friends)". When we did return, she was so glad to see us, expressing her delight by dancing with her wings fluttering like a butterfly, her orange throat wide open, the orange tongue protruding and her head on one side.

She had a wonderful memory, even after many months of absence she knew the places and hotels where she had been before. Birds must have wonderful memories to help them in

their migrations and to remember landmarks that would guide them to their old breeding places. Curiosity was another feature; she must investigate everything, and no parcel arrived without her hopping up and examining it. Tootee had the same liking for shining metal articles as Magpies and Jackdaws and was very clever at raising the lids of boxes, consequently I often missed my studs and tie pins. She used to come and sit beside my purse and on my opening it she would seize a coin and fly away with it; a thing which have tired her was admiring herself in my mirror. When she wanted water she ran her beak along the place where she was sitting; when she wanted food she pecked, and if in my bed, she would start by pecking me very gently; if I took no notice of this she would take a piece of my skin and worry it still no response then she gave my ear a violent tug, and that *did* hurt!

Every afternoon, at the time of my siesta, she came right under the eiderdown, sat on my shoulders and was soon a ruffled ball of feathers; she indicated her wish to go to sleep in my hand by pecking; I stroked her head and neck and her eyes closed in sleep. I am sure she suffered from nightmares, because while fast asleep, she would utter a scream and suddenly fly away and get under the bed or wardrobe.

When spring came, the natural instinct to build a nest occurred. She got hold of pieces of paper, strands of thread and wool etc, and brought them to me, turning her beak round and round and shuffling her body. My chest was a favourite spot for the nest, but one year she thought my forehead was a suitable spot; this was rather embarrassing as she gave my hair tugs and tried to weave it into her nest. One year she started to lay eggs; her first attempt nearly caused her death and I had to employ surgical means to relieve her. 1938, was the climax, as she laid 8 eggs, all in the eiderdown of my bed! Pretty little eggs with dark brown blotches, the broad end of the egg being almost all chocolate brown. She never tried to sit on the eggs, suspecting that they were sterile, and, like the vultures in the Regent's Park Zoo, she ate the shells, leaving the yolk!

After a companionship of nearly 13 years with Tootee I was unable to recognize the meaning of the various sounds she uttered

to express her emotions and wishes. When going to sleep in my hand she uttered little "cheeps" like a nestling bird, opening and closing her beak, a sign of sweet contentment; when she wanted to be released from my hand, she gave a succession of "clucks", she also did this when she wanted food; sometimes she sang a sweet little song to herself. When alarmed she made a continuous routing noise, flicking her tail and wings the whole time. This is the noise Bulbuls make in the Indian jungles when they discover a Tiger or other dangerous animal. The Bulbul sits on the top of the very bush where the animal is concealed, and, incidentally, when I was a Big game hunter I was twice warned of a Tiger's presence; and on another occasion, had I taken a few paces forward I would certainly have been mauled or killed, as, in the thick bush, the Tiger would have seen me first and would certainly have attacked, as he was a man-eater, so one of these little birds saved my life.

Tootee was all affection, but she loved to have a fight with me. When I pointed my finger close to her, she would make a series of jumps peck and spur me like a game cock. The Indians keep Bulbuls for frighting, and bet on them, which is a same; as, sometimes, they fight to the death. We got a dummy Bulfinch made of wool while she loved to peck and knock over and jump on its body, generally winding up by seizing it and flying round the room with it.

She was practically carnivorous and what she liked best were blue bottles, horse flies, grasshoppers and meal worms. Bananas and oranges were her favourite fruit. The Persian Bulbul feeds almost entirely on dates. It is easily tamed and not so nervous as the Bengal variety.

There are many kinds of Bulbuls in India; I only kept the Bengal and Persian variety. Tootee was a Bengal Bulbul, having a red patch under the tail. The Persian has a yellow patch. The Red whiskered Bulbul gets tame up to a certain age, but as it gets older becomes impatient and restless; the call of the wild comes and one day it flies away.

Tootee nearly drowned herself once, having a bath, we had to revive her with brandy; ever after that she kept off a complete

bath, contenting herself with a head-and-neck wash. Then when she shuffled her wings it meant that she wanted me to give her a bath, so holding her beak high and grasping her body, I gave her a tepid bath, drying her with a towel. The rest of the toilet was completed by herself in the sun.

Everyone loved little Tootee and many people in the hotels we stayed at wished to see our wonderful little bird. In the railways she was an object of interest. The picture of her is taken from an ivory carving and is true to life.

The love of birds and animals is deep and lasting; they stick to you in adversity, and even in death; it is a pure love, not cupboard love as some believe. When one has gained the confidence of birds and animals one can do anything with them.

So I end this story which had a sad ending, much to our grief and sorrow. Those who kept pets will learn much from them and I think their companionship serves to bring out our softer and nobler sentiments. That little pet taught me to recognize the sanctity, affection and beauty of wild life, as in the case of St. Francis of Assisi Axel Munthe, Cherry Kearton and "Grey Owl". Although I confess I have been a destroyer of wild life in my younger days, I have refrained from killing anything for the last 7 or 8 years. I would only kill a rat or a fly. My motto has been "live and let live" and now I am doing all I can as an ardent protectionist.

So the story of my Bulbuls comes to an end. For bird lovers my advice is to get a Bulbul and you will never regret the step, but for goodness sake do not confine it for ever in a cage, but let it have liberty.

LIST OF BUTTERFLIES CAUGHT IN THE
DARJEELING DISTRICT

Between 1,700 and 4,000 ft.

By

E. W. MAUDE.

(Continued from Vol. XXIII. No. 3. p. 92.)

Nymphalidæ.

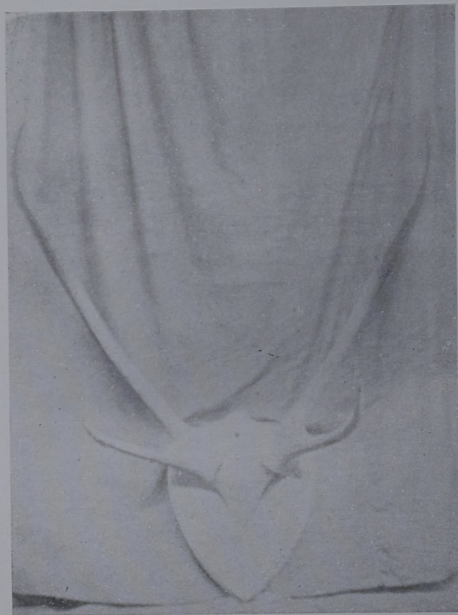
1. *Charaxes polyxena hierax*. (Fd.)—The Tawny Raja.
C. Apr.
2. *Charaxes aristogiton*. (Fd.)—The Scarce Tawny Raja.
F. C. July.
3. *Charaxes marmax*. (Wd.)—The Yelloy Raja. N. C. Apr.
4. *Charaxes athamas athamas*. (Dr.)—The Common Nawab.
C. March.
5. *Charaxes endamippus endamippus*. (Db.)—The Great
Nawab. C. Apr.
6. *Charaxes arja*. (Fd.)—The Pallid Nawab. N. R. Oct.
7. *Heleyna hemina*. (Hew.)—The White Emperor. R. Sept.
8. *Apatura sordida sordida*. (M.)—The Sordid Emperor.
R. Apr.
9. *Apatura ambica ambica*. (Koll)—The Indian Purple
Emperor. U. C. Apr.
10. *Apatura chevana*. (M.)—The Sergeant Emperor. R. Aug.
11. *Apatura parisatis parisatis*. (Wd.)—Black Prince.
Male and Female. Apr.
12. *Herona marathus marathus*. (Db.)—The Pasha. C. Apr.
13. *Sephisa chandra*. (M.)—The Eastern Courtier. N. C. May.
14. *Euripus halitherses*. (Db & Hew.)—The Courtesan. F. C.
Male Apr. Female typical June.
15. *Euripus halitherses v nyctelius*. (Db.)—The Courtesan.
R. Apr.
16. *Hestina nama*. (Db.)—The Circe. C. May.
17. *Penthema lisarda lisarda*. (Db.)—The Yellow Kaiser.
R. May.

18. *Dischorragia nesimachus*. (Bdv.)—The Constable. C. June.
19. *Stibochiona nicea nicea*. (Gray)—The Popinjay. C. Male and female. March.
20. *Euthalia julii appiades*. (Men.)—The Common Earl. C. Male and female. Apr.
21. *Euthalia kesava arhat*. (Fruh.)—The Powdered Baron. C. Apr.
22. *Euthalia telchinia*. (Men.)—The Blue Baron. R. Male and female. Apr.
23. *Euthalia phemius*. (Db & Hew.)—The White Edged Blue Baron. F. C. July.
24. *Euthalia sahadeva sahadeva*. (M.)—The Green Duke. U. C. July.
25. *Euthalia lubentina indica*. (Fruh.)—The Gaudy Baron. U. C. Sept.
26. *Euthalia jama jamida*. (Fruh.)—The Streaked Baron. U. C. Male and female. Oct.
27. *Euthalia jahnu jahnu*. (M.)—The Plain Earl. N. R. March.
28. *Euthalia garuda suddhodana*. (Fruh.)—The Baron. N. R. Apr.
29. *Lebadea martha martha*. (F.)—The Knight. F. C. Apr.
30. *Liminitis darawa*. (Db & Hew.)—The Green Commodore. R. July.
31. *Liminitis procris procris*. (Cr.)—The Commander. F. C. June.
32. *Liminitis zulema*. (Db.)—The Scaree White Commodore. V. R. Sept.
33. *Parathyma nefte inara*. (Db.)—The Colour Sergeant. C. June.
34. *Parathyma cama*. (M.)—The Orange Staff Sergeant. C. May.
35. *Parathyma zeroea*. (M.)—The Small Staff Sergeant. C. July.

36. *Parathyma ranga ranga*. (M.)—The Black Vein Sergeant. N. C. Aug.
37. *Parathyma opalina orientalis*. (El.)—The Hill Sergeant. N. R. June.
38. *Parathyma perius*. (L.)—The Common Sergeant. C. Apr.
39. *Neptis cotumella ophiana*. (M.)—The Short Banded Sailer. C. June.
40. *Neptis mahendra*. (M.)—The Himalayan Sailer. C. Apr.
41. *Neptis hyles varmona*. (M.)—The Common Sailer. V. C. Apr.
42. *Neptis cartica cartica*. (M.)—The Plain Sailer. C. Aug.
43. *Neptis ananta ochracia*. (Evans.)—The Yellow Sailer. R. June.
44. *Neptis radha radha*. (M.)—The Great Yellow Sailer. F. C. May.
45. *Neptis vikasi pseudovikasi* (M.)—The Dingy Sailer. F. C. Sept.
46. *Neptis yerburyi sikkima*. (Evans.)—Yerbury's Sailer. N. R. March.
47. *Neptis miah miah*. (M.)—The Small Yellow Sailer. N. R. March.
48. *Neptis hordonia hordonia*. (Stoll.)—The Common Lascar. C. Apr.
49. *Cyrestis thyodamus thyodamus*. (Bdv.) The Common Map. C. Apr.
50. *Chersonia risa*. (Db & Hew.)—The Maplet. N. C. June.
51. *Pseudergolis wedah*. (Koll.)—The Tabby. F. C. May.
52. *Hypolimnas bolina*. (L.)—The Great Eggfly. V. C. Male and female. May.
53. *Hypolimnas misippus*. (L.)—The Danaid Eggfly. C. March.
54. *Doleschallia bislida indica*. (M.)—The Autumn Leaf. C. May.
55. *Kallima inachus inachus*. (Bdv.)—The Orange Oakleaf. F. C. March.

56. *Precis hierta hierta*. (F.)—The Yellow Pansy. N. C. May.
57. *Precis orthya ocyale*. (Hub.)—The Blue Pansy. V. C. March.
58. *Precis lemonias lemonias*. (L.)—The Lemon Pansy. V. C. Apr.
59. *Precis almana almana*. (L.)—The Peacock Pansy. V. C. Apr.
60. *Precis atlites*. (L.)—The Grey Pansy. V. C. Apr.
61. *Precis iphita iphita*. (Cr.)—The Chocolate Soldier. V. C. Apr.
62. *Vanessa cardui*. (L.)—The Painted Lady. V. C. All the year.
63. *Vanessa indica indica*. (Herbst.)—The Indian Red Admiral. V. C. All the year.
64. *Vanessa camace camace*. (L.)—The Blue Admiral. F. C. Apr.
65. *Vanessa cashmirensis aesis*. (Fruh.)—The Indian Tortoiseshell. V. C. All the year.
66. *Symbrenthia hippoclus Khasiana*. (M.)—The Common Jester. V. C. Apr.
67. *Symbrenthia hypsilis cotanda*. (M.)—The Spotted Jester. V. C. May.
68. *Argynnis hyperbius hyperbius*. (L.)—The Indian Fritillary. V. C. Male and female. Apr.
69. *Argynnis childreni childreni*. (Gray.)—The Large Silverstripe. F. C. May.
70. *Argynnis altissima*. (El.)—The Mountain Silverspot. F. C. Apr.
71. *Argynnis lathonia issoea*. (Db.)—The Queen of Spain. N. C. Feb.
72. *Phalanta phalantha*. (Drury.)—The Common Leopard. C. May.
73. *Cynthia erola erola*. (F.)—The Cruiser. F. C. Male and female, June.

(To be Continued)



Sambhar Horn.
(Killed by Heir-Apparent, Surguja)

Measurements ;

Right Horn	...	44½	Inches.
Left Horn	...	44½	"
Tip to Tip	...	36½	"
Widest Spread	...	37	"

Miscellaneous Notes.

TIGER BAG

At times news appear about the number of tigers bagged by individual sportsmen. Many years back the Pioneer of Allahabad had published that Maharaja of Surguja had bagged about 600 tigers. It may be surprising but it is a fact that by now the Maharaja Surguja's bag of tigers totals 1056 including one white tiger. Maharaja is a shikari of international repute having visited East Africa thrice such as Kenya colony, Tanganyika, Abyssinian border, Uganda and some parts of Rhodesia. He bagged there 30 lions, Elephants, Rhinos and about 36 specimens of other games. He has shot in Nepal, Assam and other places in India, such as Junagarh and the Himalayas. He has killed Indian lion and some hill games also. He has hunted and killed Scottish deer in Scotland. He once shot five tigers within half an hour in one beat in five shots. His biggest Indian Rhino 19½ ft. He has shot in one night 11 panthers. There may be no wonder if he happens to own the largest tiger bag amongst the shikaries of India. It will be interesting to know if any one has a larger bag to his credit.

SAMBHAR

The Heir-apparent, Surguja is also a good shikari. He has recently shot a big Sambhar in a stocking for deer in Surguja jungle about 69 miles from Ambikapur. It was a very massive beast and fairly dark in colour. A photograph of the Sambhar Horn is given with measurements.

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