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

## BENGAL NATURAL HISTORY SOCIETY.

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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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THE  
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OF THE  
BENGAL NATURAL HISTORY SOCIETY

EDITED BY

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

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six illustrations in the text  
and one map.*

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## Coloured Plates and Back Numbers of the Journal.

The Leaf Insect	...	...	Vol. V.	No. 2 October 1930
The Atlas Moth	...	...	Vol. V.	No. 4 April 1931
and reprinted in	...	...	Vol. XVII.	No. 2 October 1924
The Golden-throated Barbet	...	...	Vol. VI.	No. 1 June 1931
The Indian Emerald Dove	...	...	Vol. VI.	No. 2 October 1931
The Himalayan Tree Pie	...	...	Vol. VI.	No. 3 January 1932
The Yellow-billed Blue Magpie	...	...	Vol. VII.	No. 1 June 1932
The Bora Cheng	...	...	Vol. VII.	No. 2 October 1932
The Red-headed Tit	...	...	}	Vol. VII. No. 3 January 1933
The Grey Tit	...	...		
The Green-backed Tit	...	...		
Gould's Parrot-Bill	...	...	Vol. VII.	No. 4 April 1933
The Velvet-fronted Nuthatch	...	...	}	Vol. VIII. No. 1 June 1933
The Cinnamon-bellied Nuthatch	...	...		
The White-tailed Nuthatch	...	...	}	Vol. VIII. No. 2 October 1933
The Assam Black Partridge	...	...		
and republished in	...	...	Vol. IX.	No. 3 January 1934
The Rufous-necked Laughing Thrush	...	...	Vol. VIII.	No. 3 January 1935
The Purple Thrush	...	...	Vol. VIII.	No. 4 April 1934
The Eastern Palm Swift	...	...	Vol. IX.	No. 1 June 1934
The Burmese Black naped Oriole	...	...	Vol. IX.	No. 2 October 1934
The Indian Grackle	...	...	Vol. IX.	No. 4 April 1935
The Indian Green Magpie	...	...	Vol. X.	No. 1 June 1935
The Indian Purple Sunbird	...	...	}	Vol. X. No. 2 October 1935
The Indian Yellow-backed Sunbird...	...	...		
The Fire-tailed Yellow-backed Sunbird	...	...		
The Nepal Yellow-backed Sunbird	...	...		
The Black-breasted Sunbird	...	...	}	Vol. X. No. 4 April 1936
Mrs. Gould's Sunbird	...	...		
The Bengal Jungle Babbler	...	...	Vol. X.	No. 4 April 1936
The Common Indian Kingfisher	...	...	}	Vol. XI. No. 1 June 1936
The Assam Blue-eared Kingfisher	...	...		
The Great Blue-eared Kingfisher	...	...	Vol. XI.	No. 2 October 1936
The Indian Three-toed Kingfisher	...	...	Vol. XI.	No. 3 January 1937
The Brown-headed Stork-billed Kingfisher	...	...	...	Vol. XII. No. 1 June 1937
The White-breasted Kingfisher	...	...	...	Vol. XII. No. 2 October 1937
The Indian Ruddy Kingfisher	...	...	...	Vol. XII. No. 3 January 1938
The Moth, <i>Brahmea wallichii</i>	...	...	...	Vol. XIII. No. 1 June 1938
Hodgson's Broadbill	...	...	...	Vol. XIII. No. 2 October 1938
The Long-tailed Broadbill	...	...	...	Vol. XIII. No. 3 January 1939
The Painted Bush-Quail	...	...	...	Vol. XIII. No. 4 April 1939
The Burmese Red-headed Trogon	...	...	...	Vol. XIV. No. 1 June 1939
The Indian Black-crested Baza	...	...	...	Vol. XIV. No. 3 January 1940

## Coloured Plates and Back Numbers of the Journal—(contd).

The Painted Snipe	... ..	Vol. XV No. 1 June 1940
The Black-headed or Brahminy Myna	} ...	Vol. XVI No. 1. July 1941
The Indian Grey-headed Myna		
The Gold-crested Myna	... ..	Vol. XVI No. 4 April 1942
The Bank Myna	... ..	Vol. XVII No. 4 April 1943
The Duars Paradise Flycatcher	... ..	Vol. XVIII No. 2 October 1943
The Bengal Green Pigeon	... ..	Vol. XVIII No. 3 January 1944.
The Northern Golden-backed Woodpecker	... ..	Vol. XVIII No. 4 April 1944
The Himalayan Whistling Thrush	... ..	Vol. XIX No. 1 July 1944.
The Assam Spotted Babbler	... ..	Vol. XIX No. 3 January 1945.
The Northern Bay Owl	... ..	Vol. XIX No. 3 January 1945.
The Grey-winged Blackbird	... ..	Vol. XIX No. 4 April 1945.
The Indian Scarlet Minivet	... ..	Vol. XX No. 1 July 1945.

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Vol. I, Nos. 3 and 4

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Vol. III

Vol. IV, Nos. 2, 3 and 4

Vol. V, No. 4

Vol. VI, No. 1

## CONTENTS OF VOLUME XIX.

### No. 1.

	PAGES.
The Himalayan Whistling-Thrush ( <i>with a coloured plate</i> ) by W. H. Mathews ... ..	1
The Green Pigeon of the Genus <i>Crocopus</i> in Bengal by C. M. Inglis, F.Z.S., B.E.M.B.O.U ... ..	5
Note on the Bengal Green Pigeon by W. A. S. Lewis, O.B.E., I.C.S. ... ..	6
Note on Green Pigeon in Bengal by L. R. Fawcus, C.I.E., O.B.E. ... ..	8
Darjeeling Bird Notes—1943 by V. S. Edwards ... ..	9
Duck Shooting at Rarhia, Champarun District, N. Bihar by F. A. C. Munns ... ..	16
A Shooting Trip to Ladakh by Lt. Col. J. A. Shorten ... ..	20
A List of, and Notes on, the Butterflies of Calcutta by D. F. Sanders ... ..	29
A Golden Cat on the Siliguri Road by A. P. Benthall ... ..	42
Measurements of a Leopard by H. V. Blackburn ... ..	43
Measurements of a Sloth Bear by R. N. Castley ... ..	44
Measurements of a Sloth Bear Skull ( <i>with a half-tone illustration</i> ) by Van Ingen & Van Ingen ... ..	44a
Accounts of Bengal Natural History Society 1943-44 ... ..	45
Bengal Natural History Society Office Bearers & Members ... ..	46

### No. 2.

The Assam Spotted Babbler ( <i>with a coloured plate</i> ) by C. M. Inglis, F.Z.S., B.E.M.B.O.U. ... ..	51
Note on the Orange-headed Ground Thrush, breeding near Calcutta by W. A. S. Lewis, O.B.E., I.C.S. ... ..	53
An Ornithologist's Trip to Sikkim by Lt. Col. J. D. Mills ... ..	57
Some Thrilling Encounters with some of the Big Game of Burma, Gaur or Bison, by W. S. Thom ... ..	70

	PAGES.
A Supplementary Note on the Butterflies of Calcutta. With a list of the Hesperidae by D. G. Sevastopulo, F.R.E.S. ... ..	76
Do Wild Dogs hunt at night by H. V. T. Blackburn ... ..	88
A note on the Breeding Habits of Katli by W. K. Langdale Smith ... ..	89
The Late Edward Charles Stuart Baker ... ..	91
<b>No. 3.</b>	
The Northern Bay Owl ( <i>with a coloured plate</i> ) by C. M. Inglis, F.Z.S., B.E.M.B.O.U. ... ..	93
The Green Pigeon of the Genus <i>Crocopus</i> in Bengal. A Green Pigeon Shoot in the Champarun District, N. Bihar and note on other N. Bihar Green Pigeon by F. A. C. Munns ... ..	96
Some Thrilling Encounters with some of the Big Game of Burma, Gaur or Bison, by W. S. Thom	105
Encounter with a Tigress by Herbert Fooks ... ..	109
A List of the Heterocera of Calcutta by D. G. Sevastopulo ... ..	113
Record Mahseer by H. V. T. Blackburn ... ..	130
<b>No. 4.</b>	
The Grey-winged Black-bird ( <i>with a coloured plate</i> ) by C. M. Inglis, F.Z.S., B.E.M.B.O.U. ... ..	131
Lovedale District in March by (Miss) M. G. Wolfe-Murray ... ..	135
Breeding the Magpie-Robin in Captivity by C. E. Underwood ... ..	139
Some Thrilling Encounters with some of the Big Game of Burma, Gaur or Bison, by W. S. Thom ... ..	141
Note about fishing in the Darjeeling District by O. M. Martin, C.I.E., I.C.S. ... ..	144
A List of the Rhopalocera of Tukdah May-June 1944 by D. G. Sevastopulo, F.R.E.S. ... ..	146
Notes from Tasmania by Rosemary Garner ... ..	155
Hodgson's Glossy Stare by Peter Murray Paym, Lt. ... ..	156
Wild Dog hunting at night by H. V. T. Blackburn	157

## ALPHABETICAL LIST OF CONTRIBUTORS.

Vol. XIX.

	PAGES.
<b>Benthall, A. P.</b> A Golden Cat on the Siliguri Road ... ..	42
<b>Blackburn, H. V.</b> Measurements of a Leopard ...	43
Do Wild Dogs hunt at night ? .. ..	88
Record Mahseer ... ..	130
Wild Dog hunting at night ... ..	157
<b>Castley, R. N.</b> Measurements of a Sloth Bear ...	44
<b>Editor.</b> Note on Himalayan Whistling-Thrush ...	4
Measurements of a Sloth Bear Skull ...	44a
Accounts of Bengal Natural History Society 1943-44 ... ..	45
Bengal Natural History Society Office Bearers and Members 1943-44 ... ..	46
Note on Orange-headed Ground-Thrush ...	56
Note on Record Mahseer ... ..	130
<b>Edwards, V. S.</b> Darjeeling Bird Notes 1943 ...	9
<b>Fawcus L. R.</b> Note on Green Pigeon in Bengal ...	8
<b>Fooks Herbert.</b> Encounter with a Tigress ...	109
<b>Garner, Rosemary.</b> Notes from Tasmania ...	155
<b>Inglis, C. M.</b> The Green Pigeon of the Genus <i>Crocopus</i> in Bengal ... ..	5, 96
The Assam Spotted Babbler ( <i>with a coloured plate</i> ) ... ..	51
The late Edward Charles Stuart Baker ...	91
The Northern Bay Owl ( <i>with a coloured plate</i> ) ... ..	93
The Grey Winged Black bird ( <i>with a coloured plate</i> ) ... ..	131
<b>Langdale Smith, W. K.</b> A Note on the Breeding Habits of Katli ... ..	89

	PAGES.
<b>Lewis, W. A. S.</b> Note on the Bengal Green Pigeon	6
Note on the Orange headed Ground-Thrush breeding near Calcutta     ...     ...	53
<b>Martin, O. M.</b> Note about fishing in the Dar- jeeling District     ...     ...     ...	144
<b>Matthews, W. H.</b> The Himalayan Whistling- Thrush ( <i>with a coloured plate</i> )     ...	1
<b>Mills, Lt. Col. J. D.</b> An Ornithologist's Trip to Sikkim     ...     ...     ...	57
<b>Munns, F. A. C.</b> Duck Shooting at Rarhia     ...	16
A Green Pigeon Shoot in the Champaran District and Note on other N. Bihar Green Pigeon     ...     ...     ...	96
<b>Murray Paymaster L. Peter.</b> Hodgson's Glossy Stare     ...     ...     ...	156
<b>Sanders, D. F.</b> A List of, and Notes on, the Butterflies of Calcutta     ...     ...	29
<b>Sevastopulo, D. G.</b> A Supplementary Note on the Butterflies of Calcutta. With a list of the Hesperidae     ...     ...     ...	76
A List of the Heterocera of Calcutta     ...	113
A List of the Rhopalocera of Tukdah May June 1944     ...     ...     ...	146
<b>Shorten, Lt.-Col. J. A.</b> A Shooting Trip to Ladakh     ...     ...     ...	20
<b>Thom, W. S.</b> Some Thrilling accounts with some of the Big Game of Burma     ...     ...	70, 105, 141
<b>Underwood, C. E.</b> Breeding the Magpie-Robin in Captivity     ...     ...     ...	139
<b>Van Ingen &amp; Van Ingen.</b> Measurements of a Sloth Bear Skull ( <i>with halftone illus- tration</i> )     ...     ...     ...	44a
<b>Wolfe-Murray Miss M. G.</b> Lovedale District in March     ...     ...     ...	135

CORRIGENDA.

Vol. XIX. No. 3.

PAGE	LINE	
116	13	( <i>Thoesa tripartita</i> ) add "Larvae common"
116	25	( <i>Cania bilinea</i> ) delete "Larvae on Castor"

Vol. XIX. No. 4.

PAGE	LINE	
135	5	(from bottom) read "Willow" instead of "Wilow"
142	14	(from top) read "shrubs" instead of "shurbs"
157	9	(from bottom) read "Sambar" instead of "Samber"



*PERICROCOTUS SPECIOSUS SPECIOSUS* (Latham)

*The Indian Scarlet Minivet*

*Male on right ; Female on left*

*About  $\frac{1}{2}$  Nat. size*

JOURNAL  
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Vol. XX.—No. 1.

The Minivets and Cuckoo-Shrikes of Bengal.

By

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

(With coloured plates).

The Minivets and Cuckoo-Shrikes, the latter, sometimes, called Caterpillar Shrikes, belong to the family *Campephagidae*, one well represented in the Old World. It resembles the *Laniidae* (Shrikes) but differs in having the rump feathers ample and with broadened, stiffened shafts.

They are arboreal, the Minivets strictly so, but one of the Cuckoo-Shrikes, at any rate, is commonly seen on the ground, it is the Pied Cuckoo-Shrike (*Lalage nigra nigra*), about which, in parts of Malay, Robinson says "it is a common garden bird, running about the lawn and searching for worms etc." Stuart Baker makes no mention of this.

The Minivets are, usually, brightly coloured birds, the plumage of the males often being scarlet and black and that of the females yellow and grey; the tints differing in the various species. The Cuckoo-Shrikes, on the other hand, are rather dull coloured birds.

There appear to be either 7 or 8 species, and subspecies, of Minivets in our area out of 20 given by Stuart Baker from the whole of India, Burma and Ceylon.

Our species can be discriminated as follows:—

**Males. Tails black and red.**

Crown and back glossy black.

Innermost secondaries with oval red

spots; breast scarlet

... The Indian Scarlet  
Minivet.

Innermost secondaries without oval  
red spots; breast crimson ... The Short billed  
Minivet.

Crown and back slaty-black; throat  
yellow; breast flame-colour ... The Yellow-throated  
Minivet.

Crown and back brown; lower  
plumage rosy ... The Rosy Minivet.

Crown and back grey or brownish-grey  
chin and throat grey, or blackish-  
grey; upper breast flame-colour ... The Small Minivet.

**Females. Tails black and yellow.**

Innermost secondaries with oval  
yellow spots; lower plumage  
bright yellow ... The Indian Scarlet  
Minivet.

Innermost secondaries without oval  
yellow spots. Forehead yellow;  
back grey; lower plumage bright  
yellow ... The Short billed  
Minivet.

Forehead without yellow; back  
largely olive-green; lower plumage  
bright yellow ... The Yellow-throated  
Minivet.

Whole back grey-brown; chin and  
throat dirty white; lower plumage  
pale buffy-yellow ... The Rosy Minivet.

Upper plumage grey, or brownish-  
grey; lower plumage white tinged  
with yellow ... The Small Minivet.

**1. The Indian Scarlet Minivet.**

*Pericrocotus speciosus speciosus* (Latham).

In India, Burma and Ceylon there are 5 races of  
this Minivet, including *semiruber*, a new subspecies  
named by Whistler from the Upper Eastern Ghats and

if one includes *flammeus*, the Orange Minivet, as Stuart Baker does, then there are 6 as follows—

1. The Indian Scarlet Minivet (*Pericrocotus s. speciosus* (Latham) from Kulu in the West to Assam.
2. The Burmese Scarlet Minivet (*Pericrocotus s. elegans* Maclelland, in Assam and Burma. This is *fraterculus* of the F. B. I.
3. The Eastern Ghats Scarlet Minivet (*Pericrocotus s. semiruber* Whistler) from the Upper Eastern Ghats and Central Provinces, Orissa, and Lower Bengal.
4. Davison's Scarlet Minivet (*Pericrocotus s. flammiifer* Hume) from S. Tenasserim, Malaya and E. Siam.
5. The Andamanese Scarlet Minivet (*Pericrocotus s. andamanensis* Tytler) from the Andamans.
6. The Orange Minivet (*Pericrocotus (s) flammeus* Forster, from S. India, common in the West; and Ceylon.

This last bird is not considered a race of *speciosus* by Whistler (*Spolia Zeylanica Vol. 23, Parts 3 and 4*).

The identification of the Scarlet Minivets rests, principally, on the number of outer primaries without a coloured spot on the outer web and, in adult males, the amount of red and black in the central tail-feathers and also size. With regard to the amount of red and black in the central tail-feathers, this does not seem to be a very good distinguishing feature, but, perhaps, with a larger series, to examine, we may be wrong. In 5 males from the Darjeeling District, which is the type locality, and 2 from the Duars, we find that in 2 from the Darjeeling District and 1 from the Duars there is *no* red on the central tail-feathers. One from the Darjeeling District has two tiny red spots on the outer web of *one* of these feathers. In 2 from the Darjeeling District the red extends for about  $1\frac{3}{4}$  inches and *touches* the shafts. In one from the Duars the

red extends from the tip for over  $1\frac{3}{4}$  inches, in one feather, the other one has some black dividing the red about  $\frac{1}{2}$  inch from the tip; the red extends for some  $1\frac{1}{2}$  inches and *does not touch* the shaft. We have seen no specimens of Whistler's *semiruber* to compare with any of our specimens. He says it occurs in Lower Bengal.

The typical race is the largest and, in the male, the first two, and in the female the first three primaries are unspotted. This is the race we get.

*Field Identification.*—A large Minivet keeping mostly to forest areas but also, sometimes, seen in the open. Easily recognized by the scarlet and black colour of the males and yellow and grey of the females. Its larger size and scarlet instead of crimson colour distinguishes it from the Short-billed Minivets. Usually seen either on trees or flitting from tree to tree in parties or pairs.

*Description.*—The coloured plate will give an idea of the colouration of the adults of both sexes but the scarlet of the male and the yellow of the female are not bright enough and the colour of the latter has been reproduced as a lemon instead of a bright yellow.

*Young males.*—Resemble the female but assume an orange, or flame-coloured, tinge in place of the yellow this is, sometimes, only noticeable on the lateral tail-feathers. Stuart Baker remarks "The changes from yellow to red in all the Minivets is very interesting, as specimens are numerous which show signs of attaining an increase of red in the old feathers prior to the moult. Birds in this stage show no signs of the barring on the upper surface and are obviously undergoing or about to undergo, the second moult."

*Nestling.*—"Upper parts olive-brown, the feathers very narrowly tipped with yellowish and with sub-terminal dark bars" (*Stuart Baker*). In a fledgeling obtained by Shaw at Mangpu, on the 25th May, 1915, the secondaries are broadly edged with yellow and there is a wing-bar of a rather deeper yellow; the tail resembles that of the female and the lower plumage is paler yellow than in that sex, with a little olive-brown on the breast.

*Distribution.*—This race is found from Kulu in the West to Assam in the East. In Darjeeling we have, on many occasions, seen it at an elevation of about 7,000 feet. It also occurs in the Duars where it is common in the hills and foothills and, during the winter, wanders a considerable distance into the plains and remains there, at least, up to early April. Hume shot it in Lower Bengal at Dacca and in Jessore, but these, possibly, belong to the race *semiruber*.

*Habits.*—The Minivets are purely arboreal birds; though Jerdon says he, on one occasion, saw the Indian Scarlet Minivet on the ground. This species is fond of forest land but will come into more open country in the vicinity of trees. We have seen them in such localities and flying over quite wide open spaces. They congregate in parties and during the nesting season pairs are come across. Their movements are active and they are often seen among the branches of rather high trees hunting for insects. It is a pretty sight to see them in flight, the red and black cocks and yellow and grey hens flying in a sort of follow-my-leader fashion. They have a cheery, mellow call.

We have no information about its breeding with us but it does so as Shaw obtained a fledgeling on the 25th May. Masson is said to have sent Coltart a clutch of eggs taken some where in the vicinity of Darjeeling. The breeding season is given as from April to June, or even as late as July. The nest is, according to Stuart Baker, "a shallow cup or saucer with upright walls, measuring over 4 inches across and barely an inch in depth inside. It is made of the finest twigs and coarse grass-stems beautifully interwoven and very lightly and strongly put together with many cobwebs to further strengthen it. Outside it is covered all over with white scraps of lichen, tiny bits of bark and a few small bits of green moss." They either place the nest on the upper surface of a branch or in a fork of a tree standing in dense forest, and are not easy to find unless one can spot the cock on the nest. According to Baker both sexes incubate. The number of eggs laid is 2 or 3 and the colour is greenish-white or pale sea-green,

marked with spots and blotches of grey-brown, or reddish-brown denser at the thick end and with smaller markings of lavender-grey. They measure about  $0.90 \times 0.67$  inches.

I can find nothing about Minivets in confinement.

The Nepali name, for this and the Assam Short-billed Minivet, is *Raja Lall* for the male and *Rāni chāra* for the female.

(To be continued)

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Darjeeling Bird Notes— 1944.

By

V. S. EDWARDS.

A few points in the Notes for 1942 and 1943 need amplifying :

Notes for 1942—Vol. 18 No. 1.

(910) *Homochlamys fortipes fortipes*

*The Strong-footed Bush Warbler*

Is resident in Darjeeling throughout the year. Its very prominent spring and summer call ceases about the middle of August. Towards the end of October, it starts calling again in the early mornings, a faint replica of its summer call; this can be heard on most mornings throughout the winter.

Notes for 1943—vol. 19 No. 1.

(554) *Muscisylvia leucura*

*White-tailed Blue Robin*

At least half a dozen pairs of these re-appeared in Darjeeling during the Spring but, with one exception, left before the rains arrived.

(403) *Molpastes cafer bengalensis*

*Bengal Red-vented Bulbul*

In reply to enquiries about this bird, W. H. Matthews says that, under favourable conditions, it is to be found up to 6500 ft.

One was seen on Birch Hill Road East on January 16th, almost the coldest day of the year; it had very evidently come up in search of food, as it was busy feeding, not at all shy but looked somewhat bedraggled and depressed by the weather.

(742) *Pericrocotus solaris solaris*

*Yellow throated Minivet*

Stevens gave this as a frequenter of hot, moist valleys of Sikkim and confined to low elevations in the Tista Valley though once recorded in March above Mangpu by G. E. Shaw and by Blanford at 10,000 ft. in Sikkim.

The one recorded on 22nd April in 1943 was on Birch Hill.

Mr. A. E. Jones of Simla records having seen a number of these birds at Tung, 5600 ft. during February 1944.

I am inclined to think that this is one of quite a number of cases of birds moving locally upwards in autumn, winter and early spring in search of food.

The Albino *Red-headed Tit* (77) recorded as having been seen on November 17th 1943, re-appeared on Observatory Hill on 11th March 1944.

(1045) *Pyrrhula erythaca erythaca*

*Beavan's Bullfinch*

Since the notes for 1943 were written very interesting information regarding this Bullfinch has been published.

In the *Ibis* for April 1944, Mr. F. Ludlow, in the second part of his 'Birds of South-Eastern Tibet' records 26 specimens, 15 males and 11 females, taken and writes "The real home of *P. erythaca* therefore lies east of Bhutan, and it is a rare bird in Bhutan and Sikkim simply because these two countries are on the westernmost fringe of its distribution. Stevens worked Sikkim for many years without encountering this species, and came to the conclusion (Journal B.N.H.S. Vol. XXX p.367) that it was confined to extreme high altitudes, but this is not so. We did not see *P. erythaca* above 12,500 ft. in summer, and found it

plentiful at Migyitum below 9000ft.....In fact it is one of the commonest birds in S. E. Tibet."

Mr. N. B. Kinnear in his notes writes "The discovery of the female of this Bullfinch clears up a long-standing blank in Indian ornithology. In April 1862, Lt. Beavan saw two males and several females on Mt. Tongaloo at about 9000 ft. He secured the males, one too damaged to preserve, but all the females escaped. Nothing more was heard of the species till Mandelli's men collected eight males in 1874, and about the same time Gammie shot a single male at Jor Bangalam near Darjeeling.....Where exactly Mandelli's eight birds came from is not known.....In 1926 Col. Meinertzhagen met with a pair at Phalut, 10,000ft., on 9th January and again, curiously enough, the female eluded capture."

One specimen taken in 1874, another just outside our neighbourhood in 1926 and one seen on March 1st 1943, suggest that the bird is an extremely rare visitor. Whether this is so, it is impossible to say because during January to early April, when this species would be likely to visit us, observers in Darjeeling have been almost as rare as the recorded visits of this Bullfinch.

(572) *Turdus rubrocanus rubrocanus*

*The Western Grey-headed Thrush*

A male bird was seen on Observatory Hill on 11 December 1944, presumably during eastern migration. This second record within two years, of a bird not previously recorded in the Neighbourhood, suggests that this area is in the direct line of migration and the previous record was not just an instance of a very rare straggler. 1944.

From October to April is by far the most interesting period of the year in Darjeeling for field workers, because during those months the greater part of both the downward and upward migrations takes place.

The number of migratory visitors that are to be seen seems to depend very largely on the amount of suitable

food that is available for them. On the downward or south easterly migration most birds seem only to stay a few hours, whereas on the upward migration many stay for considerable periods, because food is plentiful.

During January to April 1944, far larger flocks of visitors were seen than had been in evidence during the past few years; this seems to have been entirely due to the abundance of food available on the *Ilex insignis*, *Berberis insignis* and *Rhododendrons*.

The first of these attracted large numbers of *Black-throated Thrushes* (578); there are every winter a certain number of these to be seen but this year they were here in large flocks from early in January until as late as the third week of April and with them, a certain number of *Turdus ruficollis*, the *Red-throated Thrush* (577); although these two species are usually to be found together, the latter has never previously been recorded in Darjeeling.

Sunbirds seemed to prefer *Berberis insignis* to the *Rhododendrons*; one morning on Observatory Hill, there were more than twenty Nepal Fire-tailed Sunbirds feeding on bushes of the former, an unforgettable sight. The Nepal Dark Rose Finch (1076) which, for the past few winters, had only been seen very occasionally, was here in considerable numbers apparently attracted by the *Rhododendrons*.

One bird recorded during the year needs a special note.

1296) *Arachnothera longirostra longirostra*

*The Indian Little Spider-Hunter.*

On 5th, 6th & 7th February a pair of these were seen, just below the Mall east, feeding on *Leucocephalum Cannum* and were watched on each occasion for about fifteen minutes. A somewhat uncertain view had been made in early February 1943 of the same species, in the same place.

The F. B. I. says it is ordinarily a bird of lower levels than the Indian Streaked Spider-Hunter, although in Darjeeling it is said to be found up to 6,000 ft. or even higher.

The label to the specimen in the Darjeeling Museum reads 'Plains or Foothills. Stuart Baker says it ascends the hills to 6,000 ft.' which seems to suggest some uncertainty about the statement in the F.B.I. Stevens did not record the species in his Notes on the Birds of the Sikkim Himalayas and W. H. Matthews has never come across it.

Where Stuart Baker obtained his information from is not stated but his remarks about this bird being found round Darjeeling were new to the 2nd edition, so are subsequent to Oates. It is possible that the information was given him by Osmaston, who was a Forest Officer here in the first decade of the century.

The bird is definitely unknown in the southern valleys of the Neighbourhood and if it were in the habit of moving up the Tista Valley, it seems most improbable that it would not have been encountered at some time or other by one or other of the ornithologists, who have worked that area during the past four or five decades.

What is the explanation? The only solution that I can suggest, is that there is an area to the East somewhere between Darjeeling and the river level, where some of this species live and that its appearance in Darjeeling in early February, is another case of a local upward movement in search of food.

The only bird for which this could possibly be mistaken is a female Sunbird, but it is easily distinguishable by its somewhat larger size and very long beak.

Two species have to be recorded for the Neighbourhood for the first time.

(1173) *Motacilla leucopsis*

*The White-faced Wagtail*

First recorded by W. H. Matthews at Namring on 27-9-44 and later two were seen on Jalapahar football ground on 8-10-44.

(64) *Lophophanes ater æmodius*

*The Himalayan Cole-Tit*

Previously only recorded down to 8,000 ft. but a small flock appeared in Darjeeling during December 1944 and remained until they were driven away by the heavy fall of snow early in the New Year.

The following is a list of birds on which special comments are not needed, as they are not new to the Neighbourhood, but there is no record of their having been previously noted in Darjeeling.

- (214) *Pomatorhinus ruficollis ruficollis* ... 12-4-44  
*The Nepal Rufous-necked Scimiter-Babbler*
- (342) *Yuhina occipitalis occipitalis* ... 31-12-44  
*The Slaty-headed Yuhina*
- (494) *Saxicola caprata bicolor* ... 12-44  
*Northern Indian Stone-Chat or Pied Bush-Chat*
- (530) *Phoenicurus hodgsoni* ... 29-9-44  
*The Chestnut-breasted Redstart*
- (649) *Muscicapula melanoleuca melanoleuca* ... 18-10-44  
*The Indian Little Pied Flycatcher*
- (1669) *Anthipes monileger monileger* ... Breeding  
*The Sikkim White-gorgeted Flycatcher*
- (1047) *Pyrhula nipalensis nipalensis*  
*The Nepal Brown Bullfinch*

This species now seems to breed at lower levels than those given in the F. B. I. and as a pair were seen on 8th July, may well have been breeding nearby.

- (1171) *Motacilla hodgsoni*  
*Hodgson's Pied Wagtail*

An adult and one young bird were seen on 8th October, together with the pair of White-faced Wagtails mentioned above.

(1790) *Circus macrourus*

*The Pale Harrier*

On Observatory Hill on 22nd March.

January 1945.

Since the above notes were written :

(572) *The Western Grey-headed Thrush*

A pair were recorded on 26th February on the Auckland Road near Colinton, a ♀ on Observatory Hill on 9th March and a full grown ♂ on 14th March on Hermitage Road.

(64) *The Himalayan Cole-Tit*

Was recorded on several occasions during January, February and March.

(494) *The Pied Bush-Chat*

The one recorded in December was a full grown male which remained until the fall of snow. During January and February, three immature males were seen on several occasions. This species seems to be comparatively new winter visitor to this neighbourhood; it was first recorded, a year or so ago, by W. H. Matthews near Takdah T. E. at about 4,000 ft.

March 1945.

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### Shikar Tales

By

C. J. SHOREY.

I was sitting on a stool in the drawing office of Messrs. Rolls Royce Ltd., one lovely day in September 1913 when suddenly the thought of a life time on an office stool so appalled me, that I decided to go abroad. I luckily soon got an appointment as an Assistant on a Tea Garden in Cachar, in which district, except for one year in Assam, I have spent all my time. The following tales are a few of my shikar experiences, and I hope they will be interesting

as well as instructive to the embryo sportsman. Now-a-days so few of the boys that come out are keen on the Gun and Rod, most of them preferring to spend their spare time, and leave, at the club and some hill station; their chief pals being Messrs. Haig and Walker. It is a great pity for one sees such wonderful and interesting things when out with a Gun or Rod.

My first effort at big game was a Civet Cat (*Viverra zibetha*). One evening whilst strolling round the khet I saw this animal. I nearly bolted as the largest thing I had shot previously was a rabbit. I did not know then what it was and pictured myself being torn to pieces if I did not kill it outright. Well I got my cat. I did a good Red Indian-Stalk or perhaps now-a-days I should say Command crawl and was I not proud. I have that skin to this day; I am afraid, now-a-days, I take little notice of them.

To those young sportsmen who like wandering round with a Gun, a D. B., with No. 2 or S. G. shot, is quite sufficient for any of the small game such as the smaller cats and Barking deer. (*Muntiacus vaginalis*) that one often meets on a stroll round the quiet jungle edges. A collection of Civet Cats and Jackal skins can make very nice rugs. I collected about 50 Cat and Jackal skins one cold weather, never bother to shoot them in the hot weather as their skins are then poor and mangy looking, I cut off the heads and legs and sent the body skins to Messrs. van Ingen, and van Ingen, Taxidermists, Mysore. They made the skins into some lovely rugs. This Firm, in my opinion, is the best in India and I can thoroughly recommend them to any one requiring a skin to be cured and mounted, for they are not only perfect craftsmen, but artists in this line.

Now for a few of my shikar experiences. Shortly after arriving in this country, one night I heard a peculiar sound coming from the jungle like someone sawing wood. Next morning I asked my stable companion what it was. He replied "Oh only a leopard". This so excited me that I immediately wrote down for a Winchester 405 rifle, the cheapest and, what has proved, the best rifle on the market

at its price. I have had mine 30 years and it is still shoots as straight as ever. As soon as I got my rifle, I made preparation to shoot the leopard. Everybody in the Estate laughed and said you will never see anything. Not knowing how to go about things, I just sat in a tree about 100 yds. from the edge of the jungle and tied up an old goat below. The goat immediately went to sleep, so I amused myself by making a noise, like a goat! After sitting there about an hour I heard the leopard call, so I started bleating, for the old goat was still complacently chewing the cud, when out charged the leopard. I was so excited that I could not keep my rifle steady, but the leopard seemed in no hurry and after a few seconds I steadied up and shot, she dropped like a stone. It proved to be an old female, very light in colour and with extraordinary long fur, the longest I have ever seen and about 6 ft. in length. Off I started in triumph and, much to my disgust, everyone said "Just luck". At any rate I was satisfied and I felt sure some of them were envious of me. About 2 months after this, some coolies came to me and said a tiger had killed a bullock and taken it about a mile away in to the jungle; this sounds a bit thick, but that tiger had pulled a big bullock, over streams and small hills, for nearly a mile into dense jungle. Off again I went, followed by a lot of ribald remarks such as "I bet you dont get anything, except a dose of fever." I was very young in those days and definitely keen, so took no heed. The place where the kill lay, was in a fairly open ravine, bounded round by tall trees. My machan was put in one of these trees and up I climbed. After sitting for about 2 hours I suddenly saw a troop of monkeys barking and jumping about on a neighbouring trees and in looking down to see what they were making a noise about, I saw a magnificent tiger; he was standing looking at the kill. I was so surprised, and a bit frightened, for it was the first time I had ever seen a tiger, except behind bars, that I did not shoot straight away, and he turned round and started calling. This is the only time I have ever heard a tiger calling when near his kill. The noise was like just a giant cat mewing. I think its mate was close by. By this time I had pulled myself

together and, raising my rifle, took careful aim and fired and down dropped Mr. Stripes who never moved again. I then did the most foolish thing imaginable. I got down from the tree and walked over to the tiger, luckily he was dead, or else I would not be here now. This I wish to tell all young sportsmen never to do. If your animal drops, carefully pick out the heart shot, let him have one more and then wait for 5 minutes, if there is no movement he is surely dead. In some of my later experiences you will read of the enormous vitality these felines have got. This tiger was the largest and heaviest I have ever shot, measuring between posts (The only way to properly measure any animal of the feline species) 9'-4" and it took 12 men to bring him in. I put him on the Factory scales and got up to 450lb when the scales broke, much to the annoyance of my Manager, Old Boss Mounsey, but he was one of God's own and so pleased at my luck that he didn't say much. I have the skin of that tiger to this day, it lies beside my bed, a bit moth eaten for it is now nearly 30 years since I got him. I would like to say that I am a profound sceptic regarding 11' and 12' tiger, don't believe for one minute they exist, if properly measured. The proper way to measure the tiger or leopard is to place them on the ground, stretched out to their limit, place a stick at the nose and another at the tail end, and measure straight between, any tiger over 10 ft. that way is a monster. When I returned with this tiger everyone was amazed and one man "Old Tobermory Medcalfe" said I have been out 18 years and never even seen one to shoot at. I may have remarked that may be he had never bothered to go and see if he could see one. Big Game seldom come and ask to be shot, a devil of a lot of hard work has to be done to get them.

Another time I was having dinner when I heard a leopard calling whilst finishing it; my bearer, a sporting young devil, got my rifle and a goat and off I went down to the Factory near where the sound was coming. I tied the goat on to a piece of scrap iron and climbed into a nullah about 20 yds. off. Near the goat, on a slag heap, I

had placed a *hat batti*, about 10 minutes later I saw the faint outline of a leopard just on the edge of the light, and suddenly she charged across and I dropped her stone dead before she got to the goat. The next night at exactly the same time another leopard called and off I went to try the same trick again. This time, like a fool, I gave my rifle to a man to carry, I carrying my D. B. gun loaded with SG shot. I had told him not to shoot but to have the rifle in case of emergency. Well I tied up the goat, and placed the *batti* and was just scrambling into the nullah when with a rush out came spots on to the goat, my man, due to fright, blazed off the rifle, and I only had time to take a pot shot as the leopard bounded off. I hit him because about 10 months later one was caught in a trap and, when skinned, 4 SG slugs were found in his hind quarters. I would like to remark that I always, when going after leopard at night time, or tracking up a wounded animal, take my D. B. gun loaded with SG shot. I find this is quite good enough to stop any animal at close quarters and comes up easier and quicker than a rifle.

(To be continued.)

#### A Water-squirting Indian Leech

By

J. PERCY MOORE.

One of the least known of Indian leeches at the time (1927) of the publication of the Fauna of British India Volume on Hirudinea was *Foraminobdella heptamerata* Kaburaki (1921). This was based upon a unique type specimen taken by Dr. Seymour Sewell at an elevation of 7200 ft. at Nedurattan in the Nilgiri Hills, Madras.

The peculiar interest of the species lies in the presence on its back (dorsum) of a conspicuous opening between the 14th & 15th segments. This is guarded by a powerful circular closing muscle or sphincter and proves to be the outer end of a muscular-walled tube, the inner opening of which is into the stomach or mid-gut. This is not the only leech that is known to possess such a structure. Several species, all belonging to the family of so-called worm-leeches

(Erpobdellidæ) and referred to three other genera, possess a similar canal at the same segmental level but in one genus opening on the lower or ventral surface. These leeches have been found in Sumatra, Borneo, the Malay Peninsula, Africa and recently one in the Hawaiian Islands. A somewhat similar but paired opening has been described (Moore, 1930) in a leech of another family, the snail-leeches (Glossiphonaidæ). So far as I know nothing based on observation has been published concerning the function of these structures but Michælsen (1919) has called attention to their structural resemblance to the spermathecæ of certain of the little white worms (Enchytraidæ) so largely used for aquarial fish-food. However, there is no evidence that in the leeches they serve for storing sperm.

In the hope of finding these leeches, learning something of their mode of life and habits and securing some well-preserved specimens for anatomical study I visited the Nilgiri Hills in January, 1931. Fortunately a populous colony was quickly found at the east end of the lake at Ootacamund. At this point is a little delta formed of fine silt, sand and bits of rock evidently deposited during periods of flood by what was at that time a little rill draining a marshy meadow in which cattle were pastured.

None of the leeches was found actually in the waters of the lake itself but in the delta just above the water line they were abundant. They were found under stones or buried in the sand and silt generally at a level into which water flowed when they were dug out. They were seldom or only very loosely attached by their suckers to the stones but lay free on the ground. When exposed they rarely remained quiet but almost immediately burrowed into the sand or beneath stones with great agility. Although capable of swimming with the undulatory motion characteristic of many related leeches they seldom did so when placed in the lake water but dropped to the bottom and burrowed. The appearance of the living leeches was very different from the preserved and contracted type specimen. They were long and slender, hard, smooth and very slippery. They were difficult to hold and very active and vigorous, reminding one

of young eels, both in appearance, physical qualities, and activities. Like young eels they wriggled vigorously when held and when released quickly disappeared in the soil. On being seized with a forceps they struggled violently and extended the body, particularly the head end, to great length and slenderness, then flattened the body to an almost ribbon-like form, more than any erpobdellid leech that I have seen, and rolled about the forceps in a tight watchspring coil. One that was handled in this way squirted a jet of water from the gut-pore to a distance of about 4 inches but I did not see this repeated. Whether this is a common habit is unknown.

The attraction for these leeches at this point was undoubtedly the large number of small water worms of the family Tubificidæ which lived in the fine silt of both the exposed and submerged parts of the little delta, as well as the presence of small amphibious earthworms of the *Eisenia* type a little higher up on the delta above the water level but close to it. Some of the leeches, when being stupefied preliminary to preservation, disgorged fragments of both species of worms and living worms placed in the bottles of water containing the leeches were attacked and swallowed by them. Doubtless they also feed on insect larvæ and other small animals.

When confined in a jar of water where there is no opportunity to burrow they will swim like other related leeches but if there is a stone or other similar object on the bottom they usually seek concealment in the darkest crevice beneath it. From this and from observations on them both in their natural habitat and in confinement it is concluded that they are active chiefly at night. They make undulatory and exploratory movements like other leeches.

Later these leeches were found sparingly under stones in the wet meadow and in an iron spring filled with masses of the iron depositing alga. In each case they were associated with the blood-sucking leech *Hirudo asiatica* of Blanchard.

The observations recorded above show that they are expert burrowers and the hydraulic function of the gut-pore

observed in one leech suggests its possible function in filling and emptying the pharynx with water to help in forcing apart the earth or sand and make easier its penetration. Another possibility is that, like earthworms, the leeches when burrowing swallow some sand or earth and that after passing through the long pharynx it is evacuated through the gut pore.

Large numbers of egg capsules or so-called cocoons were found, especially in the rill above the delta and far up into the meadow but also in another rill, at the delta, and even in the lake itself. They are flat, yellow, horny capsules with a short projecting nozzle at the end and are attached by all of one side to the undersides of stones or more rarely to aquatic plants or sticks. Some contained eggs, some young and some were empty with an orifice at the nozzle through which the young had escaped.

In life the usual color of the leeches is about that of freshly cut beef liver, somewhat paler and grayer below. The largest ones are darker, more of a plum color or the color of beef liver that has been exposed to the air. Smaller ones are more reddish and newly emerged ones  $\frac{1}{2}$  to  $\frac{3}{4}$  inches long pink.

Desiring to make some further observations and experiments on their behavior and especially on the function of the gut-pore about 25 of the leeches were kept alive in jars of water. At Ootacamund they remained perfectly normal and active for a week. My next objective was Travancore and when I arrived at Trivandrum three days later, the water having been changed and aerated, they were still alive and very active, but the next morning all were dead. In the high altitude of 7000 ft. at Ootacamund the weather was cool, the air temperature varying from a little below 50° F. early in the morning to 63° or so at noon; on the slow boat trip through the back waters from Ernakulam to Quilon we were at sea-level and at Trivandrum the temperature during the day rose to above 90°. Probably the change exceeded the limit of tolerance of the leeches, which leaves the problem of the function of the gut pore still unsolved.

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## The Heterocera of Tukdah, May-June 1944.

By

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

This present paper deals with the Moths collected at Tukdah during a stay of two months, and covers the same period as my paper in this Journal (1945, Vol. XIX, 146-54) on the Butterflies. Climatic conditions and general notes on the locality have, therefore, been given already.

Three main methods of collecting were employed; moths were caught flying by day, usually in the sun, at light in the evening, and at rest on tree trunks, rocks, etc. by day, or dislodged from their hiding places by beating bushes and low branches of trees. In the list that follows, these have been abbreviated to 'flying', 'at light' and 'at rest'. Light was a disappointment; owing to the scarcity of kerosine it was not possible to work very late or with very much light, and, with the exception of about a week from the 14th to 20th May, it was almost completely unproductive. It is difficult to account for the productiveness of the one week mentioned above, it was moonless, but not the only moonless period in the two months; the wind and temperature seemed roughly the same as for the rest of my stay, and there was no difference in the lighting arrangements; nevertheless, for this one week moths swarmed and good catches were made every evening.

I have followed Hampson's arrangement of families in the Fauna of British India and used his names brought upto date. The numbers preceding the names correspond with the numbers given in the Fauna of British India, Moths, Vols. 1-4.

The list is, unfortunately, even less complete than it ought to have been, as a number of unidentified specimens were lost through an accident.

**Saturniidae**

1. *Actias selene* Hbn.—A few detached wings found and several larvæ.
4. *Attacus atlas* L.—A few detached wings.

6. *Samia cynthia* Drury (*Attacus ricini* Bsd.)—One cocoon and a batch of newly hatched larvæ.
23. *Dictyoploca (Saturnia) cachara* Moore—A larva of what can only have been this species, which died. I know the larva of *D. simla* Westw., the only other species of the genus listed from India.
25. *Loepa katinka* Westw.—One imago at rest and another at light. Also a number of young larvæ that correspond with the published description of the larva of this species.
28. *Salassa lola* Westw.—One female at light.
30. *Cricula trifenestrata* Helf.—An empty cocoon.

#### Bombycidæ

44. *Mustilia falcipennis* Wlk.—One male at light and several larvæ.
47. *Andraca bipunctata* Wlk.—Larvæ common but very heavily parasitised. Imagines uncommon at rest.
64. *Prismosticta fenestrata* Btlr.—Larvæ common. This species was originally described as a Bombycid but Hampson treats it as a Eupterotid. The larva shews unmistakably that it belongs to the Bombycidæ.

#### Eupterotidæ

52. *Palirisa lineosa* Wlk.—A male at light.

#### Sphingidæ

116. *Acosmeryx naga* Moore—One larva.
131. *Panacra (Charocampa) metallica* Btlr.—Two males at light. Larvæ corresponding to the description of the Western Himalayan subspecies *anfracta* Gehl. were reared from ova found commonly on Arums, but the imagines failed to emerge.
136. *Rhagastis (Charocampa) olivacea* Moore—Ova and larvæ common on Balsam.

- 136a. *Rhagastis confusa* Roths. & Jord.—One male at light and one larva.  
136b. *Rhagastis albomarginatus* Roths.—Larvæ common on Hydrangea in gardens.

It is surprising that no specimens of *Gurelca* or *Macroglossum* were seen.

#### Notodontidæ

221. *Phalera raya* Moore—One male at rest.  
254. *Pseudofentonia argentifera* Moore—The remains of a specimen in a spider's web.  
273. *Epistauropus plagiv iridis* Moore—Males not uncommon at light.  
274. *Somera viridifusca* Wlk.—Two larvæ.

#### Cymatophoridæ

329. *Thyatira batis* L.—Larvæ common on *Rubus* sp.  
334b. *Palimpsestis (Polyploca) bifasciata* Hamps.—Two females at light.  
340. *Saronaga (Palimpsestis) albicosta* Moore—A pair at light.

#### Syntomidæ

401. *Ceryx (Syntomoides) imacon* Cr.—Not uncommon flying.  
431. *Eressa (Syntomis) lepcha* Moore.—Fairly common at rest.  
446. *Eressa (Syntomis) multigutta* Wlk.—Very common both flying and at rest.

#### Zygaenidæ

498. *Clelea sapphirina* Wlk.—One female at rest.  
525. *Heterusia pulchella* Koll. (*Soritia leptalina* Koll.)—Common flying, the males f. *leptalina* Koll. and the females mostly f. *pulchella* Koll. Larvæ also common.  
556. *Heterusia (Heterusia) aedea* L., *edocla* Dbl.—Two females flying, both f. *magnifica* Btlr.  
595. *Gynaotocera papilionaria* Guer.—One female flying.

**Callidulidæ**

692. *Callidula erycinoides* Wlk.—Uncommon flying.  
 695. *Herimba atkinsoni* Moore—Common flying.

**Drepanidæ**

696. *Cyclidia (Euchera) substigmatica* Hbn.—One male at rest.  
 700. *Sewa (Macroclia) orbiferata* Wlk.—Common at rest.  
 704. *Teldenia vestigiata* Btlr.—Not uncommon at light.  
 707. *Leucodrepana obliquilinea* Hamps.—At rest and at light, not uncommon.  
 708a. *Drepana dispilata* Warr.—Two females at light.  
 720. *Albara (Drepana) lilacina* Moore—One male at rest.  
 728a. *Callidrepana (Drepana) patrana* Moore—A number of larvæ, all from one tree.  
 741. *Hyalospectra (Drepana) hyalinata* Moore—Not uncommon at rest and at light.  
 743a. *Thymistada nigrinicta* Warr.—One female at rest.  
 750. *Oreta extensa* Wlk.—Two larvæ.

**Thyrididæ**

774. *Rhodoneura myrsusalis* Wlk.—A pair at light.  
 780a. *Rhodoneura atristrigulalis* Hamps.—One female at light.  
 800b. *Rhodoneura moorei* Warr.—One female at light,  
 804. *Hypolamprus lobulatus* Moore—One female at light.

**Limacodidæ**

819. *Scopelodes unicolor* Westw.—One female at light.  
 824. *Susica pallida* Wlk.—One female at light.  
 844. *Phocoderma (Natada) velutinum* Koll.—One male at rest.  
 846. *Iragoides (Tetrablebs) crispa* Swinh.—One male at light.  
 856. *Miresa bracteata* Btlr.—Two males at light.  
 879. *Ceratonema retractatum* Wlk.—One female at light.  
 883. *Cania bilinea* Wlk.—One female at light.  
 888a. *Altha melanopsis* Strand.—One female at light. In November 1942 I was sent a large number of

larvæ of this species from the Tukdah Tea Estate, where it was feeding on the tea.

892. *Narosa conspersa* Wlk.—One male at light.

#### Lasiocampidæ

903. *Suana concolor* Wlk.—Two males at light.  
 904. *Lebeda nobilis* Wlk.—Larvæ fairly common.  
 917. *Arguda bheroba* Moore—Larvæ common.  
 924. *Bharetta cinnamomea* Moore—Two males at light.  
 936. *Trabala vishnu* Lef.—Imagines not uncommon at rest. Larvæ common. The larvæ are darker, and the imagines larger, than specimens from the Plains.  
 941. *Estigena pardalis* Wlk.—One male at light.  
 947. *Cosmotriche (Odonestis) pyriformis* Moore—Larvæ common, also cocoons, but heavily parasitised. Imagines uncommon at light.  
 948. *Paralebeda (Odonestis) plagifera* Wlk.—Larvæ not uncommon.

I also found five species of Lasiocampid larvæ, which I failed to breed through and which are, therefore, still unidentified.

#### Lymantriidæ

960. *Orygia postica* Wlk.—Larvæ not uncommon. A few males attracted by bred females.  
 988. *Pantana bicolor* Wlk.—Common flying.  
 997. *Dasychira complicata* Wlk.—Two males at light.  
 999a. *Dasychira grotei* Moore—Uncommon at light. Larvæ fairly common.  
 1011. *Dasychira bhana* Moore—Not uncommon at light.  
 1013. *Dasychira mendosa* Hbn.—Larvæ uncommon.  
 1018. *Mardara catigramma* Wlk.—One male at light.  
 1021. *Numenes patrana* Moore—Uncommon at light.  
 1022. *Pyda apicalis* Wlk.—One male at light.  
 1031. *Lymantria obsoleta* Wlk.—One female at light.  
 1033. *Lymantria concolor* Wlk.—At light and at rest, not uncommon.  
 1049. *Gazalina chrysolopha* Koll.—Common at light.

1055. *Euproctis divisa* Wlk.—Common at light and at rest.  
Also larvæ.
1063. *Euproctis inconcisa* Wlk.—Common at light and at rest. Also larvæ.
1069. *Euproctis flavinata* Wlk.—Larvæ rare.
1076. *Euproctis digramma* Guer.—Uncommon at light.  
Also larvæ.
1085. *Euproctis plagiata* Wlk.—Three females at light.
1101. *Porthesia (Euproctis) scintillans* Wlk., *limbata* Btlr  
—Common at light and at rest. Also larvæ.
1105. *Euproctis magna* Swinh.—One female at light.
1117. *Leucoma subvitrea* Wlk.—One female at rest.
1120. *Caragola (Caviria) sericea* Moore—One male at light.
1125. *Cispia punctifascia* Wlk.—One female at rest.

Several specimens were lost in the accident referred to above before they could be identified.

#### Arctiidae

1159. *Diacrisia (Spilosoma) multiguttata* Wlk., *pallidior* Roths.—Common at rest. A larger and paler race than true *multiguttata* from the North West Himalayas.
1179. *Diacrisia (Spilosoma) casigneta* Koll.—Common at light and at rest. Also larvae.
1192. *Diacrisia (Thyrgorina) obliquivitta* Moore—Common at light.
1199. *Diacrisia (Thyrgorina) rhodophila* Wlk.—Two females at light,
1200. *Diacrisia (Thyrgorina) melanosoma* Hamps.—Two females at rest.
1228. *Pericallia (Areas) galactina* Hoev., *orientalis* Wlk.—Uncommon at light and at rest. The nominotypical form comes from Java.
1242. *Cretonotus (Phissama) transiens* Wlk.—Not uncommon at light. Also larvae. A much larger race than that from the Plains.

1248. *Calpenia saundersi* Moore—A pair in cop.
1251. *Callimorpha plagiata* Wlk.—Common at rest and at light.
1266. *Nyctemera plagifera* Wlk.—Not uncommon flying.
1268. *Nyctemera varians* Wlk.—Not uncommon flying.
- 1279a. *Utetheisa (Deiopeia) lotrix* Cr.—Uncommon at light.
- 1281a. *Chionaema (Cyana) alborosea* Wlk.—Two females at light.
- 1289a. *Chionaema (Cyana) adita* Moore—Common at light.
1290. *Chionaema (Cyana) puer* Elwes—Uncommon at light.
1291. *Chionaema (Cyana) guttifera* Wlk.—One male at light.
1295. *Chionaema (Cyana) detrita* Wlk.—Common at rest.
1297. *Chionaema (Cyana) bellissima* Moore—Common at light.
1300. *Chionaema (Cyana) gazella* Moore—Rare at light and at rest.
1301. *Chionaema (Cyana) arama* Moore—Uncommon at light.
1312. *Agylla (Sidyma) apicalis* Moore—Common at light.
1315. *Agylla (Sidyma) ramelana* Moore—Not uncommon at light.
1321. *Agylla (Gnophria) rufifrons* Moore—Very common at light.
1327. *Chrysoraptia (Chrysorabdia) viridata* Wlk.—Common at rest and at light.
1328. *Chrysoraptia (Chrysorabdia) bivitta* Wlk.—Common at rest and at light.
1329. *Lithosia (Thysanoptyx) tetragona* Wlk.—One female at rest.
1331. *Lithosia (Prabhasa) venosa* Moore—One female at light.
1336. *Lithosia (Prabhasa) distorta* Moore—Common at rest and at light.
1344. *Lithosia griseola* Hbn., ab. *flava* Wlk. (*fuscicilia* Hamps.)—Common at light.

- 1348a. *Lithosia chrysophlebs* Hamps.—Common at light and at rest.
1350. *Lithosia nigripars* Wlk.—Uncommon at light.
1372. *Mithuna quadriplaga* Moore—One female at light.
1374. *Lithosia (Teulisna) protuberans* Moore—One female at light.
1385. *Siccia (Aemene) taprobanis* Wlk.—Common at rest.
- 1393b. *Siculifer bilineatus* Hamps.—Not uncommon at light.
- 1424a. *Miltochrista phaeodonta* Hamps.—Very common at light.
1426. *Asura (Miltochrista) undulosa* Wlk.—Uncommon at light.
1434. *Miltochrista delicata* Moore—Rare at light.
1459. *Asura (Miltochrista) humilis* Wlk.—Uncommon at light.
1468. *Miltochrista cuneonotata* Wlk.—Males very common at light, but no females.
1473. *Miltochrista gratiosa* Guer.—Common at light.

I still have several unidentified species and more were lost in the accident mentioned previously. I also had several unidentified larvae that failed to complete their metamorphosis.

The two next species were classified by Hampson in the Fauna of British India as Aretiidae, but really belong to the Noctuid group Acontianae.

1502. *Ariolica pulchella* Elwes.—Fairly common at rest.
1505. *Tyana chloroleuca* Wlk.—One female at light.

#### Noctuidae.

1601. *Chloridea obsoleta* F. (*Heliothis armigera* Hbn.)—Uncommon at light.
1606. *Adisura (Chariclea) marginalis* Wlk.—One male flying.
1639. *Rhyacia (Agrotis) albipennis* Btlr.—A pair bred from pupæ found in moss.
1679. *Polia (Hadena) consanguis* Guen.—One larva.

1686. *Scotogramma submarginalis* Wlk. (*Hadena incisa* Moore.) Uncommon at light.
- 1821a. *Acronycta indica* Moore—Larvæ common.
1827. *Conservula indica* Moore—Fairly common at light, also one larva.
1842. *Eriopus (Calloplistria) repleta* Wlk.—Common at light.
1848. *Eriopus (Calloplistria) indica* Btlr.—Common at rest.
1877. *Dandica (Caradrina) lineosa* Moore—Uncommon at light.
1899. *Hyphilare (Leucania) subsignata* Moore—One female at light.
1904. *Sideridis (Leucania) sinuosa* Moore—Uncommon at light.
1940. *Tiracola (Arcilasis) plagiata* Wlk.—Larvæ very common.
1963. *Canna (Diphthera) pulchripicta* Wlk.—Common at light.
1965. *Canna (Diphthera) prasinaria* Wlk.—Not uncommon at light.
1968. *Diphtherocome (Diphthera) discibrunnea* Moore—Very common at light.
- 2171a. *Callyna contracta* Warr.—Larvæ not uncommon.
2177. *Westermannia superba* Hbn. Uncommon at light.
- 2218a. *Barasa alopha* Hamps.—One male at light.
2281. *Risoba variegata* Moore—Uncommon at light.
2282. *Odontodes aleuca* Guen.—Uncommon at light.
2300. *Cosmophila mesogona* Wlk.—Larvæ not uncommon.
2317. *Clethrophora virida* Heyl. (*distincta* Hamps. nec Leech)—Two cocoons.
2318. *Maurilia (Churia) arcuata* Wlk.—Uncommon at light.
2324. *Aiteta (Capotena) truncata* Wlk. f. *analoga* Gaede—One male at light.
- 2328a. *Tympanistes flavescens* Swinh.—One male at light.
2334. *Carea nitida* Hamps.—Not uncommon at light.
- 2336a. *Carea endophaea* Hamps.—Not uncommon at light.

2349. *Moma champa* Moore—Larvæ not uncommon.  
 2353. *Trisuloides sericea* Btlr.—One male at light.  
 2381. *Sypna curvilinea* Btlr.—Larvæ common on *Rubus*.  
 2443. *Pericyma (Alamis) umbrina* Guen.—Very common at light, also f. *albicincta* Guen.  
 2472. *Arcte taprobana* Moore, f. *nigrescens* Btlr.—One male at light.  
 2500. *Parallelia (Ophiusa) arcuata* Moore—Uncommon at light.  
 2510. *Parallelia (Ophiusa) crameri* Moore—One female at light.  
 2573. *Mocis undata* F. (*Carininda archesia* Cr.)—Uncommon at light.  
 2588. *Grammodes stolidia* F.—One female at light.  
 2626. *Lycimna polimesata* Wlk.—One female at light.  
 2642. *Adris (Ophideres) tyrannus* Guen.—Three larvæ.  
 2652. *Calpe provocans* Wlk.—One female at light.  
 2653. *Calpe minuticornis* Guen.—One female at rest.  
 2690. *Plusiodonta coelonota* Koll.—A few larvæ.  
 2693. *Tinotius hyspina* Swinh.—Common at light.  
 2811. *Bleptina hadenalis* Moore—One male at light.  
 2820. *Bleptina abjudicalis* Wlk.—One male at light.  
 2853. *Hydrillodes abavalis* Wlk.—Very common at light.  
 2909. *Dichromia quadralis* Wlk.—Common flying and at light. Also larvæ.  
 2944. *Bomolocha (Hypena) obductalis* Wlk.—Not uncommon at rest.  
 2949. *Bomolocha (Hypena) lacessalis* Wlk.—Common at rest.  
 2988a. *Haritalopha biparticolor*. Hamps.—One male at light.

I had a number of unidentified larvæ, including an *Ophideres* sp., which failed to emerge. A few unidentified imagines were destroyed in the accident mentioned before, but I think the main reason for the small number of Noctuids recorded was the almost complete failure of light as a means of collecting.

## Epiplemidæ

3029. *Auzea rufifrontata* Wlk.—One at rest and one at light. Hampson includes this species in the *Uraniidæ*.
3046. *Epiplema multistrigaria* Moore—Not uncommon at light.
3059. *Epiplema restricta* Hamps.—Fairly common at light.

## Geometridæ

3088. *Sirinopteryx rufivinctata* Wlk.—Not uncommon at rest.
3090. *Thinopteryx crocoptera* Koll.—Uncommon at light.
3102. *Myrtila simpliciata* Moore—One female at light.
3112. *Metrocampa haliaria* Wlk.—One male at light.
3133. *Peratophyga cerata* Moore—Larvæ not uncommon on *Hypericum* sp.
3175. *Anonychia grisea* Btlr.—Very common at rest and at light.
3181. *Pseudopanthera (Venilia) himalayica* Koll.—Not uncommon at rest.
3199. *Eurytaphria bisinuata* Hamps.—Larvae common.
3220. *Luciaria excluda* Wlk.—Uncommon at light.
3222. *Luciaria obliquata* Moore—Not uncommon at rest.
3228. *Krananda oliveomarginata* Swinh.—One female at light.
3246. *Macaria ozararia* Wlk.—One male at light.
3267. *Hyposidra aquilaria* Wlk.—One female at rest.
3281. *Hyperythra phoenix* Swinh.—One male at light.
3285. *Psyra spurcataria* Wlk.—Larvae common.
3298. *Fascellina plagiata* Wlk.—Two larvae.
3319. *Garaeus specularis* Moore—One male at light.
3326. *Garaeus argillaceus* Btlr.—Two males at light.
3359. *Biston bengaliaria* Guen.—Not uncommon at rest.
3364. *Xandrames latiferaria* Wlk.—One female at light.
3365. *Xandrames albofasciata* Moore—Two males at rest.
3366. *Gnophus muscosarius* Btlr.—Not uncommon at rest.
3367. *Gnophus aereus* Btlr.—One female at rest.
3371. *Gnophus colarius* Guen.—Fairly common at rest.

3375. *Ophthalmodes herbidaria* Guen.—Not uncommon at rest.

The members of the next three genera are not easy to distinguish from Hampson's descriptions and I am not absolutely certain of all the identifications.

3392. *Boarmia crepuscularia* Hbn.—A female at rest.
3393. *Ectropis (Boarmia) bhurmitra* Wlk.—Larvae very common.
3401. *Boarmia comparataria* Wlk.—One male at light.
3404. *Boarmia acaciaria* Bsd.—Not uncommon at light.  
Also larvae.
3406. *Boarmia variegata* Moore—One male at rest.
3411. *Boarmia nigridoraria* Guen.—Two males at light.
3413. *Boarmia atrostipata* Wlk.—One female at light.
3446. *Boarmia albibasis* Hamps.—One male at light.
3466. *Medasina plumalis* Btlr.—A pair at rest.
3470. *Medasina mauraria* Guen.—Not uncommon at light.
3471. *Medasina parisnattei* Wlk.—Not uncommon at light.
3473. *Medasina stricaria* Guen.—Not uncommon at rest and at light.
3475. *Medasina similis* Moore—One female at rest.
3476. *Medasina interruptaria* Moore—One female at rest.
3485. *Medasina albidaria* Wlk.—Larvae not uncommon.
3491. *Archanna transfusciata* Warr.—A pair at light.
3510. *Erebomorpha metachromata* Wlk.—Uncommon at rest.
3516. *Abraxas sylvata* Scop.—Very common at rest, less so at light.
3518. *Abraxas martaria* Guen.—Not uncommon at rest and at light.
3544. *Perenia foraria* Guen.—A pair at light.
3547. *Perenia belluararia* Guen.—Not uncommon at light.
3564. *Sarcinodes aequilinearia* Wlk.—One female at rest.
3573. *Iotaphora iridicolor* Btlr.—Common at rest.
3594. *Naxidia irrorata* Moore—One female at rest.
3595. *Dysethia bicommatata* Warr.—Not uncommon at light.

3599. *Cryptoloba cinerea* Btlr.—Very common at light and at rest.
3605. *Syzeuaxis trinotaria* Moore—One at light and one at rest.
3611. *Anaitis pudicata* Guen.—Uncommon at rest.
3654. *Euphyia (Cidaria) silaceata* Schiff.—Common at rest and at light. Also larvae.
3659. *Cidaria delecta* Btlr.—A few larvae.
3665. *Cidaria aurigena* Btlr.—A few larvae.
3685. *Colostygia (Larentia) albigirata* Koll.—Common at rest and at light.
3700. *Perizoma (Larentia) maculata* Moore—Common at light.
3707. *Larentia variabilis* Warr.—Uncommon at light.
3730. *Photoscotosia miniosata* Wlk.—Larvae common on *Rubus*.
3740. *Callabraxas amanda* Btlr.—One larva.
3806. *Phthonoloba decussata* Moore—One larva.
3826. *Hydrelia subobliquaria* Moore—Not uncommon at light.
3836. *Asthena plurilinearia* Moore—Very common at rest, common at light.
3853. *Rhodometra (Sterrha) sacraria* L.—One male at light.
3857. *Scopula (Craspedia) mecyisma* Swinh.—One female at light.
- 3879a. *Scopula (Craspedia) cleoraria* Wlk., *effrenata* Wlk.—Common at rest and at light.
3883. *Scopula (Craspedia) remotata* Guen.—Common at rest.
3958. *Rhodostrophia vinacearia* Moore—Very common at rest.
3970. *Calothysanis (Timandra) correspondens* Hamps.—Not uncommon at rest and at light.
4018. *Dindica (Pseudoterpna) polyphaenaria* Guen.—One larva.

4024. *Actenochroma (Pseudoterpna) muscicoloraria* Wlk.—  
One female at light.
- 4026a. *Neocalbis elaearia* Hamps.—One male at light.
4033. *Chlorodontopera discopilata* Moore—One female at  
rest.
4122. *Osteosema (Thalassodes) sanguilineata* Btlr.—Larvae  
not uncommon on *Maesa chisia*.
4135. *Iodis (Thalera) argutaria* Wlk.—Not uncommon at  
light. Also larvae.
4140. *Berta (Thalera) chrysolineata* Wlk.—One male  
flying.

I have several species still unidentified, and a number  
of unidentified larvæ failed to produce imagines.

#### Pyralidæ

4165. *Crambus latellus* Snell.—Common at rest and at  
light.
4170. *Crambus argyrophorus* Btlr.—Uncommon at light.
4172. *Crambus nivellus* Koll.—Uncommon at light.
4177. *Crambus malacellus* Dup.—Common at light.
4441. *Macalla syrictusalis* Wlk.—Very common at light.
4460. *Stericta haraldusalis* Wlk.—One male at light.
4487. *Endotricha albicilia* Hamps.—Very common at  
light.
4526. *Pyralis elongalis* Koll.—One female at light.
4601. *Bostra marginata* Wlk.—Common at light.
4618. *Orybina flaviplaga* Wlk.—One female at light.
4631. *Mixophila renatusalis* Wlk.—Common at light.
4651. *Cataclysta blandialis* Wlk.—One female at rest.
4683. *Aulocodes colonialis* Guen.—Not uncommon at rest  
and at light.
4702. *Talanga scarpunctalis* Moore—Uncommon at light.
4705. *Stegothyris diagonalis* Guen.—Very common at rest  
and at light.
4712. *Bradina admistalis* Wlk.—Very common at light.
4786. *Zinckenia fascialis* Gr.—Fairly common at light.
4794. *Agrotera basinotata* Hamps.—One female at light.

4814. *Cnaphalocrocis medinalis* Guen.—Not uncommon at light.
4821. *Rhimphalea trogusalis* Wlk.—One male at light.
4834. *Bocchoris onychinalis* Guen.—One female at light.
4971. *Sylepta iopasalis* Wlk.—Not uncommon at light.
4976. *Sylepta quadrimaculalis* Koll.—One male at rest.
4979. *Sylepta deficiens* Moore—Not uncommon at light.
5005. *Agathodes ostentalis* Hbn.—One female at light. A very much larger race than the Calcutta one.
5015. *Glyphodes vertumnalis* Guen.—Not uncommon at light.
5030. *Glyphodes hermesalis* Wlk.—One male at light.
5034. *Glyphodes stolalis* Guen.—One female at light.
5076. *Crocidolomia binotalis* Zell.—Fairly common at light.
5077. *Crocidolomia suffusalis* Hamps.—One female at light.
5082. *Sameodes cancellalis* Zell.—Fairly common at light.
5095. *Terastia egialealis* Wlk.—One male at light.
5124. *Crocidophora flavofasciata* Moore—One male at light.
5134. *Maruca testulalis* Geyer—Not uncommon at light.
5138. *Tetridia caletoralis* Wlk.—Common at light.
5151. *Pachyzancla licarsisalis* Wlk.—Very common at light.
5184. *Noorda fessalis* Swinh.—One female at light.

I have some half a dozen species still unidentified and a number of undetermined specimens were lost.

CALCUTTA,

22nd January, 1945.

Further occurrence of the Baikal Teal

(*Nettion formosum*) in North Bihar.

I was fortunate to obtain, from a mirshikar, two fine drakes of this handsome Teal captured on the Jirmorli chaur, near Hasanpur, in the Darbhanga District on the 16th March, 1945. These people, apparently, do not know the duck as she is never brought in.

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

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#### Largest One That Ever Got Away

While fishing from a boat in the St. Lucia Narrows, Mr. J. J. Els, of Riverview, hooked something big.

The monster travelled away slowly, gradually stripping the reel of line.

Mr. M. Prinsloo pulled in the anchor and stood ready with the gaff, but the monster still went on, pulling the boat behind.

Mr Els managed to regain some line when suddenly a hippo reared out of the water with huge, gaping jaws. He had been either foul-hooked or had become entangled in the line.

The only damage done was the loss of 50 yards of pre-war line.

Some years ago Mr. Rapson hooked a whale, and Mr. P. L. King a crocodile at St. Lucia. But this new story puts both of those in the shade.

#### KINGFISH.

(From a Natal Paper)

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**BENGAL NATURAL HISTORY SOCIETY.**

*Accounts for period 1st April 1944 to 31st March 1945.*

RECEIPTS.		Rs. As. P.	EXPENDITURE.	Rs. As. P.
April 1944	Opening Balance	3,062 8 6	Superior Establishment with T. A.	6,906 3 0
	Government Grant with arrears	7,200 0 0	Inferior Establishment	768 12 9
	Municipal Grant with arrears	3,060 0 0	Mounting Charges	220 3 0
	D. I. P. Grant	2,900 0 0	Journal	1,688 12 0
	Subscriptions	1,793 13 0	Office and Miscellaneous	473 10 0
	Donations	338 1 3	Subscriptions to other Societies	25 14 0
	Sale of Journals and coloured plates	413 14 3	Purchase of Victory Bonds	3,010 0 0
	Interest on Victory Bonds	32 1 0	Closing Balance	5,757 15 3
				18,800 6 0
			Closing Balance	5,757 15 3
			Add Uncashed Cheques	1,224 11 3
			Closing Balance as by Pass-Book	6,982 10 6

**CAPITAL ASSETS.**

	Rs. As. P.
3/1957 Victory Bonds	3,000 0 0
Coloured Plates (Member's Rates)	4,305 0 0
Old Journals (Member's Rates)	2,395 0 0
	<hr/>
	9,700 0 0

The Capital Assets do not include the value of the Society's collections and furnishings.

DARJEELING,  
8th May, 1945.

CHAS. M. INGLIS,  
Curator.

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