

THE JOURNAL OF THE
BENGAL NATURAL HISTORY
SOCIETY



VOL. XVI

NO. 1.

Issued July 1941.

Edited by C. M. INGLIS, F.Z.S., F.R.E.S., B.E.M.B.O.U.

BENGAL NATURAL HISTORY SOCIETY.

The Society under the name Darjeeling Natural History Society was started about the end of 1923, the objects being to maintain the Museum in a proper condition; to promote the study of Natural History and to get together, as complete as possible, collections of Natural History specimens from a limited area, including "the civil districts of Jalpaiguri and Bengal and the State of Sikkim", as well as what could be procured from the neighbouring countries of Tibet, Bhutan and Nepal.

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THE CURATOR,
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THE
JOURNAL

OF THE
BENGAL NATURAL HISTORY SOCIETY

EDITED BY

C. M. INGLIS, F.Z.S., F.R.E.S., B.E.M.B.O.U.

Vol. XV.

*Consisting of four numbers containing one coloured
plate, twenty-three half-tone plates, one map,
one line block, twelve illustrations
in the text.*

Dates of issue

Number 1 (Pages 1 to 34)	...	June	1940.
„ 2 (Pages 35 to 76)	...	October	1940.
„ 3 (Pages 77 to 103)	...	January	1941.
„ 4 (Pages 105 to 139)	...	April	1941.

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All except the Leaf Insect and Bora Cheng are available at the following prices by V. P. P. :—

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The following back numbers are out of print :—

Vol. I. No. 3; Vol. II. Nos. 1 and 4; Vol. III; Vol. IV. Nos. 1, 2 and 3 and Vol. V. No. 4.

Application for the above should be made to :—

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The Starlings and Mynas of Bengal with special reference
to those of North Bengal.

By

C. M. INGLIS, F.Z.S., F.R.E.S., B.E.M.B.O.U.

PART III

(Continued from Vol. XV page 108).

3. The Indian Grey-headed Myna.

Sturnia malabarica malabarica (Gmelin).

Field identification :—Silvery grey above and rufous below and only about 8 inches long. Head and neck with fine hackles. Found in small parties and arboreal in habits.

Description :—The coloured plate is sufficient for identification. The fine hackles have pale shafts which make them look silvery and the rufous varies a lot in depth of tint; also some birds are greyer and others browner above. Stuart Baker says that in winter the beaks are browner and the rufous paler.

He collected an abnormally coloured specimen which was white below with a rufous band across the breast and says that abnormally coloured specimens are common.

Length about 8" ; wing 4·1" ; tail 2·7" and tarsus ·9".

The colours of the soft parts are seen in our coloured plate.

The sexes are alike.

Nestling "above dark grey-brown, the head paler; tail all brown; below pale rufous. The bill is all yellow and the iris dull bluish-grey or bluish-brown" (*Stuart Baker*).

Distribution in our area :—A common plains species which does not appear to ascend the hills higher than 3000 to 4000 feet at the very utmost; although in some parts of the Himalayas, Stuart Baker says it goes up to 7000 feet. With us it is only commonly seen below 3000 feet.

Outside our area :—It occurs east of a line drawn roughly from Mount Aboo to Dehra Dun and straggles to Mysore and Travancore in the winter and is found in "Assam, Chin Hills, Yunnan and Cochin China" (*Stuart Baker*).

Habits :—The Grey-headed Myna loves wooded country, forest and clearances in the same where there are some large trees left standing. They are also often seen in the shade trees in tea gardens and in Bihar they frequently come into our compound, even breeding there. Like many other birds they frequent the Silk Cotton trees (*Bombax malabaricum*) and Flame of the Forest (*Butea frondosa*) when those trees are in flower.

They are arboreal in habits, but sometimes descend to the ground in search of insects and may then be seen running about like other Mynas. They congregate into parties, or flocks, of from a dozen up to some fifty individuals. Stuart Baker gives an interesting little note on these birds, he says :—"Every now and then the whole flock hurl themselves off the tree, fly at a great pace for a few circles round about it, and then having recovered their appetites once more settle and feed". Their flight is straight and fast.

They have rather a pleasant chattering note which is uttered in flight. Their note has also been described as "harsh and a hoarse cackle" like the preliminary cackle of the Spotted Owlet.

Their food consists of insects, the fruit of wild figs (*Ficus spp.*), and ber (*Zizyphus jujuba*) and probably the nectar from the flowers of the Silk Cotton tree and Flame of the Forest.

They breed in holes in both dead and live trees, often gusin old nest holes of Barbets and Woodpeckers to nest in.

We, once, saw a pair appropriate the newly excavated nest-hole of a Coppersmith, driving away the rightful owners. They will often enlarge holes which are too small and Cripps, in Assam, found a pair excavating a hole for themselves in very rotten wood. He remarked that they did this, usually, in the heat of the day. In Bihar we found holes in mango trees were the commonest sites but probably that was because those were the commonest trees there.

The nesting holes may be any height from the ground as low as 5 feet or as high as 50 feet up.

We quote the account of a nest taken by Gammie at Mangpu. He wrote to Hume as follows:—"I obtained a nest of this species near Mongphoo (14 miles from Darjeeling) at an elevation of about 3,400 feet. The nest was in the hollow of a tree and was a shallow pad of fine twigs, with long strips of bark intermingled in the base of the structure and thinly lined with very fine grass-stems. The nest was about 4 inches in diameter and less than $1\frac{1}{2}$ inches in height exteriorly and interiorly the depression was perhaps $\frac{1}{2}$ inch deep. It contained four hard-set eggs".

He again wrote:—"The Grey-headed Myna breeds about Mongphoo laying in May and June. I have taken several nests now and I found that they prefer cleared tracts where only a few trees have been left standing especially on low but breezy elevations of from 2500 to 4000 feet. They always nest in natural holes of trees both dead and living and at any height from 20 to 50 feet, from the ground. The nest is shallow, principally composed of twigs put roughly together in the bottom of the hole. They lay four or five eggs.

"The Grey-headed Myna is not a Winter resident in the hills. It arrives in spring and leaves in autumn. It is very abundant in the outer ranges in the Teesta Valley and is generally found in those places frequented by *Artamus fuscus*. It feeds about equally on trees and on the ground and a flock of 40 and 50 feeding on the ground in the early morning is no unusual sight."

A small pad of grass and leaves is all that we ever found in the way of a nest.

They breed in May, June and July. In Bihar we found them starting operations about the middle of April and the eggs were laid about the middle of May until about the middle of July.

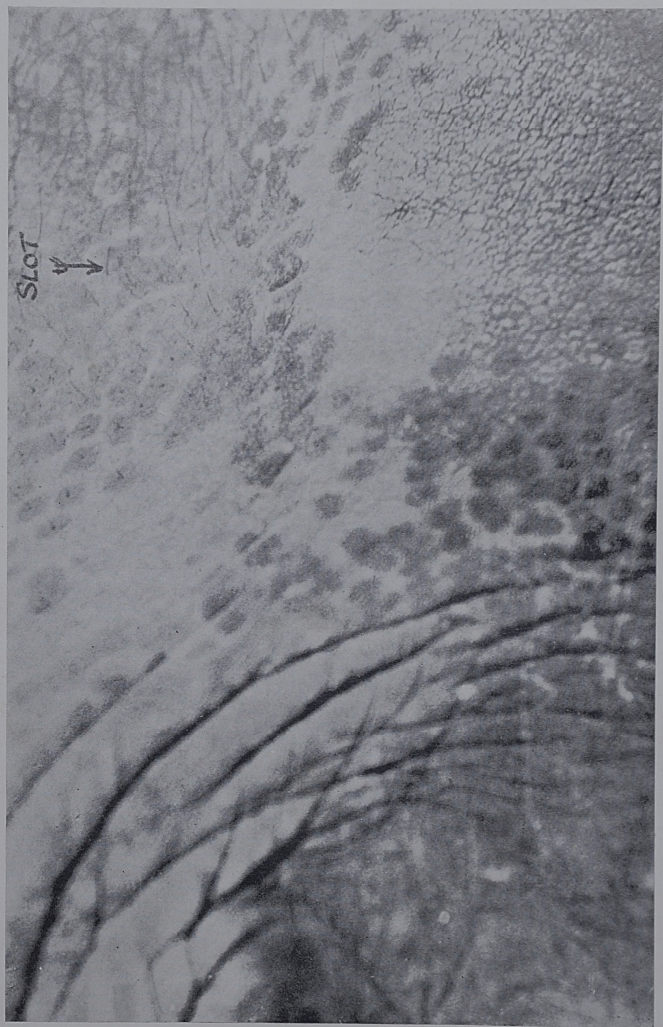
They lay 4 to 5 eggs. In Bihar we never found more than 4. They vary a good deal in shape, some being broad and blunt and others rather pointed at one end. In texture they are fine and they have a decided gloss and they are a most delicate pale sea-green colour.

The eggs measure about $.95 \times .70$ inches.

Finn considered that unlike their near relations the handsome Andamans and Nicobars White-headed Mynas they have nothing to recommend them as cage, and aviary birds. They do well in captivity as Sanyal wrote that some had been living for 6 or 7 years in the Alipore Zoo, Calcutta. It does well in an aviary, or large cage, with other birds. Like other Mynas it thrives on *Sattoo* but its natural food should also be given to it if possible. According to Sanyal it becomes very tame when caged.

In Hindi and Bengali this bird is known as *Pawi*.

(To be continued).



The "Mash" Slot.

H. E. Tynäle,
Hairpotha P.O.

Elephants in *Musth*.

By

E. O. SHEBBEARE.

(With a plate by H. E. Tyndale.)

I have been asked to write a note on *musth* elephants and, though I do not pretend to be an authority on the subject, I can quote authorities and add a little first-hand evidence on my own account.

Most people know roughly what a *musth* elephant is though perhaps the "man-in-the-street", who only hears of the most extreme and therefore sensational cases, may be apt to overestimate the virulence of the beast. It is true that some tame elephants in this state are fiends incarnate, and, unprovoked, will attack on sight anyone or anything they see and often cause loss of life. It is advisable to tie up any elephant who shows signs of going *musth* and the sooner the better because it is impossible to say how severe the attack will be. On the other hand *musth*, especially in youngish or naturally good-natured animals, may amount to no more than drowsiness and mild disobedience of orders, probably due to the stupidity induced by the attack.

I have never known a wild elephant in *musth* show any signs of truculence; they appear merely dazed and the only death I have heard of caused by one was that of a man (near Hasimara in the Duars) who was foolhardy enough to go close up to the animal, apparently out of bravado. The elephant, being too dazed to notice him until he was quite close, was probably aroused from his stupor by the human smell and, not unnaturally, charged in self-defence. I have been charged by a wild *musth* tusker in similar circumstances myself but had taken the precaution of having the elephant-moat round the Gorumara Forest rest-house between us before making the experiment. In this case I had been standing within about ten feet of the elephant for several minutes before he got wind of me and roused himself sufficiently to make the charge, which was very sudden when it came.

A good mahout knows from the demeanour of his elephant that he is about to go *musth* some time before the swelling of the temporal glands or any discharge from them is noticeable. These glands are the pair of small holes, not much bigger than the hole made by a wire nail, one on either side of the head of all elephants, male or female, about half-way between the eye and the ear-hole. There are two or three bristles growing below the hole which makes it more easy to find. There is a similar hole with similar bristles lower down on the elephant's cheek the purpose of which I do not know. The temporal glands are called *kapul* in Hindustani.

The early stages of a fit of *musth*, before the discharge of oily fluid from the glands, is called *kher-musth* and it is a common belief among mahouts that the full violence of the attack is not reached until the discharge dribbles down to the corners of the mouth and the animal "tastes" it. I cannot vouch for the truth of this belief but it is only natural that, at the height of a copious discharge, the liquid should reach the mouth. Evans* notes that mahouts hold that the danger of violence is passed as soon as the urine, which is partially withheld during an attack and dribbles slowly away, again flows normally.

Sanderson† says that he has twice seen newly-caught females with a discharge from the temporal glands but that he knows no case of this in tame cows. The tusked female who used to be kept at Sorupeta on the north bank of Kamrup district, Assam, was said to have periodic fits of *musth* though without violence. I never witnessed one of these attacks myself but hear that they were accompanied by a temporal discharge. She was a handsome *kumeriah-bund* animal with short, thickish tusks pointing forwards and outwards like those of a young tusker and quite different from the walrus-like tusks of ordinary females or *makhnas*.

All mature male elephants in normal health are subject to attacks of *musth* at varying intervals, the bouts lasting

*"Treatise on Elephants" 1901 Edition, p. 160.

†"Thirteen Years among the Wild Beasts of India" p. 59.

from a few days to weeks or months. The usual season for the onset in tame elephants is the cold weather and I never remember receiving a visit from a wild animal in this state in the hot weather or rains. Among tame elephants it is when an animal is at the top of his form with good feeding and perhaps a shortage of work that *musth* usually begins and it is possible sometimes to delay, or even avert, an attack by giving him plenty of hard work. An interesting case of this occurred in the Andaman Islands when a big tusker in a truculent state of *musth* was followed up by Bonington, who told me the story himself. He succeeded in walking the animal to a standstill in a mangrove-swamp where the elephant was at a disadvantage owing to the heavy going. When the tusker was thoroughly tired the *musth* appeared to subside and he allowed Bonington to approach him so that the men, who had followed with ropes, were able to secure him and get him back to camp. After a night's rest the *musth* returned and he was as mad as ever but by that time he had been securely tied and was no longer a menace.

The usual way to try to avert an attack is with drugs. Milroy* remarks that it is strange that no one so far has determined by experiment whether an excitant or a depressant should be used for this purpose. Evans' alternative prescriptions are opium, *ganja*, a bromide, tamarind or a mixture of flour, sugar, *ghee* and onions. He also recommends a strong purge and withholding of the grain ration. Milroy quotes Evans as holding the view that it is better for the health of the elephant to let *musth* run its course rather than to check it.

I have written the word "*musth*" throughout because this seems to be the usual spelling but *masth* or *masthi* is more like the hunterian transliteration of the word as I hear it. Sanderson, who wrote before the hunterian spelling was generally adopted and spelt vernacular words as he heard them in the ordinary English manner, always

*"A short Treatise on the Management of Elephants" p. 62.

wrote "must" and this would be transliterated *mast*. In point of fact our mahouts in north-east India, whether Tharus, Bengali Mahommedans or Assamese, seldom use the word at all except to make their meaning clear to Europeans ; they use the expression *bhatikola* which Milroy gives, wrongly I think, as the Assamese equivalent of *musth*.

There has been a good deal of discussion on the relation between *musth* and sex. At one time at any rate there were those who went so far as to say that, among elephants, unlike other mammals, the male and not the female is the one which comes on heat. The direct contrary of this theory is held by those who say that *musth* has nothing to do with sex. My own view is that the truth lies somewhere between these two extremes but, as it is a question of the interpretation of facts, I will give the facts, as far as I know them and let the reader draw his own conclusions.

Those who hold the former theory are at least wrong in thinking that the cow does not come on heat for, though she exhibits no external signs obvious to the outsider, her attendants are aware of her condition by subtle changes in her demeanour. A tame cow on heat will attract any wild bull who gets wind of her. Though these wild males are usually too shy to approach her at her standings, if she is turned loose to graze or succeeds in breaking loose, as she will often try to do, a calf is usually born from the mating. A friend of mine watched a wild tusker abduct one of our cows (Sunda Kali) who had broken her chains to accompany him and he described the departure of the pair in the moonlight with trunks intertwined, as a beautiful sight. Sunda Kali returned of her own accord after a few days and a calf was born in due course.

A wild bull in *musth*, on the other hand, will hang about a forest camp in a dazed condition, or even follow the tame elephants from camp to camp, sometimes for weeks. He usually spends most of the night in the elephant lines withdrawing into the forest for a short distance during the day. He shows no fear of mankind but is never truculent

though he may cause slight injuries to the hindquarters of the tame elephants with the points of his tusks in his drunken efforts to mount them. In these dazed attempts at mating the *musth* bull sometimes confines his attentions to one unfortunate cow but usually he is quite impartial and I have even known a young tusker (Jatra Prosad) to be the victim on one occasion. The tame animals, being tethered, cannot avoid him altogether and their noisy protests disturb the whole camp until one would fill almost justified in shooting the intruder were it not that he is usually a good bull in the prime of life and a potential sire for the wild herd. Even though one of these *musth* visitors may appear to have been successful in his attempts I have never known a calf to result from such a union. My own experience is limited to the comparatively few occasions on which wild tuskers have visited my camp but A. C. Sen-Gupta, for many years the elephant veterinary officer in the Andaman Islands, who has had quite exceptional opportunities of observing the mating of elephants, confirms my view that the sire in a successful mating is never in *musth* at the time.

The attitude of tame *musth* elephants to females varies; some seek their society and the presence of a favourite cow tethered near may alleviate the violence of the attack. Others appear quite indifferent and some mad brutes will attack, and sometimes kill, any elephant, male or female, that they meet.

I will give the opinions of some authorities on this subject during the past eighty years. Sanderson writing of *musth* in 1881 says it is "supposed to be of a sexual nature." Evans, a veterinary officer, writing in 1901 says that the fits "seem to have some connection with sexual functions" and again "are perhaps sometimes due to ungratified sexual excitement." Milroy in 1922 says that its "exact significance is not understood as males are at all times willing to copulate with females." In a recent letter from Sen-Gupta also a veterinary officer, he writes:—"along with the activities of the temporal glands the follicles of the

urino-genital system also get irritated. These irritate the male genitals."

Evans compares *musth* in elephants with the "rut" in deer. The "rut" however is a definite contest between males apparently designed by nature to ensure that the strongest stags sire a greater proportion of the fawns of the herd. Though I have twice come across cases of wild bull elephants killing one another in neither was there evidence of *musth* at least in the vanquished. A closer analogy would seem to be the periodical fits of violence in male camels.

There is sometimes confusion among those unacquainted with elephants between an animal in *musth* and a "rogue". A "rogue" elephant is a wild bull whose temper has soured, often by gunshot wounds or tooth-ache caused by a tusk broken or cracked near the root which exposes the pulp to decay so that the whole tusk-socket is sometimes a suppurating mass. Such elephants will often kill human beings or other animals unprovoked or even, according to some accounts, seek out victims for their violence. These old bulls, having lost all interest in the herd to which they once belonged, are always solitary but "solitary" should not be used as a mere synonym for "rogue" because, firstly, all herd-bulls remain separate from the herd for the greater part of their time and, secondly, because many old bulls which have long separated are by no means "rogues" in their behaviour.

I have sometimes been asked what a "rogue," in *musth* is like. I have never come across one to my knowledge and doubt whether a true "rogue" ever feels fit enough to go *musth*, as this is usually a sign of wellbeing.

Observations on the Leopard or Panther and its Shikar.

By

LT. COL. H. S. WOOD I.M.S. (RETD.)

(Continued from Page 137 of Vol. XIV)

Panthers will sometimes, like a jaguar, lie on a thick branch of a tree and spring on any deer passing below. This is the usual mode of the Bandar Bagh or Clouded Leopard, and I shall describe an incident with this animal later on. I can quite imagine that a Clouded Leopard is capable of catching monkeys as they spring from tree to tree. It is essentially an arboreal animal, even going so far as to bring forth its young in the hollow of a tree. The Panther is widely distributed throughout India, Burma and Ceylon and, I believe, the Snow-Leopard is really the ordinary leopard, that has undergone changes on account of its environment through the ages.

The black panther is well known. It is not a distinct variety but a case of melanism. If the skin is held in a certain light the rosettes and spots are seen. During all my years of shikar I have never seen a black panther. They are rare, though common in the Pegu District in Burma. My brother bagged two with No. 4 shot when he was after jungle fowl.

When I was in Sylhet, S—, the S.D.O. of Habiganj, shot one that took refuge in a villager's hut ; he climbed up on to the roof, removed some thatch, and shot the beast. Truly luck and shikar made easy ! I believe that black panthers and albino tigers would be more common were it not for the fact that in the animal world, except in human beings, nature abhors monstrosities or anything deformed. These black and white cubs are killed and probably eaten purposely by the mother. The black leopard has lovely yellow eyes and, when roused, looks the perfection of ferocity. They are practically untameable and hardly ever take to their keepers, even in the zoo. The skin of one is indeed a trophy to be proud of ! The panther is beautifully camouflaged and it is very difficult to spot one in the jungle

unless he is on the move. The under parts of a panther are white, with spots and rosettes. The hair and nature of coat vary : those got in the hot plains of India have short hair. The best pelts are obtained in the hills, specially during the winter months.

I don't know how many cubs are born in a litter but, like the cat, there must be several and perhaps some of the litter are destroyed owing to difficulties in feeding the whole lot. The cry of the panther is well known and resembles the noise of sawing wood. I am of the opinion that this noise is only made when the male and female get separated, or when the cubs stray. I think they call during the mating season. One cannot imagine they make it when hunting, as they would put all game in the vicinity on the "qui vive". I have asked my trackers the reason and they told me that the noise is made to strike terror and panic into the game and that they do not run away until the panther is actually seen or smelt. There may be some truth in this as in hilly country it is impossible to tell the direction of the sound, owing to echoes and the animal may stampede in the direction of the panther, instead of away.

Panthers are specially found in thickly wooded and rocky low hills close to water. In the hills there are a number of caves to which the panther resorts and the female generally chooses a cave to bring forth her young. These caves are a terrible nuisance as a wounded panther takes at once to them and I have lost several in this way.

An ideal place for panther is the rocky hills on the right bank of the Brahmaputra in Tezpur. During the heavy floods in the low country on the left bank they used to swim over and take refuge there. In Burma, a panther will often take up his residence in an old ruined Pagoda. When I was at Sagaing, one was shot in a pagoda in the old city of Ava, opposite Sagaing. With reference to these Tezpur hills, the resort of numerous panther, I have a curious story to relate. One large cave here was occupied by yogis or Fakirs (I liked these chaps and used to go and have talks with them ; they had travelled much and gave

me valuable information of the haunts of big game). Well, I tied up goats and sat up over hills again and again without avail and at last I asked the "Babajee" what was the reason. He said, "Your Honour will not get any unless I do puja and utter certain Mantras". I said "What Puja" ? and he replied, "Only the matter of sacrificing a goat". I gave him Rs. 3 and after this I got five panthers out of these hills ! It is rather stupid to believe in this occult power but there were the facts !

B—whose bungalow was not very far from mine, trapped a number of leopard. I hated this trapping and, although asked to shoot a beast in a trap by natives, I always refused. Of course, if the animal is kept for Zoo purposes, it is all right. An engine driver in the A.B. Railway did quite a lot of business by placing traps at the various stations along the line. I often felt inclined to set the animals free.

A leopard is a fool as far as a trap is concerned and will go headlong into it. Not so the tiger. In Sylhet the villagers used to trap leopard and bring them into the station for a "Tamasha", the trap being provided with wheels. Then a huge net about 20 feet high with an inward slope was erected and the leopard let loose. Some jungle was placed in the centre. A platform is erected at one end and whoever pays the largest sum can shoot the leopard and have the skin ; it is generally a sporting Zamindar ! I only went once to see this and took my hunting pack, consisting of 5 dogs who were crosses between Irish, Airedale and Fox Terriers. They were without fear, having pulled pig and "Koosia Baghs" or fishing cats. I was curious to see how they would behave in the presence of a leopard of which dogs generally have an unwholesome dread. I put them all in under the net and they went straight for the leopard. There was a terrific rumpus and the leopard slunk into the patch of jungle. Unfortunately, his tail showed and my dogs, after investigating, seized the tail. Then there was a "Tamasha", the leopard bounding about like an India rubber ball and my dogs dashing and

turning to avoid him. After a while the dogs had enough and came to the net, with their tongues lolling out asking to be let out. Strange to say not one of them was touched.

(To be continued.)

Note on Pallas' Fishing Eagle (*Haliaeetus leucoryphus*)

By

C. M. INGLIS, F.Z.S. F.R.E.S. B.E.M.B.O.U.

With Six Half Tone Plates

BY

W. A. S. LEWIS I.C.S.

Pallas' Fishing-Eagle has a very wide distribution, extending over the greater part of India as far as Burma, but does not occur in South India or Ceylon. Outside India it is also found in the Persian Gulf, Caspian and Black Seas.

It is found in open country often near water but not necessarily so, we have found it in villages considerable distances from it, Baker discovered a pair nesting in the middle of a Bazaar.

Besides what Mr. Lewis says, these eagles feed on fish and water-birds, they also feed on carrion, we once saw one in company with a vulture and some jungle crows, feeding on the remains of a small dead animal. The Fish Eagle generally carries off its prey to a tree, but in the case of a very heavy fish it drags it along the water to a bank where it is eaten. Fish up to 13 lbs has been recorded as captured by this eagle.

In Darbhanga District of Bihar, the call is much appreciated by the natives, in the vicinity of whose villages these birds breed, in this district we found them breeding from November to February.



Adding a stick to the nest.



Bringing a bunch of straw.

Copyright
W. A. S. Lewis.

Plate VIII.



The hen looking down at the 2 chicks, just hatched.

Copyright
W. A. S. Lewis.



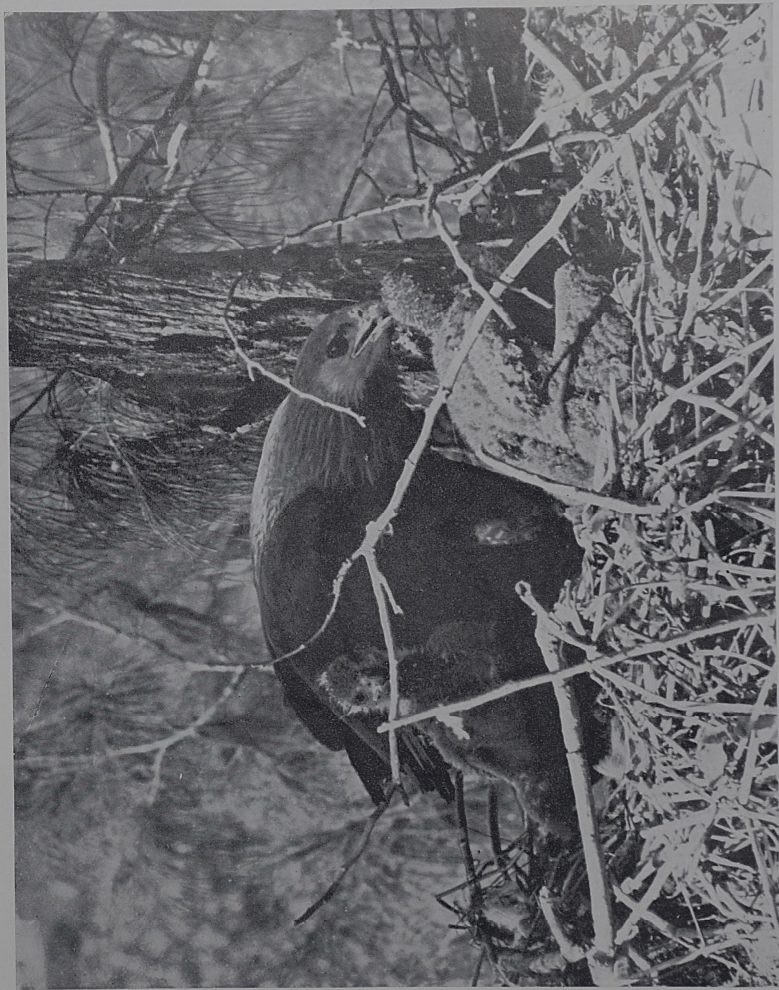
The hen sitting right.

Copyright
W. A. S. Lewis.



The two young, now in dark grey down.

Copyright
W. A. S. Lewis.



Carefully placing morsels of flesh in the beaks of the young.

Copyright
W. A. S. Lewis.

The nests are situated in any large tree such as Simul, Pipul etc. We have always seen it in large solitary trees.

In Bihar we found the Laggar Falcon (*Falco jugger*) laying its eggs in this bird's nest. The clutch varies from two to three eggs and very occasionally four, they are a greyish white in colour without any gloss. The average measurement of the eggs is 2.77 by 2.17 inches.

The vernacular names in Bihar are Sorail and Kootair, and in Bengal Koral-Machkoral and Bala, and in Hindi Machurang-Machmanga and Dhenti Patras and in Nepal Kankam.

THE HIMALAYAN WOOD OWL.

(*Strix nivicola*)

By

R. MARTIN HAWES.

Stuart Baker, in his book on the Fauna of British India, writes that the Himalayan Wood Owl has been but little observed and there is nothing on record of its habits. A pair of these birds came into my possession this year and a few notes about them may, in view of the above, be of interest.

The young birds were caught on Tumsong T. E. (Darjeeling) by some coolies who came across the nest in the scrub jungle where these owls occasionally build. I obtained them on May 26th, when they were about two weeks old. They were still covered with thick down so that they appeared globular in shape and resembled large fluffy balls. The beak and feet were almost lost in the down and the most prominent feature was their large black eyes which stared unblinkingly at one. Despite their comical appearance they proved easy birds to deal with and gave no trouble. When put into a box they sat bolt upright like expensive soft toys and allowed themselves to be fed without fuss. Fresh

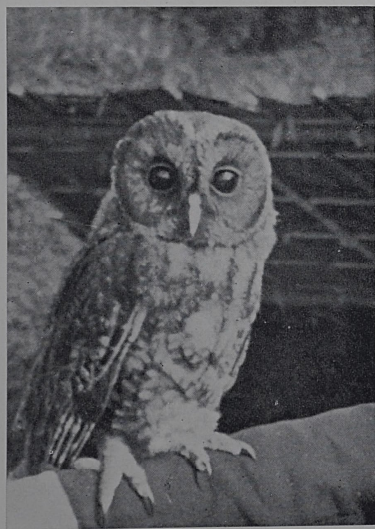
raw mutton was swallowed willingly and it was on this that they were reared. No water was given as they never seemed to require it; the meat was, however, always washed in water and fully moist.

Their rate of growth dispersed any doubts as to the suitability of their diet for their progress was apparent to the most casual observer. Both ate heartily, five ounces of meat a day was not unusual. When the stomach was full they would store the food in the gullet so that they would be literally filled right up to the throat. This was reassuring as it became obvious that they could not be overfed.

The two birds appeared to be male and female, the female being a quarter as big again as the male and proportionately more advanced. Within a very few days both were quite tame and would answer a call with their own plaintive cry which resembled the squeak of a rusty hinge. Other than this they were very quiet and were never heard to call or hoot at night. The only other cry they had was an indignant chatter always uttered when they were handled; it was very similar to the chatter of vultures as they bicker over a carcase. The photograph of the two show them as they were at this stage. The portrait was taken with some difficulty as they strongly resented being taken from their box for the purpose and were very sulky and bad tempered over the whole affair.

Their thick covering of down was shed surprisingly fast and the first coat of the immature bird soon appeared. Casting the down was effected not by the normal process of moulting but by being forced out at the end of the new feathers to which the down adhered and from which it was gradually rubbed off.

By the first week of June both birds had left the stage of baby-hood behind and were taking an intelligent interest in their surroundings. Their box hung on the wall at the back of the house and they were able to



The Himalayan Wood Owl.

watch anything that was going on. Not only did they remain awake most of the night (for they could be heard scuffling about at all hours and any light would bring them to the door like a couple of bright-eyed goblins), but they showed little inclination to sleep during the day. The daytime would be spent in occasional naps when they lay full length with the beak resting on the ground, or by sitting at the wire-netting and watching the dogs. When all else failed they fell back upon their revolting habit of regurgitation as amusement; they would swallow as many feathers and particles of down as they could find and these would be regurgitated in the form of a tightly packed bolus. This bolus would be held in the claw and slowly picked to pieces and swallowed with the greatest relish.

When a little more advanced both birds were allowed out of the box and were soon on intimate terms with the household live stock which consisted of two cats and four dogs, the latter ranging from an alsatian to a small Tibetan pug. The young owls would walk confidently amongst this pack and would advance clacking their beaks angrily at any one of them who obstructed their path. Two other back-yard personalities were a pair of fantail pigeons and developments between the two parties were watched with interest. Nothing very spectacular eventuated. The owls ignored the pigeons completely and went so far as to trample on them if they got in their way. They appeared to have the greatest contempt for them; this was not really surprising as the pigeons definitely gave the impression of being mentally deficient. The cock bird was so imbecile that it would allow itself to be picked up and mouthed by a playful dog merely because it would not take the trouble to fly, and the hen invariably laid her eggs in several different places and got into difficulties when she tried to brood them all at once.

Whatever good points the two owls may have had they were certainly very lazy. Although by the middle of June both could fly well they preferred rather to flutter down

from their box and play by the hour with a dried grasshopper's leg which they kept hidden under a rug. They had learnt by this time to feed from a plate without assistance, and in addition any insects such as moths and beetles were highly appreciated and would be eaten complete with wings and other indigestible parts. The method of eating was always the same. The insect was held in one of the talons which were capable of a vice like grip. The outer toe was turned round to pair with the hinder one so that there were two claws forward and two backward. Once gripped it was almost impossible for anything to escape.

The insect was then scrutinised in a menacing fashion at very close range and from every angle, and any part which showed signs of wriggling was bitten off. In this respect lizards were prized above all other things because not only were there four legs but a head and tail as well. The head was usually the first to be removed as it was the part to wriggle most, but the tail gave the most enjoyment as it would continue its contortions after it had broken away from the body.

Their lack of desire to fly was so pronounced that it became evident that a few aviation lessons were indicated. These proved effective and on the evening of June the twenty second, with a little encouragement, both youngsters took wing and disappeared into night.

The following morning revealed them sitting like two solemn Buddhas in a fir tree close to the house, but their position was soon discovered by the king crows and rock thrushes and they were so mercilessly mobbed that they had to be rescued. Unfortunately while the male bird was being pulled from the bough its hip was dislocated and it died ten days later. The female, however after being mobbed once, seems to have appreciated the security of her box and thenceforth would return of her own accord after nightly marauderings. Later as she grew more experienced she would return every second or third day only, and a little

searching showed that she had found a resting place of her own in a large fir close by. If, as sometimes happened, she was found in her box the door would be closed and she seemed quite happy to stay penned in until the evening when she would be released. On occasions when she had spent the day outside meat was put on the top of her box at night and an empty plate always showed that she had come at some dark hour and made a square meal.

By the middle of July her plumage had appreciably altered and was well on the way to the mature coat. Everywhere darker and more luxuriant feathers were pushing their way through the indeterminate grey-brown of the immature bird. In September when the second photograph was taken the coat was not quite full and some drab patches were still visible. The back and wings were mottled dark brown and cream and the tail and wings were narrowly barred with the same combination of colours. The breast and legs were pale cream or sandy in colour, the legs being speckled, and the breast mottled below the chin and flecked with irregular stripes lower down. A distinctive cream patch was visible on the bend of each wing. The claws and bill were greenish yellow, the upper mandible being moveable to some slight degree. The facial discs were very pronounced. They were fawn in colour and each radiating feather (or filoplume) was lightly barred with brown giving a combined effect of circular brown bars. The last addition to the adult plumage was the growth of white eyebrows superimposed on the disc feathers. The size of the discs greatly added to the apparent size of the head for the outer edges, which were outlined by crescents of dark brown, were held erect by a ring of cream feathers which pressed against them.

The feature which promoted most comment was the eyes. Their size and lustre can be gauged from the photograph. They stood out prominently from the centre level of the discs and were protected by loose heavy eyelids which closed from the top, and which were conspicuously fringed with orange. Its powers of sight were

rather puzzling. If a finger were drawn across the eyes at a distance of an inch or so no cognisance of the fact was shown and the eyes did not blink. If meat were offered on a plate it would fumble against the white porcelain until the meat was encountered, but any insect crawling up the wall fifteen feet away was instantly seen and there would ensue much excited bobbing about at the door of the box. On the other hand if a Hawk Moth were placed in the box no matter what dizzy aerobatics this swift flying insect performed it was marked and caught with admirable skill. One must presume that during the day they are very short sighted, and that in the above instance the moth was caught as much by sound as by sight.

The female has now been at liberty for over two months and though her visits are becoming rarer she is still friendly and unafraid; at night she will appear out of the darkness as silently as a shadow, flying through the house into the brightly lit sitting room without apparent inconvenience. Her powers of flight are admirable. The heavy broad pinions are soft and pliant and edged somewhat fluffily so that her flight is indeed "cushioned." By this she is able to seek her prey by ear as well as by sight and to be inaudible as she quarters the ground. Even when flying in the room it is difficult to hear the wing beats and no more noise is made than a tiny rustle of wind. All the strokes are practically vertical so that little progress is made in relation to the number of wing beats. As a result she could alight on ones arm as gently as thistle-down and as silently. On the other hand I have seen her fly across an open space at a magnificent speed and with the broad driving strokes of an eagle.

In conclusion it may be said that these birds made interesting and intelligent pets. They were affectionate and playful and very easy to rear. At the present time though primarily engaged upon adult pursuits the owl can often be seen playing with her chief enemy the cat in the half light of the evening, flitting provocatively from post to post as the cat stalks and rushes it. The cat never wins nor

wishes to, and the owl waits just long enough to make it worth while for the cat to try again.

How long she will continue her connection with the scenes of her youth is uncertain but it is natural to suppose that by next spring she will leave in response to the urge to rear her own young and also as is found in more advanced spheres of life, her partner will refuse to allow her to continue the associations of her pre-married life.

Sunbirds

By

DAK PAKI

Although the majority of people dislike the idea of keeping birds in captivity for various reasons it is sometimes necessary to do so if one wishes to make a closer study of their habits, movements and colouring.

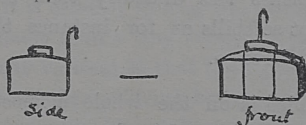
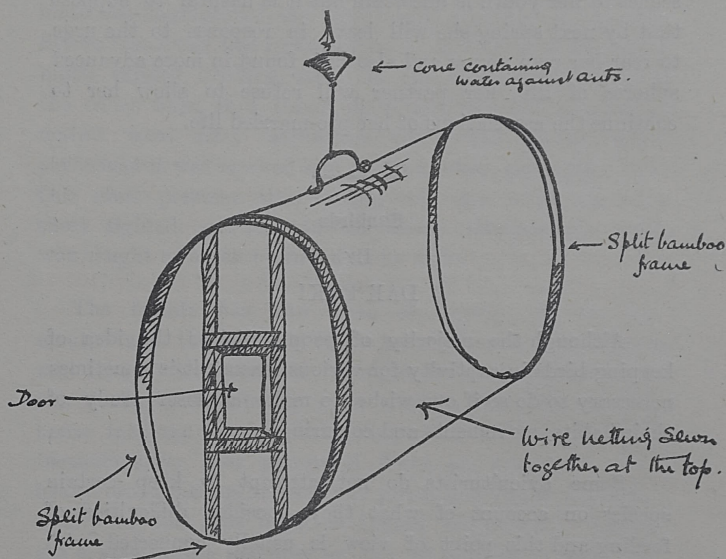
Some aviculturists do not attempt to keep certain species on account of what they consider difficulties of feeding and this point of view is usually connected with Sunbirds. In point of fact the feeding and keeping of this bird presents less difficulty than some of the more commonly kept softbills as for instance the "Bhimraj" or Racquet-tailed Drongo.

The Sunbird is on the whole a most intelligent bird, beautifully feathered, small and some can even be said to sing quite well. What more does the fancier require ?

Should you catch your birds with a net, the best method of transporting them to their future home is in a small linen bag. When placed in this they do not attempt to flutter thereby wearing themselves out and spoiling their plumage into the bargain as would happen if placed in the usual bazar cage. If however they are caught with bird lime, the bird should be immediately cleaned with olive oil and all traces of stickyness removed, the next stage being to remove the oil with cotton wool soaked in

any form of mild spirit, whisky or gin (if it can be spared) will do very well.

CAGE AND FOOD-POT FOR SUNBIRDS.



Bazaar inkpot suitable for sunbird food, but hard to clean.

It is best to place the captive in a cage with only one side open, the three remaining sides can be covered temporarily with cloth and the size of the cage should not exceed more than about one cubic foot until the bird has learnt how and where to find its food.

The opening to the food pot should be small so as to prevent the bird from soiling its feathers whilst it is unused to the cage and fluttering blindly round inside it.

Food should be given at least twice if not three times a day. The first meal as early as possible, should consist of two drops of the best procurable honey, enough Glucose "D" to cover a one anna piece and half a tablespoon of any form of Malted Milk to which is added one ounce of water and the entire mixture thoroughly stirred.

For six birds, six ounces of water, half a teaspoon of honey and half of Glucose "D" to three spoons of Malted Milk. During the hot weather and monsoon three spoons of "satoo" or powdered gram (the best obtainable) and one spoon of Malted Milk as the latter is very inclined to turn sour in warm weather and as the "satoo" is not as stimulating as the Malted Milk a greater bulk of the latter should be added.

The last meal should be given about one hour before dark and be made up of honey, Glucose "D" and water. This can then be left standing over night without fear of turning sour and allows the birds to feed at sunrise without master having to disturb himself unduly.

These birds are very fond of bathing and they can be either sprayed with water every day or a well soaked branch can be placed in the cage for half an hour. This is their natural way of bathing but the cage door is very often not sufficiently large to allow the passage of a suitable branch.

It is important to augment their milk diet with either maggots or any kind of small soft insect and I have found the easiest way to accomplish this is by securing a 50 cigarette tin, perforating the lid and sides and filling it with meat, cotton wool soaked in aniseed oil or any other odiferous matter attractive to flies. The tin should then be placed in the cage when the birds themselves will capture any insect which takes their fancy.

Birds should be taught where to find their food by once or twice dipping their beaks into the container in which their food is held and they will, in a remarkably short time find out what the container looks like and even if it is hidden will soon discover it.

When Sunbirds are first caught they can, if necessary be caged together but directly they gain confidence and condition they become extremely pugnacious, even opposite sexes attacking each other viciously. I have on many occasions seen wild sunbirds come down to my caged ones and have once known my tame bird to seize the wild bird's foot and hold it long enough for me to put my hand on the struggling visitor.

Sunbirds or rather one Sunbird can be kept in an aviary with other birds much larger than himself but even so I have known them to jealously guard the surroundings of their food dish and to attack all comers regardless of size.

It is advisable to keep small cages either hung up or supported on four legs with a saucer full of water under each leg as the sweet food very soon attracts the red ants. The bottom of the cage should be of wire netting with a tray underneath.

These birds fully repay the slight trouble taken in keeping them by their intelligence and confiding ways apart from the fact that they are never dull or listless, unless sick, but are constantly on the move from sunrise till dark. It is quite understandable that the terrific nervous energy expended requires not only stimulation but replenishment.

It is hoped that these notes will interest those who DO keep birds in cages and that they will try and keep at least one or two Sunbirds of which several beautiful varieties are easily obtainable in the hills. Of these the Nepal, Mrs. Hume's, Firetailed, Black-breasted and Yellow-rumped all do well in captivity and should live a number of years. I once kept an Amethyst-rumped for seven years and I think he eventually died of a surfeit of maggots or possibly fatty degeneration of the heart.

[In Journal Vol XI. No. 3 page 91. Dr. Satya Charan Law gave us an articles entitled "On some captive Sunbirds of Darjeeling" and in it mentioned the food on which he fed his captives].

Editor.

The Golden-Throated Barbet. (*Cyanops f. franklinii*)
80 miles North of Calcutta.

Dear Mr. Inglis,

I was out of Calcutta over the week-end-about 80 miles North of this place.

I saw your Darjeeling bird, the Golden Throated Barbet there. He was in the compound (at the edge of the jungle) in a 'Chinese Cherry' tree. It was about 7-30 a.m. He called twice and I got my field glasses onto him from about ten yards. He went shortly afterwards and I did not see or hear him again.

Thanks to Mrs. Wrangham Hardy having one in her aviary at the (next to the) Planters Club, I'm satisfied with my identification.

Hope you are well,

Calcutta,

1st. Sept., 1940.

Yours sincerely

E. A. PATERSON.

(This Barbet is, essentially, a bird of the Hills but we obtained one specimen in the Duars at an elevation of about 600 feet and the late Mr. O'Donel heard one in the forest at Gorumara in the same district at about the same elevation.

Editor.)

The Cicadas of Northern Bengal and Sikkim.

By

LT.-COL. F. C. FRASER, I.M.S., M.D., F.R.E.S.

PART III.

(Continued from page 29 of Vol. XV.)

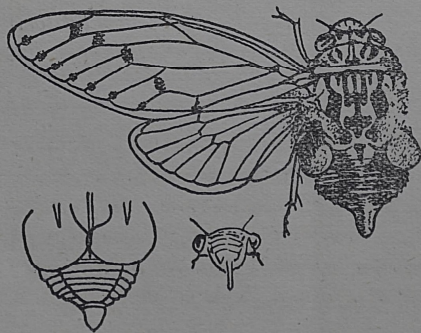
Genus *Oncotympana* Stal.

Oncotympana Stal.—1870, Vet-Ak. Fork 710; Distant, 1906, Fauna of Br. India, *Rhynchota*, 3: 118. Genotype *Pomponia pallidiventris* Stal., a Philippine species.

Head, including eyes, not quite as wide as the thorax, and about as deep as the space between the eyes; prothorax considerably shorter than thorax, the lateral margins slightly crenate and the posterior angles slightly amplified; thorax large and markedly convex; abdomen in both sexes short and broad, very broad at the operculae and tapering abruptly towards the anal segments, and shaped like a spinning-top; tympanal coverings globular and projecting markedly from the sides of the abdomen; opercula short and broad, markedly convex posteriorly and slightly overlapping at the middle line. Rostrum surpassing the the posterior coxæ; anterior femora spined beneath; wings hyaline, the forewings with two rows of spots; 8 marginal areas; costa rather flatly convex.

The genus is distributed over Indo-Malay, China, Japan and the Philippines, but only a single species is found within our limits.

Oncotympana expansa (Walker). (Fig. 1).



Carinata expansa
Walk., Ins. Saund.,
Homop., 26 (1858).

Pomponia ex-
pansa Stal., Berlin
Ent. Zeit., 10: 171
(1866).

Oncotympana expansa (Walker). (Fig. 1).

Atkins, J. Asia. Soc. Bengal, 55 : 176 (1886) ; Dist.,
Mon. Orient. Cicad. 79, pl. 5, f. 13, a. b. (1891).

Oncotympana expansa Distant, 1906. Fauna Br. Ind.
Rhynchota, 3 : 118.

Expanse of wings 85-88 mm, Length of body
24-26 mm.

Head, prothorax and thorax grass-green variegated with black, abdomen black, sparsely marked. Head green beneath with some black striæ, bright ochreous or ferruginous above changing to greenish outwardly and marked with a hieroglyphic pattern of fine black lines; prothorax with the central part ochreous, the posterior border olivaceous, the remainder grass-green with sutures finely mapped out in black, two black medial lines becoming confluent posteriorly and a stencilled-like O-spot on each side of these. Thorax with a goblet-shaped black marking on middorsum which encloses two oval green spots, and a large irregular angulated spot on each side of this. A series of triangular black spots along the anterior border. The dorsum may be shaded with ochreous, whilst outwardly, at wing bases, the green may change to a beautiful sky-blue. Abdomen dull back, including the opercula and tympanal coverings. On the anterior part of middorsum, a triangular greenish spot enclosing a black triangle, and laterally bordering the tympanal coverings, two pale rounded spots coated with silky white hairs. Wings with membrane hyaline, venation at basal half ochreous, black distally. Two rows of black spots border the marginal cells, 7 distal ones and 6 proximal, the latter the larger and most conspicuous. Legs greenish, distal ends of tibiæ and tarsi black.

Female. Expanse as for male but length of body rather shorter. General colour more ochreous than grass-green but marking entirely similar. Abdomen without the bulging tympanal coverings and therefore narrower at base and with the anal end more tapered and elongate. A broad band completely encircles the base and a second one the apex of

the abdomen, pruinosed chalky white and therefore very conspicuous. The basal segments more olivaceous and with a more extensive coating of glossy hairs.

Distribution: Northern Bengal, Sikkim and Assam. There is a single pair of this curiously shaped species in Mr. Lindgren's collection. Nothing has been recorded about its song or habits, but the size of the opercula indicates the "noisy, raucous" type of songster. Two other species are found in the Himalayas and may possibly, and, I think, very probably extend to Sikkim and Bengal. They are:—*O. obnublia* (Distant) from the Simla States and Gharwal which has the opercula palely coloured instead of dull black, as in *expansa*: the head is also narrower than the latter species. *O. melanoptera* (Distant) from Mussoori, which is easily distinguished from the two foregoing, in that the opercula just fail to meet, instead of overlapping.

Genus *Rustia* Stal.

Rustia Stal., Hemip. Afr. 6 : 8 (1866); Distant, 1892, Mon. Cicad. 125. Genotype : *Cicada dentivitta* Walker.

Head including eyes nearly as wide as thorax but not as deep as the space between eyes; frons prominent; rostrum extending back as far as the hind coxæ. Prothorax nearly as deep as thorax, the lateral margins nearly straight, the posterior angles slightly ampliate. Thorax convex; abdomen elongate, its sides almost parallel, tapered towards the anal end; tympanal coverings narrower and shorter than the cavities, which are thus partly exposed; opercula small, convex posteriorly, not meeting at middle line. Anterior femora spined beneath; wings hyaline, the forewings with a single row of marginal spots, the hindwings with only 5 apical areas, costa of forewing markedly convex. Genotype *Cicada dentivitta* Walker.

This is a genus of small species compared to those which have already been discussed. They have a low, cricket-like and somewhat musical if monotonous song. They are to be found on the under sides of the twigs or small branches rather than on the main trunks of trees.

Two species are known from North India but I can find no report of any actually from North Bengal or Sikkim, so that two females of *Rustia dentivitta* in Mr. Lindgren's collection, from Kalimpong, constitute a new record.

Rustia dentivitta (WALKER). (Fig. 2.)



Cicada dentivitta Walker. 1867, J. Ent. 1 : 304; Distant, 1892, Mon. Cicad. 125, p. 8, f. 14, a. b.



Rustia pedunculata Stal., 1866, Berlin Ent. Zeit. 383, var. *amussitata*.

Rustia dentivitta
(Walker). (Fig. 2.)

Tibicen amussitatus Distant. 1888, Ann. Mag. Nat. Hist. (6) 1 : 373.

Rustia amussitata Distant, 1892, Mon. Cicad. Orient. 126, pl. 12, f. 16, a. b.

Rustia dentivittata Distant. 1906, Fauna Br. India, *Rhynchota*, 3 : 125, f. 55.

Male. Expanse of wings 32-40 mm. Length of body 12-14 mm.

General colouring dull ochreous with restricted black markings as follows:—Head with a large black spot on inner side of each eye, and a smaller one on frons just in front of latter, 2 longitudinal lines, which starting as triangular spots on frons, are continued, after a sutural break, across vertex of head and dorsum of prothorax, becoming confluent at posterior border of latter or interrupted on dorsum of latter; a submarginal line on prothorax, some spots or lines behind each eye and four lines on dorsum of thorax. Abdomen with a row of black spots laterally on tergites; middorsal black spots on the basal 2 or 3 segments, and a lateral streak on the end or apical segments. Legs entirely yellow. Wings hyaline, venation in both pairs ochreous save for the distal ends of veins which are black;

7 marginal fuscous spots on the veins in the marginal areas, the anterior 4 or 5 of which are more or less confluent.

In the variety *amussitata*, the bordering fuscous spots on the forewings are largely obsolescent, only a single apical or some 2 or 3 apical poorly marked ones being present. The female does not differ, save in its genitalia, from the male.

Distribution : Extends right across the Himalayas into Burma and Indo-China. A second species, *R. tigrina* Distant may possibly be found within our limits. It is distinguished from *dentivitta* by its somewhat shorter rostrum and by extensive black markings on the head, prothorax, thorax and abdomen.

(To be continued.)

A Valuable Donation to the Museum.

Through the generosity of Mr. E. G. L. Webb we have acquired a nice collection of birdskins from the Duars.

We have not had time yet to go through the collection but know it contains such valuable specimens as the Great White-bellied Heron, the Lapwing and a head and neck of the White-fronted Goose all shot in the Duars.

Notes on the above mentioned species will appear in our Journal.

Curator.

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Printed by J. N. GHOSH,
The Star Printing Works, 30, Shibnarain Das Lane, Calcutta
and Published by
Mr. C. M. INGLIS, Natural History Museum,
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