

THE JOURNAL OF THE
BENGAL NATURAL HISTORY
SOCIETY



VOL. XXI - - - - No. 3.

Issued January 1947.

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

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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 Darjeeling and the State of Sikkim"; as well as what could be procured from the neighbouring countries of Tibet, Bhutan and Nepal.

The 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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- Vol. VI, No. 1



DRYOBATES MACEI (Vieillot)
The Fulvous-breasted Pied Wood-pecker.
Top—*an abnormal male*
Left—*normal male*
Right—*female*
About $\frac{1}{2}$ Nat. size

JOURNAL
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—
Vol. XXI—No. 3.
—

The Eastern Fulvous-breasted Pied Woodpecker

Dryobates macei macei (Vieillot)

By

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

(With a coloured Plate)

with

a Note and Photograph

By

W. A. S. LEWIS, O.B.E., I.C.S.

There are a number of Woodpeckers of this Genus some have the back black and others have it barred with white ; the present species is one of the latter. Another Woodpecker with a barred back is found in our area it is the Darjeeling Pigmy Woodpecker (*Dryobates nanus semicoronatus*) but this species is smaller in size, $5\frac{1}{2}$ inches in length and has only the occipital crest crimson ; whereas the fulvous-breasted Pied Woodpecker measures $7\frac{1}{2}$ inches and has the whole crown that colour.

Field identification : Easily recognizable by its barred black and white upper plumage and crimson crown in the male. It prefers open forest or shade trees in the tea ; goes about in pairs and is not shy.

Description.—The coloured plate will suffice for a description of this bird ; the female differs from the male in having the crimson on the head replaced by black.

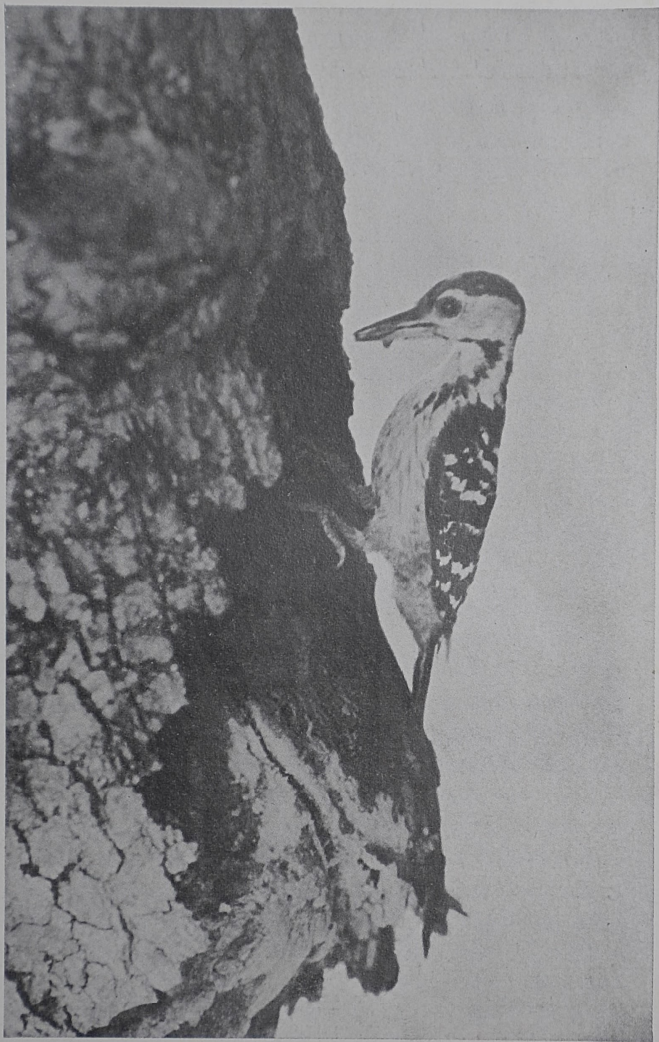
I obtained an abnormal coloured male in the Moraghat forest in the Duars, on the 24th February 1930. The chief difference is that the whole of the lower plumage, except the chin and throat, is splashed with crimson. It is the top figure in the coloured plate.

Distribution in our area.—In the Darjeeling district Stevens found it as high as 3500 feet in the Rungbong Valley, but it is, usually, a bird of lower elevations. In the Duars it is very common all over the plains.

Outside our area.—It is found from about Murree eastwards through Nepal, East Bengal to Assam and Manipur also from the vicinity of Calcutta, Madhupur and Burdwan to Akyab in Arrakan.

Habits.—A very common Woodpecker in the Duars frequenting forests, and the clearings in them, also trees in open country, the shade trees in tea and it also enters gardens. It prefers open forest to that which is dense and goes about in pairs. It is not at all shy and allows itself to be observed at close quarters. Stuart Baker says it has a squeaking voice. Its food consists largely of ants found both on trees and on the ground.

It most commonly breeds below 2000 feet but Marshall took a nest at Murree as high as 6500 feet and Hutton one at Mussoorie at 5500 feet. The principal breeding months are April and June and the nest-holes are, usually, in small trees and between 3 to 10 feet from the ground. They are excavated either in the trunk or branches, usually in sound wood but not always so. Stuart Baker records one "made in a hard-wood post of a cattle pound." The same naturalist says the male, undoubtedly, does the greater part of the incubation and that the birds sit very close on the nest. The eggs number 3 to 5 and are the usual white colour. Stuart Baker gives the average measurements of 20 eggs as 22.2×16.4 mm.



The Eastern Fulvous-breasted Pied Woodpecker, Cock at the nest.

Copyright W. A. S. Lewis.

Note by W. A. S. Lewis.

According to Blanford (Fauna of British India) this woodpecker occurs throughout Lower Bengal as well as along the base of the Himalayas, and he describes it as "common round Calcutta". It can certainly be seen quite often in the more or less wooded country up the Jessore road, but it is nothing like as common as the Golden-backed woodpecker, and not so obtrusive.

I had been on the look-out for a nest for the last three or four years, and at last found one on 25th June, 1944, in a clump of mango trees where I had seen the birds and searched unsuccessfully in previous years. It was only about 5 feet from the ground, but the hole was in the underside of a horizontal branch, where the wood was slightly rotten, and one would not have noticed it unless one stooped to look under the branch. I had been looking for a more orthodox woodpecker's hole in a vertical surface.

Both birds were off the nest collecting food, and there were probably newly hatched young in it. I could not hear any sound from within. I tried to take some photographs from a hide erected at rather close quarters. The hen bird kept at a good distance, but the cock (distinguishable by his crimson crown and occiput, which are black in the hen) made several attempts to approach the nest. He came onto the far side of the branch near the base, and worked his way round underneath and out towards the nest, but lost his nerve every time he got within 2 or 3 feet of it and flew back to his mate who had been watching the proceedings from a more distant branch in a state of considerable anxiety. The call note, or perhaps more properly the alarm note, uttered in the vicinity of the nest was a sharp "kik" or "kak". I am not sure whether both birds uttered it or not, or whether it is their only call. I do not think I have heard any other.

I tried again on the 8th July. This time I was hampered by showers of rain, and as usual once the monsoon begins, my focal-plane shutter was giving trouble, so that

I had to use a makeshift affair as a substitute. This time the hen was nowhere to be seen, although the cock was visiting the nest with food every 20 or 30 minutes. He was no longer shy of the hide, but his movements were so quick that it was a little difficult to catch him at rest in a suitable pose at the entrance to the nest. I got a few photographs, one of which I hope can be reproduced as a plate accompanying this note. The bird is as black and white in general appearance as the photo suggests, except that the dark part on the top of the head is crimson, and there is also a crimson patch under the tail. The "fulvous breast" does not seem to amount to more than a slight brownishness about the white of the lower parts.

The photograph looks correct if viewed as if the bird were in an upright position clinging to vertical surface, but in fact it is clinging to the under surface of the branch with its back parallel to the ground.

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

By

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

PART VIII.

With a half tone plate

Continued from Vol. XVII. page 119

8. The Indian Jungle Myna *Æthiopsar fuscus fuscus* (Wagl.)

Field identification :—Very similar to the Common Indian Myna but darker and greyer also, most often, found in scrub jungle or light forest ; but it does come into gardens etc. Easily recognized by the absence of any bare patch on the side of the head and by its small erect crest at the base of the upper mandible.



Aethiopsar Fuscus Fuscus (Wagl.).
"The Indian Jungle Myna."



Sturnopaster Contra Contra (Linn.).
"The Indian Pied Myna."

Description :—Top and sides of the head black, rest of upper plumage dark brownish—grey; scapulars bronzed brown; a white patch at the base of the outer flight feathers; the central feathers of the rounded tail are narrowly, and the others broadly, tipped with white; lower plumage deep ashy—grey, changing to ashy—brown on the breast and flanks; abdomen paler and under tail coverts whitish.

The sexes are alike.

We have an almost wholly albino specimen presented to us by Lt. Col. D. I. Macpherson obtained near Dacca in 1929. Except that the wing and tail are of the usual colour the whole of the body is white. There is some white on the scapulars and the whole of the tail is very broadly tipped with white. We do not know what the colour of the soft parts were.

The length is about 9"; wing 5"; tail 3" and tarsus 1.45"

The colours of the soft part are :—Bill orange-yellow with basal half deep blue; iris bright yellow; legs either chrome or orange-yellow. *Young birds* are brown, darker above and paler beneath, with a fulvous tinge on the abdomen and that colour beneath the tail. "The bill is wholly yellow and the legs paler chrome; iris glaucous blue-grey". (*Stuart Baker*).

There is a South Indian bird in which the iris is grey, or pale blue-grey, instead of bright yellow. It is said to be a browner race and has been separated as *Æthiopsar fuscus mahrattensis* by some naturalists. Whistler gives its distribution as "the Shevaroyes and down the Western Coast, chiefly on the Ghats, from Ahmedabad to Cape Comorin".

Distribution :—The typical race, with the bright yellow iris, is found over most of the rest of India and Burma except in the desert areas and driest part of the North-West Province. Neither Stevens, Shaw nor ourselves have found it in Sikkim. It is said to ascend the Himalayas up to

5,000 ft. but not with us. We obtained specimens in the Darbhanga District of North Bihar on a couple of occasions in October but it was rare there probably as there is no jungle.

Habits:—In habits it resembles those of the Common Indian Myna except that it is partial to scrub jungle and light forest. It is common round villages where there is scrub land nearby and, sometimes, enters gardens. It is often seen attending cattle, with other Mynas, sometimes sitting on their backs hunting for ticks and is found in parties or small flocks. It feeds on insects, grain and fruit and we have noticed them feeding on insects, or nectar, from the flowers of simul trees (*Bombax malabaricum*.)

In the Nilgiris Jerdon found the South Indian race clinging to the tall stems of the large *Lobelia*.....feeding on the small insects (bugs chiefly) that infest the capsules of that plant. They are beneficial birds. The Indian Jungle Myna is a shyer bird than the common one and is, perhaps, less noisy, Its flight is the same.

According to Hume the breeding season is from March to July but Baker considers May and June the principal breeding months. Whistler, on the other hand, gives this as April.

It often breeds in colonies nesting in holes in trees at variable heights from the ground sometimes only a few feet up or, at other times, as high as 40 feet from it. They also make use of holes in thatched roofs, walls etc. Tytler found them breeding in holes in old temples etc. at Dacca. Baker "found it nesting far from any human habitations and quite common in deserted cultivation clearings, bamboo and scrub jungle and thin forest" (*Nidification of Birds of the Indian Empire Vol. II p. 529*).

The nest is similar to that of the Common Indian Myna but moss is often incorporated and there is, generally, a more definite lining of softish feathers.

The eggs number from 3 to 6 and are similar to those of the Common Indian Myna in shape and colour. Baker received a clutch of eggs from Dodsworth, taken at Jutogh, in which two of the eggs were pea-green in colour. The average size, given by Stuart Baker, is 28.9×20.9 millimetres.

No record of length of life in captivity was kept at the Alipur Zoological Gardens in Calcutta.

Finn mentions a very tame one that used to fly about the Indian Museum compound and which "seldom failed to look me up early in the morning though I did not usually feed him."

The Vernacular names for these birds are *Pahari Maina*, *Jhonti Maina* in Hindi; *Jhont Salik*, *Jungli Salik* in Bengali.

The plate was drawn by Mr. J. Vallis from water colour sketches by the writer.

(To be continued)

Darjeeling Bird Notes—1946.

MISCELLANEOUS.

By

V. S. EDWARDS

The following are a few miscellaneous notes to complete the series, published in the Journal, during the past four years.

(24) *Cissa chinensis chinensis*

The Indian Green Magpie.

It is commonly known that, after death and also in unhealthy birds, the colours of this bird change from green and red to blue and brown. A similar change has been noted both by W. H. Matthews and myself, in birds in

flight ; they have been seen as green and red while perched on trees and then in flight, in bright sunshine, as blue and brown.

(572) *Turdus rubrocanus rubrocanus.*

The Western Grey-headed Thrush.

In addition to recent records, this species has also been seen at Sonada, 6500 ft. in February.

In previous notes, T. C. Jerdon's record of this bird had been overlooked ; he wrote that he procured a few specimens at Darjeeling, in winter only ; and that it was not very common there, frequenting open forests. This was in about 1858/59 when he spent a year in Darjeeling on sick leave. (He also spent most of 1867/68 there while engaged in writing his *Manuals of Fishes and Reptiles.*) At one time, this author's 'Birds of India', 3 vols. published in 1862-63, fell into disfavour and its author looked on as unreliable owing to alleged inaccuracies, but it seems to the writer that somewhat scant justice has been done to him. The writer has certainly found Jerdon's records of birds round Darjeeling to be largely accurate, even after a lapse of over eighty years. In his supplementary notes to 'the Birds of India', published in 'Ibis' in 1871-72, he admittedly seemed to agree with a theory that had been put forward that the above species was only another phase of *The White Collared Blackbird* and that the two species should be merged into one. This theory did not last very long, for by 1890, Oates was able to write "This species and *albicincta* were at one time thought to be the same, but no one now doubts their distinctness from each other."

In judging the work of these early writers it should, in justice to them, be remembered that they were doing pioneer work and the material they had to work on was very scanty in comparison with the collections that are available, for study, to-day.

(526) *Phoenicurus frontalis.*

The Blue-fronted Redstart.

(532) *Phoenicurus ochruros rufiventris*

The Eastern Indian Redstart.

These are both winter visitors to Darjeeling and Neighbourhood, the former more common than the latter, varying it would seem, though further information is needed on this point, with the temperature.

The majority of migrating *rufiventris* go down to the plains to winter but some in mild years remain in and around Darjeeling. *Frontalis* are common in the winter from November till well on into April; in mild winters it seems to be the immature birds only that descend from the higher ranges, being only distinguishable from *rufiventris* by the black tips to the tail feathers, whereas in a very cold spell, such as the heavy snowfall early in January 1945, these immature birds moved down to lower levels and their place taken by large numbers of adult birds in full blue plumage. At Namring, 3500ft. a short time after the fall of snow which occurred down to below 5000ft. there was an uncommon invasion of Redstarts, one *frontalis* and the rest *rufiventris*.

 Tails I Win.

I had, by devious routes, arrived at No. 3 I. G. H., Poona for the purpose of being skingrafted. Little did I know at the time what this would mean and as I had very little alternative I eventually found myself on the 30th June, with an enormous gash in my stomach over which was a thing which looked like a large pink suitcase handle. Days, weeks and months went by until the suitcase handle was attached at one end to my wrist and the other to the middle of my shin. This was the 9th operation and I was at the end of my tether both mentally and physically.

The surgeon specialist, a Major, another best of his kind, was mad keen to shoot big game in India, having only just arrived in the country, so it was no difficult matter to persuade him that if (a) the numerous operations were successful and (b) he would give me ten days leave, I would make every effort to get him a tiger.

This was no idle boast as prior to my "confinement" I had literally been feeding a tiger to show to various jungle training classes and as I knew his rounds I could usually manage to make him kill within 3 days.

However, after whetting the M.O.'s keenness to a razor edge, it was arranged to leave on the 1st December and return on the 10th.

All arrangements were made before hand and they all fell through so that we had no tie-ups, no odd job man and no transport.

This wasted three days meanwhile the M.O. was being coached in what to do and when to do it—where to shoot and which end was which—so that when two very wild buffaloes arrived, he was almost word perfect. I, unfortunately, still had enormous bandage on my leg and one on my arm and felt rather shaky as well, so did not feel competent to sit up with my friend.

The first night we tied up a leopard sprang on the buffalo, a well set up beast, which began to bellow and woke up the snoozing shikari.

He switched on his torch and said he saw a leopard on top of the *boda* which was prancing about. However a few seconds after the light was switched on, the leopard switched off and vanished.

The next night the kill was untouched. It was a pitch black night and the tiger's pug marks had passed within 10 feet of the sleeping *boda*.

The third night, after all necessary precautions had been taken and all eventualities discussed, the M. O. climbed into his machan and awaited his prey.

I had told him under no circumstances whatsoever to fire unless he was dead sure of killing. He had a double 500 with one black powder cartridge and 30 rounds with nitro powder. I told him to throw the black powder one

away. He had shown a good group at 20 and 50 yards so that, barring the one thing which did happen, success was imminent.

At precisely 6 a.m. I heard a shot, not followed by another, so presumed it was a miss. I got up, made and swallowed my breakfast, and went to find out what had happened, accompanied by a local shikari.

I met P. the M. O. and he told me the following story :—

He had stayed awake most of the night and neither seeing, nor hearing, anything went to sleep at about 4 a.m. He was awakened by he didn't quite know what and, against all advice, switched on his torch straight away.

There was no *boda* !!—but just disappearing down the hill were the kill's hind quarters and beyond them a pair of glowing eyes !

The sound of dragging receded and silence reigned once more.

Some 10 minutes later he heard a faint sound from the tie up tree and, as these sounds continued, he turned on his light—Lo and behold, there was the tiger EATING GRASS !

The batteries of the torch were somewhat run down owing to a short, but P. assures me he could see well enough. Meanwhile P. had got into position just as the tiger turned to go down hill again and lost sight of him behind a tree—the next second he saw him again and he appeared to be returning. He was almost broad side on and stationary. Due allowance was made for the height of the machan and so on.

On receiving the shot the tiger lurched and then lumbered off crashing into, and through, very thick lantana scrub ; the noise appeared to cease 80 to 100 yards from the machan but very soon the tiger started to roar intermittently.

No second shot was fired as the target was obscured by the smoke of the one and only black powder cartridge.

This was the tale as told me and I felt sure that the shot could not have gone where P. assured me it *had* gone.

It was now 8 A. M. and I suggested waiting till mid day for obvious reasons and, also, because the lantana would, at this time, cast the least shadow.

I had, previously, warned P. that if he wounded a beast, I was quite incapable of giving him more than advice. He agreed to this and now his troubles started. I went with him to where the tiger had received the shot and found plenty of blood. The tiger also showed evidence of his presence by the most blood curdling roars from the middle of the lantana. The noise, however, was quite stationary and we, eventually, fixed it near a sapling.

The fact that he hadn't moved meant possibly (a) that he was very sick and incapable of moving or (b) that he was very much alive with a broken leg and daring anyone to follow.

I then suggested that P. should get on to the machan and listen very carefully to the location of the noises. I also posted a man between the tiger and the nearest stream downhill.

At 3-30 I returned to P who told me that after one mighty roar at 12-30 there had been complete silence. The man in the tree reported no movement. On hearing this news I decided to leave him alone as he was probably dead or had slipped away and broad daylight would be necessary to track him.

That evening one of my assistants came in for a drink and volunteered to accompany P. on the morrow.

Well, to cut a long story short, we all set out at 10 A. M. the shikari, and myself, directing the invisibles to the tree where the tiger had last been heard.—

At last a shot and I shouted "fire again dead or alive" but no shot came.

I then heard a yell that the tiger was dead and had been dead for some time as he was blown out.

The denouement came at last—the tiger had been shot in the hind leg!—To this day no one knows why he died. He didn't bleed to death nor were his intestines severely ruptured; his liver was whole and he seemed quite sound except for a smashed hind leg.—P. did not think it possible to mistake a tiger's head for his tail and I suggested to him that I hoped, and prayed, he wouldn't make the same mistake with me when he next had me on the operating table.

The Heterocera of Tukdah, September-November, 1945.

By

D. G. SEVASTOPULO, F.R.E.S.

In a previous paper in this *Journal* (1945, XX, 20), I recorded the Heterocera collected at Tukdah in May and June 1944. The present paper deals with a collection made between the 15th September and 15th November 1945.

Notes on weather conditions have been given in my paper on the Rhopalocera collected during this visit (1946, *Journ. Beng. Nat. Hist. Soc.*, XXI,) and it only remains to add that the nights were usually cold and very unfavourable to collecting with light. Apart from unfavourable weather, the results at light were also affected by the strict rationing of kerosene, rationing so strict that it was found impossible to use one of the incandescent mantle types of lamp, and by the situation of the bungalow. This, as is so often the case in the hills, was built on a small shelf cut out of the hill-side, the back of the house was close up against an almost vertical wall of hill and the front looked out onto a small flat area. Light used, therefore, from the windows in front of the house only illuminated this flat area and then poured away into space well above the roof of the house below.

I have followed the same general lay-out and system of nomenclature in this paper as in the previous one. Because of the obvious lack of completeness of both papers, I have made no attempt at comparisons between the two periods except to mark the new species caught on this visit with an asterisk.

In spite of the small number of species encountered, I was able to take one or two very interesting insects, and also rear several species, whose early stages were previously unknown. Probably the most interesting species was a large and conspicuous Zygænid, which I found flying round high trees fairly commonly in the late afternoon. The male is black with a yellow, transverse, post-discal band on the fore wing and with the costal half of the hind wing crimson, the female is a black-veined whitish creature, and the British Museum have informed me that it is an undescribed species. How such a conspicuous insect has escaped notice is a mystery.

Saturniidae

6. *Samia cynthia* Drury (*Attacus ricini*. Bsd.)—Two batches of half grown larvæ.
25. *Læpa katinka* Westw.—Larvæ fairly common.

Bombycidae

36. **Ocinara signifera* Wlk.—One, at rest.
47a. **Andraca albilunata* Hamps.—One, at rest.
64. *Prismosticta fenestrata* Btlr.—Larvæ fairly common.

Eupterotidae

A batch of small larvæ, which I failed to rear.

Sphingidae

120. **Theretra alecto* L., *alecto*—Five larvæ.
131. *Panacra* (*Cherocampa*) *metallica* Btlr., *metallica*—Larvæ common.
136. *Rhagastis* (*Cherocampa*) *olivacea* Moore—Larvæ common.

- 136a. *Rhagastis (Chærocampa) confusa* Roths. & Jord.—
Larvæ fairly common.
- 136b. *Rhagastis albomarginatus* Roths., *albomarginatus*—
Larvæ very common.
- 137a **Rhagastis (Chærocampa) aurifera* Btlr., *aurifera*—
Two larvæ.
143. **Cechenena (Chærocampa) lineosa* Wlk., *lineosa*—One
larva.
- 184a. **Macroglossum troglodytus* Bsd.—Larvæ common,
but mostly ichneumonid. A few imagines
flying.
- 194a **Macroglossum pyrrhosticta* Btlr., *pyrrhosticta*—One
larva.
201. **Macroglossum aquila* Bsd.—One larva.

In addition to the above, an ovum of one of the Arum feeding species was found, probably either *Pergesa elpenor* L., *macromera* Btlr. or *Rhyncholaba acteus* Cr., but the resulting larva died in its first instar before it could be identified. In my previous paper I remarked that no *Macroglossum* or *Gurelea* were met with, the comparative rarity of this group is probably due to the almost complete absence of *Pæderia fatida*, one of its main food-plants.

Notodontidæ

274. *Somera viridifusca* Wlk.—A single imago at rest
and several larvæ.

Larvæ of no fewer than eight species were found, but only three produced imagines, the species recorded above, a *Ramesa* and a *Desmeocrera*, neither of which have been identified. Of the larvæ that failed to produce imagines, one was a *Stauropus* and the other four have not been determined.

Cymatophoridæ

329. *Thyatira batis* L.—Larvæ common on *Rubus* spp.
- 334b *Palimpsestis (Polyploca) bifasciata* Hamps.—One at
light.

Syntomidæ

401. *Ceryx* (*Syntomoides*) *imaon* Cr.—At rest, not common.
431. *Eressa* (*Syntomis*) *lepcha* Moore—Common at rest.
446. *Eressa* (*Syntomis*) *multigutta* Wlk.—Common at rest.

Zygaenidæ

525. *Eterusia pulchella* Koll. (*Soritia leptalina* Koll.)
Fairly common flying and at rest, the males f. *leptalina* Koll and the females f. *pulchella* Koll.
Larvæ fairly common.
551. **Eterusia* (*Heterusia*) *tricolor* Hope—Not common, flying and at rest.
556. *Eterusia* (*Heterusia*) *ædea* L., *edocla* Dbl.—Fairly common flying and at rest. One larva.

In addition to the above, two unidentified species, which are probably undescribed were found. One, determined as *Pidorus* sp., was fairly common at rest, the other, which the British Museum consider to be a *Cyclosia* and the Forest Institute a *Herpa* or possibly a new genus, was common flying round trees late in the afternoon. The male of this latter species is not unlike *Pidorus miles* Btlr. in appearance but lacks the yellow costal fascia, the female has semi-hyaline, smoky forewings and black-veined, whitish hindwings.

Cossidæ

669. **Zeuzera multistrigata* Moore—One example found dead.

Callidulidæ

692. *Callidula erycinoides* Wlk.—Two at rest.

Drepanidæ

700. *Sewa* (*Macrocilia*) *orbiferata* Wlk.—Common at rest.
701. **Macrauzata fenestraria* Moore—Three larvæ and a severed wing.

703. **Ditrigona triangularia* Moore—One at rest.
704. *Teldenia vestigiata* Btlr.—Uncommon at light.
- 720a. *Albara (Drepana) argenticeps* Warr.—Larvæ fairly common on *Rubus*. The insect described as *A. lilacina* Moore in my previous paper belongs to this species.
- 728a. *Callidrepanx (Drepana) patrana* Moore—One at rest. Larvæ fairly common.
- 728b. **Callidrepana (Drepana) obliquistriga* Warr.—Larvæ fairly common.
743. **Thymistada tripunctata* Wlk.—One pupa.
754. *Psiloreta (Oreta) obliquilinea* Hamps.—Two larvæ *Oreta extensa* Wlk., included in the previous paper, was wrongly identified and is really the present species.

Thyrididæ

809. **Camadena vespertilionis* Moore—One at rest.

Limacodidæ

827. **Thosea tripartita* Moore—Two at light.

Larvæ of two unidentified species were found, but failed to emerge.

Lasiocampidæ

911. **Metanastria undans* Wlk.—Two cocoons and one female at rest. A female from one of the cocoons failed to 'assemble'.
917. *Arguda bheroba* Moore.—Three batches of small larvæ.

936. *Trabala vishnu* Lef.—All stages common.
 948. *Paralebedu (Odonestis) plagifera* Wlk.—Young larvæ common, and two batches of ova.

In addition, larvæ of two unidentified species were found, but failed to emerge.

Lymantriidæ

960. *Orgyia postica* Wlk.—Larvæ fairly common.
 988. *Pantana bicolor* Wlk.—Common flying and at rest.
 One larva. Males 'assembled' freely to a bred female.
 999a. *Dasychira grotei* Moore.—One larva.
 1011a. **Dasychira tenebrosa* Wlk.—Two larvæ. It is possible that the insect identified as *D. bhana* Moore in the previous paper, is really the present species.
 1011b. **Dasychira feminula* Hamps.—Two larvæ. The determination is not absolutely definite as both imagines were females.
 1013. *Dasychira mendosa* Hbn.—One larva.
 1033. *Lymantria concolor* Wlk.—At light and at rest, not common.
 1038. **Lymantria mathura* Moore—One pupa.
 1043. **Lymantria bivittata* Moore—One larva.
 1049. *Gazalina chrysolopha* Koll.—Common at light.
 1055. *Euproctis divisa* Wlk.—Common at light and at rest.
 1057. **Euproctis subfasciata* Wlk.—Uncommon at rest.
 1063. *Euproctis inconcisa* Wlk.—Not common at rest.
 1092. **Euproctis lattivitta* Moore—Uncommon at rest.
 1101. *Porthesia (Euproctis) scintillans* Wlk., *limbata* Btlr.—At light, not common.
 1113. **Leucoma divisa* Wlk.—Uncommon at rest.

1120. *Leucoma (Caviria) sericea* Moore—Fairly common at rest.

Larvæ of an unnamed, black-spotted *Leucoma*, which matches nothing in the British Museum, were also found.

Arctiidæ

1159. *Diacrisia (Spilosoma) multiguttata* Wlk., *pallidior* Roths.—At light, not common.
1179. *Diacrisia (Spilosoma) casigneta* Koll.—A few larvæ.
1200. *Diacrisia (Thyrgorina) melanosoma* Hamps.—One at rest.
1242. *Cretonotus (Phissama) transiens* Wlk.—A few at light, also larvæ.
1251. *Callimorpha plagiata* Wlk.—A few larvæ.
1266. *Nyctemera plagifera* Wlk.—Not common flying and at rest. Also larvæ.
1290. *Chioncema (Cyana) puer* Elwes—Not common at light and at rest.
1295. *Chioncema (Cyana) detrita* Wlk.—Uncommon at light and at rest.
1297. *Chioncema (Cyana) bellissima* Moore—Uncommon at light.
1315. *Agylla (Sidyma) ramelana* Moore—At light, common.
1316. **Agylla (Sidyma) bipars* Moore—Fairly common at light and at rest.
1318. **Agylla (Gnophria) albocinerea* Moore—One ab. *sericeipennis* Moore at light.
1327. *Chrysoraptia (Chrysorabdia) viridata* Wlk.—Uncommon at rest.
1333. **Lithosia (Prabhasa) flavicosta* Moore—One at light.
1336. *Lithosia (Prabhasa) distorta* Moore—Common at rest and at light. Standing on its long legs, looks very like a small chip of wood.

1341. **Lithosia natara* Moore (*antica* Wlk.)—One at light.
 1350. *Lithosia nigripars* Wlk.—Uncommon at light.
 1385. *Siccia (Aemene) taprobanis* Wlk.—Common at rest, also larvæ and pupæ.
 1416. **Ovepennis (Idopterum) dudgeoni* Elwes—One at light.
 1417. **Asura (Idopterum) anomala* Elwes—One at light.
 1424a. *Miltochrista phæodonta* Hamps.—Common at light.
 1426. *Asura (Miltochrista) undulosa* Wlk.—Fairly common at light.
 1429b. **Asura obliquilinea* Swinh.—One at light.
 1434. *Miltochrista delicata* Moore—Fairly common at light.
 1437. **Asura (Miltochrista) strigipennis* Herr. Sch.—Common both at light and at rest.
 1461b. **Asura (Miltochrista) umbrosa* Hamps.—One at light.
 1471. **Miltochrista inflexa* Moore—One at light.
 1473. *Miltochrista gratiosa* Guer.—Fairly common at light.
 1486. **Psilopepla (Nudaria) suffusa* Hamps.—One at rest.

A Nolid and two Lithosiids still remain to be identified, one of the Lithosiids is probably a new species. In addition several *Diacrisia* larvæ, which failed to emerge, were found.

The next four species were included by Hampson in the Fauna of British India in the Arctiida, they really belong to the Noctuid group Acontianæ.

1502. *Ariolica pulchella* Elwes—Common at light and at rest.
 1503. **Tyana callichlora* Wlk.—Fairly common at light.
 1505. *Tyana chloroleuca* Wlk.—Non common at light.
 1506. **Tyana falcata* Wlk.—One at light.

(To be continued)

Some Rhododendrons of the Kalimpong and

Gangtok routes to Gyantse in Tibet. May 1946

P. I. R. MACLAREN

A collection was made on the march from Kalimpong to Gyantse over the Jelep La and on the return route over the NathuLa to Gangtok, of the Rhododendrons seen by the way ; details of locality, habit, & type of bark were also noted. The only guide obtainable was a short article on the rhododendrons of the Darjeeling district by Mr. E. O. Shebbear (Journ. Bengal Nat. Hist. Soc. Vol. XV p 129.)

Though these notes are incomplete and not authoritative, having been written by an inexperienced amateur, they may prove of interest to other travellers on the Lhasa trade route, since a study of several handbooks, illustrated Plates and living specimens at Caerhayes Castle (world famous for the growing and hybridisation of this genus) enabled a large proportion to be identified with a fair degree of certainty.

1. R. ARBOREUM

Flowers : Deep red, in big dense clusters.

Leaves : 4"—6", pointed, both surfaces smooth.

Bark : Smooth and red, greyer and rougher when young.

Height : 20'—40'.

Locality : Common at 10—12,000' in Sikkim and Tibet.

2. R. CINNAMOMEUM

Flowers : Pale violet to white tinged with violet.

Leaves : Upper surface green and smooth, slight tomentum on lower. Petiole pink.

Bark : Orange, with grey scales.

Height : 5'—15'.

Locality : Common at 11,500—13,500' below Nathu La in Tibet.

3. R. (? CAMPANULATUM ? FULGENS)

Flowers : Reddish, with pink petiole.

Leaves : 3"—4", broad, cordate. Upper surface smooth and green, fairly thick greenish tomentum on lower.

Bark : Orange, very flaky.

Height : 10'—15'.

Locality : Local at 12, 500' at Changu, Sikkim.

4. R. HODGSONI

Flowers : Deep mauve red in big clusters.

Leaves : 9"—12", under surface tinged with orange.

Bark : Orange, very flaky, leaving smooth grey base.

Height : 10'—20', •

Locality : Sparse at 12, 000' at Champithang in Tibet, and at 11—12 000' below Changu in Sikkim.

5. R. FALCONERI

Flowers : yellow, medium sized, in loose clusters.

Leaves : Up to 18", thick tomentum on the under surface.

Bark : Orange, slightly flaky.

Height : 25'—40'

Locality : Sparse at 10,000' below Jeluk, and at 9—10,000' below Karponang in Sikkim.

6. R. BARBATUS

Flowers : Crimson, in thick clusters.

Leaves : 4"—6," heavily veined, both surfaces smooth green. Five in a whorl beneath the flower head.

Bark : Smooth and pink.

Height : 5'—15'

Locality : Local and sparse at 10, 500' to 12,000' below Jelep La in Tibet.

7. R. THOMPSONI

Flowers: Deep purple red, in big clusters, hanging.
Some orange pink.

Leaves: 1"—2", round. Under surface pale.

Bark: Orange leaving orange grey base.

Height: 10' - 30'.

Locality: Common from 10-12,000' in Sikkim, and in Tibet below Jelep La.

8. R. LACTEUM

Flowers: Yellow in big clusters.

Leaves: 5"—7", eight in whorl below flower head.
Petiole reddish.

Bark: No note.

Height: 20'.

Locality: Sparse at 12,000' at Gnatong in Sikkim and from 11-12000' below Jelep La in Tibet.

9. R. PENDULUM

Flowers: Yellowish—white, small.

Leaves: 1" thick tomentum on under surface.

Bark: No note.

Height: 3' - 4'

Locality: Local, on rocks at 10,000' in Amo Chu, Tibet.

10. R. CILIATUM

Flowers: White, tinged with pink.

Leaves: 2", pointed. Upper surface hairy.

Bark: No note.

Height: 6'

Locality: One patch only at 11,500' near Jeluk, Sikkim.

11. R. LANATUM

Flowers: Pale cream, spotted red inside corolla. Large,
in loose clusters. Flower stalk white,

Leaves: 2'-3'. Thick velvet tomentum on the under surface.

Bark: Reddish, scaly.

Height: 1'-6'.

Locality: Common at 11,500'-13,500' in Amo Chu, Tibet.

12. R. WIGHTII

Flowers: Pale cream, with less red spots than in LANATUM. Flower stalk pink and velvety.

Leaves: 5"-7", upper surface smooth and green, veined. Very light orange tomentum on under surface (less than in LANATUM).

Bark: Orange.

Height: 3'-10'.

Locality: Common at 13,000'-14,000' below Nathu La in Sikkim and Tibet.

13. R. ÆRUGINOSUM

Flowers: Pink or pale pink, one petal spotted with dark purple.

Leaves: 3"-5". Upper surface smooth and green, fairly thick tomentum on lower.

Bark: Smooth, orange grey.

Height: 3'-7'.

Locality: Common from 12,500'-14,000' below Nathu La in Tibet.

14. R. GLAUCUM

Flowers: Pink, with green sepals.

Leaves: 2'-3', under surface smooth and grey.

Bark: Orange—grey.

Height: 2'-4'.

Locality: Sparse at 10,500' below Changu in Sikkim.

15. R. ELAEAGNOIDES

Flowers : Blue—purple.

Leaves : $\frac{1}{4}$ " , hairless.

Bark : No note.

Height : 2' - 1'4".

Locality : Common from 13 - 14,000' in Tromo Chu and abundant at 14,300' by Kamarab (the start of the 'plateau') in Tibet.

16. R. (? SETOSUM ? RADICANS)

Flowers : Purple to violet.

Leaves : $\frac{1}{2}$ " - $\frac{3}{4}$ " , leaf edge, petiole and younger twigs hairy.

Bark : No note.

Height : 3" - 2'.

Locality : Common from 10 - 12,000' in Amo Chu, Tibet and below Changu in Sikkim.

17. R. (? SPERABILOIDES)

Flowers : White, in thick clusters.

Leaves : 1" , broad. Thick central vein. Under surface reddish—brown.

Bark : No note.

Height : 3" - 2'.

Locality : At 12,000' below Nathu La in Sikkim, and common at 10,500' - 13,500' in Tromo Chu, Tibet.

18. R. (? CAMPYLOCARPUM)

Flowers : Deep cream, red at base of corolla (inside). Hanging in graceful clusters from long flower stalks.

Leaves : 2" , rounded, both surfaces smooth and green.

Bark : Smooth and grey—brown.

Height : 8' - 15'.

Locality : Common from 10 - 12,000' in Amo Chu, Tibet, and below Changu, Sikkim.

19. R. (? GRIFFITHIANUM)

Flowers: White, large. Pink streak on outside of one petal. Loose clusters, long flower stalk.

Leaves: 2", both surfaces green. In pendant whorls below flowers.

Bark: Pink and smooth.

Height: 25'.

Locality: Sparse at 8,500' below Kamparab, Sikkim, (the lowest species).

20 R. (?)

Flowers: White or white tinged with violet.

Leaves: 6", both surfaces smooth and green.

Bark: Smooth and grey.

Height: 2' - 20'

Locality: Common from 10 - 12,000' in Tibet.

21. R. (? APODECTUM)

Flowers: Yellow or orange, with few intergradations but growing together.

Leaves: 2" - 3", pointed and veined, under surface pitted. Alternate under each head of 4 flowers.

Bark: No note.

Height: 6' - 8', in Tibet, up to 30' in Sikkim.

Locality: Abundant from 9,500' - 12,000' in Tibet and sparse at 10 - 12,000' in Sikkim.

Height of Elephants and other Matters.

Sanderson wrote :—"There is little doubt that there is not an elephant 10 feet at the shoulder in India" (Thirteen years among the Wild Beasts of India—p. 55). As regards tame animals, though I have often heard of elephants reputed to be well over 10 feet, I can only say that I, personally, have never seen one. This is very far from saying that what Sanderson wrote in 1878 is bound to be true to-day. All the elephants that I have ever seen, or even heard of, can only be a microscopic percentage of all the tame elephants in India, Burma, Ceylon, Siam and Malaya, and I am quite prepared to accept a well-authenticated exception any day I hear of it. The only point I wish to make is that, if such animals exist, they are, to say the least of it, very exceptional. I was once invited to measure a tusker reported to be seven cubits high (10ft. 6ins.) and he certainly looked very big indeed but, according to my measurement, he was only 9ft. 7ins.—the biggest live elephant I have yet measured.

So much for tame elephants. The records of proclaimed rogues measured, of course, after death and by men whom I regard as reliable in such matters, *seem* to tell a different tale.

I had better confess at once that I lost all my notes in Malaya so my readers will have to trust my memory as well as my integrity—any way my case does not rest on the accuracy of these figures, they are only, so to speak, the ripple on the surface that first made me suspect a sunken snag and prompted the "research" that I am writing about. I had recorded measurements of about fourteen rogues, excluding those that I distrusted for any reason. The average height of these was (I remember) about 9ft. 10ins. and the two biggest 10ft. 3ins and 10ft. 2 ins.. The biggest that I had personally measured was 10ft 1½ ins.

I must digress here to point out that, though it is not particularly easy to measure a live elephant accurately, to measure a dead one is generally much more difficult. He usually lies with the fore feet not in the same vertical plane so that it is necessary to measure from one of them to the

wither overlying the scapular *on the same side*; or he may have stiffened up in a posture in which proper measurement is impossible and one has to be content with the "twice-round-a-fore-foot" approximation. I have consistently rejected this approximation in my averages as well as any measurements reported "difficult to take".

From what I have seen I should put the average height of mature male elephants in captivity at about 9ft. 3ins. whereas dead rogues (*ipso facto* male and mature) appear to average about 9ft. 10ins. If this is true the question arises "Do wild elephants grow bigger than tame ones, or does a dead elephant measure bigger than a live one"?

There are those who hold that elephants actually do grow bigger wild than in captivity and suggest that Sanderson was only writing of tame animals—though, to be sure, he tells of the killing of several wild tuskers and gives the measurements of the biggest one he ever shot (p. 229) which was 9ft. 7ins. at the shoulder. They argue that, as no ordinary *kunkis* could be expected to tackle a ten-footer, he must be caught before he is full-grown, and that captivity might well stunt the prospective giant's growth. I give this argument for what it's worth, the measurements that are taken annually of all Forest Department elephants, including new captures and other growing animals, do not bear it out. If we reject this theory we are left with the alternative question "Does a dead elephant measure bigger than a live one?" and opportunities for answering this by actual experiment do not often occur. There is, however, a much simpler one which may hold the key to the whole secret namely "Does an elephant measure bigger lying down than standing up?" This appears such a straightforward question to answer by experiment that, time and again, I have promised to settle the matter once and for all at the first opportunity.

Unfortunately pressure of more urgent work (often mistaken for laziness) has always prevented me from fulfilling my promise until the other day when a good number of

elephants assembled for a Governor's shoot offered a chance too good to miss. Armed with the necessary measuring rods, tape and notebook we visited the *pilkhanx* at bathing-time and carefully measured each elephant both standing up and lying down; we also measured each round the fore foot. It is unfortunate that they all happened to be females. The only males present could not be measured, one being an untrained calf and the other a wild tusker in the "muzzy" stage of *musth* who appeared to take a deep, if somewhat stupid, interest in the proceedings from a respectful distance. Here are the figures :—

Name (& owner)	Height at shoulder :		Twice round fore foot
	standing	lying	
1 Lady Mary (F.D.) ...	7'-7"	8'-0"	7'-7"
2 Baj Kali (P. W. D.) ...	7'-11"	8'-7 $\frac{1}{2}$ "	8'-4"
3 Chand Murut (F. D.) ...	7'-8"	8'-3"	7'-8"
4 Sundar Muni (District-board) ...	7'-6"	8'-3"	8'-6"
5 Radha Rani (D. C.) calf of 20	8'-0 $\frac{1}{2}$ "	8'-5"	8'-0"
6 Belinda (D. C.) ...	8'-6"	9'-1"	8'-8"
7 Jamuna (D. C.) ...	8'-7"	9'-3"	9'-0"
8 Champa Kali (D. C.) ...	8'-5"	8'-11"	8'-6"
9 Tej Kali (D.C.) ...	7'-8"	8'-2 $\frac{1}{2}$ "	7'-11 $\frac{1}{2}$ "
10 Dharm Piyari (Mohesh Gabur) ...	8'-2"	8'-10"	7'-6"
11 Lak Begi (Mohesh Gabur) ...	7'-10 $\frac{1}{2}$ "	8'-6"	8'-0"
12 Lakhi Piyari (Jnanendra Mdl.) ...	8'-4"	8'-7 $\frac{1}{2}$ "	8'-0"
13 Chanchal Piyari (Police) ...	8'-5"	9'-1"	7'-10"
14 Chand Moti (F. D.) ...	8'-8"	9'-1 $\frac{1}{2}$ "	9'-0"
15 Tej Kali (F. D.) ...	8'-0 $\frac{1}{2}$ "	8'-6"	8'-7"
16 Dharam Piyari (F. D.) ...	8'-2"	9'-1"	8'-6"
17 Shyam Piyari (F. D.) ...	7'-11 $\frac{1}{2}$ "	8'-5"	8'-6"
18 Gaja Moti (F. D.) ...	7'-0 $\frac{7}{8}$ "	7'-7"	7'-4"
19 Chanchal Piyari (F. D.) ...	9'-1 $\frac{1}{2}$ "	9'-6 $\frac{1}{2}$ "	9'-3"
20 Sundar Kali (F. D.) ...	8'-7 $\frac{1}{2}$ "	9'-1"	8'-4"
21 Anar Kali (F. D.) ...	7'-8"	8'-2"	6'-8 $\frac{1}{2}$ "
22 Kurul Moti (F. D.) ...	7'-8"	8'-4"	7'-10"
23 Chanchal Piyari (Mr. Wrangham Hardy)	8'-2"	8'-9"	8'-0"
Average :— ...	8'-1 $\frac{1}{2}$ "	8'-7 $\frac{1}{2}$ "	8'-2"

It will be seen that, on averages, the lying-down measurements are six inches too high or, to be more precise, there is a plus error of 6.3%; in other words a 9ft. 6ins. elephant would probably measure about 10ft. 3ins. lying down. This, I believe, explains the mystery but it would be interesting to know how Sanderson avoided this error in measuring dead elephants, as he apparently did.

I have several times before tested the twice-round-a-fore-foot ratio on a small scale during annual measurements and had come to the conclusion that it was on the whole fairly correct. As will be seen it is not far out *on averages* but I had never before realized the glaring errors that are possible in individuals—Sundar Muni (4) a foot too high and Anar Kali (21) nearly a foot too low. We measured these two elephants a second time with the same results. The former is a beautiful heavy *kumeria* of over 60 and the latter a light *mirga* of about 25. On the whole, perhaps, the plus errors seem to follow weight and age and the minus errors a “washy type” and youth but, against this Belinda (6), who is a pronounced *mirga* and only about 45 years old, is a plus.

To sum up my rather involved thesis, our experiments seem to show that a live elephant measures approximately 6.3% more lying down than standing up and that the twice-round-a-fore-foot measurement is a good approximation *on the average* though there may be glaring exceptions in individuals.

E. O. SHEBBEARE.

REVIEW.

Trees of Calcutta and its Neighbourhood. By A. P. Benthall. With 274 illustrations and a foreword by Dr. K. Biswas, Superintendent, Royal Botanic Garden, Calcutta. (Thacker, Spink & Co. (1933) Calcutta) Price 25/-.

This book fills a much needed want in the study of the Trees of Calcutta and its Neighbourhood and the author is to be complimented in writing such a comprehensive and useful volume; useful both to those who study botany seriously and, more especially, to those who have no botanical knowledge but take an interest in trees and like to know the names and habitats of those they come across. It is, primarily, meant for the latter and the author having avoided technical terms as far as possible the ordinary observer will find no difficulty in indentifying any tree he sees in, or around, Calcutta, in fact the majority which occur not only there but anywhere in the valleys of the Ganges and Brahmaputra.

The writer of this Review is a non-botanist living, at present, in Bihar and has tried out the Keys on a number of trees, palms, bamboos and cycads found there, the names of which he did not know before. With the help of the Keys, descriptions and excellent illustrations no difficulty was found in identification. With regard to the illustrations I am informed that they are the work of the late Babu Phani Bhusan Das, an employee of the Sibpur Herbarium, who died about three years ago. There are 274 of these which show, as far as I have been able to test them, a high quality of accuracy.

The book consists of a Preface, Introduction, Keys, Description of Families, Genera and Species, List of books consulted and Indices to Botanical, English and Vernacular names. The Introduction is very good giving interesting accounts of the Sacred figs and trees found in the wild, in villages, country side, city, maidan and gardens, with notes on the various species and where to find the various kinds which grow on the Maidan.

The Keys cover 58 pages and are based on obvious characteristics such as the shape and size of leaves, colour, size and shape of the flowers etc. and the use of technical terms has been cut down to the minimum, making them clear and easy to follow by the non-scientific person.

The main part of the book describes the Families, Genera and Species and covers just over 482 pages. All the species are illustrated and allied forms of some of them, such as in *Citrus* etc, are given in the account of the Genera. A concise, but sufficient, description is given of each family in non-scientific language; the name of the Genus is followed by its derivation and description and the derivation of the specific names is also given, followed by the Vernacular and English ones and then, in small type, a short description in botanical language. Another description is given in the main text for the non-botanist and summaries of the economical uses and medicinal properties of each species. The descriptions of the trees, leaves, flowers and fruit are very clear and comprehensive.

The book is well got up and clearly printed and should grace the book shelf of all who are interested in trees be he a botanist or just an ordinary man interested in the beauties of nature which surround him.

C. M. I.

A general Meeting of the Bengal Natural History Society was held at the Museum on the 23rd November 1946.

1. Resolved that the Committee be re-elected with the same members for 1946-47 namely,

MESSRS. F. J. A. HART, O.B.E., I.F.S.

„ W. H. MATTHEWS

„ T. A. BALDRY

„ J. R. JOHNSON

„ A. V. PULLAN (representing the Duars)

Lt. Col. G. A. Webb, V. D.

with the following two Advisory Committee Members.

E. A. Paterson, Esq. instead of L. R. Fawcus, C.S.I., C.I.E., I.C.S, who is retiring and Miss Wolfe Murray for the Nilgiris.

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