

# CONTRIBUTIONS TO THE FAUNA OF THE MANIPUR STATE, ASSAM.

## PART IV. REPTILIA.

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### I. INTRODUCTION.

In 1945, during the World War II, Dr. M. L. Roonwal<sup>1</sup> was appointed Mammalogist to the "Field Typhus Research Team" and for the greater part of his time was stationed in Manipur (Assam). During the tenure of his field service, he conducted an intensive faunastic survey of the area in connection with "Tsutsugamushi disease (Scrub Typhus)" and collected various types of animals. Some of the scientific reports<sup>2</sup> on the collection have already been published while another is awaiting publication.

Twenty seven examples of Reptilia<sup>3</sup> were collected. They were critically examined and notes on them are recorded here.

The collection comprised 13 species and subspecies as follows :—

*Serpentes* : Typhlopidae 1, Anilidae 1, Colubridae 6, Elapidae 1, Viperidae 1.

*Sauria* : Agamidae 2, Scincidae 1.

Though the herpetology of Assam is fairly well known and scientific reports were published by Wall<sup>4</sup> and others, the reptilian fauna of Manipur has received very little attention so far. In 1905 Allen<sup>5</sup> remarked that in Manipur, Cobras or any other kind of poisonous snakes are seldom met with but non-poisonous snakes are not uncommon.

Annandale<sup>6</sup>, while writing the report on the "Aquatic and Amphibious mollusca of Manipur," agreed with Allen and noted that "Frogs and toads are not abundant. We saw no kind of water tortoise."

In the collection brought by Dr. Roonwal, there are two specimens of a rare species of snake, *Opheodryas doriae*, which was recorded from Manipur (Assam) by R. D. Oldham. Since then, it has not been collected from that area.

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<sup>1</sup> Lately Major, 15th Punjab Regiment, Indian Land Force.

<sup>2</sup> Roonwal, M. L., *Trans. Nat. Inst. Science* III, No. 2, pp. 67-122 (1949); *Rec. Ind. Mus.*, XLVI, pp. 123-126 (1949a); Roonwal, M. L. & Nath, B., *ibid.* XLVI, pp. 127-182 (1949a); and Roonwal, M. L., *Rec. Ind. Mus.* XLVII, pp. 1-64 (19 ) (in the press).

<sup>3</sup> It has been stated by Roonwal (*loc. cit.*, p. 68, 1949), that "In the Transmission of scrub typhus" reptiles (Lizards, snakes) play a very important role as a "Reservoir of infection" (normal or primary host).

<sup>4</sup> Wall, F., *Journ. Bombay Nat. Hist. Soc.* XVII, pp. 312-337 (1937).

<sup>5</sup> Allen, B. C., *Assam District Gazetteer* IX, p. 10 (1905).

<sup>6</sup> Annandale, N., *Rec. Ind. Mus.* XXII, p. 537 (1924).

All the specimens, with the exception of two snakes obtained by Major S. L. Kalra, were collected by Dr. Roonwal. The entire collection has now been incorporated in the general named collection of the Zoological Survey of India.

We wish to express here our indebtedness to Dr. M. L. Roonwal for affording us an opportunity to examine and report on this interesting material. We are grateful to Dr. S. L. Hora, Director, Zoological Survey of India, for kindly going through the manuscript and offering helpful suggestions.

The following species are represented in the collection :—

Snakes.	Lizards.
Family TYPHLOPIDÆ	Family AGAMIDÆ
<i>Typhlops d. diardi</i> (Schlegel).	<i>Calotes mystaceus</i> (Dum. & Bibr.).
4 Specimens.	7 Specimens.
ANILIDÆ	<i>Calotes versicolor</i> (Daudin).
<i>Cylindrophis rufus burmanus</i>	1 Specimen.
Smith.	
1 Specimen.	
COLUBRIDÆ	SCINCIDÆ.
<i>Elaphe radiata</i> (Schlegel).	<i>Lygosoma maculatum</i> (Dum. & Bibr.).
1 Specimen.	2 Specimens.
<i>Ptyas korros</i> (Schlegel).	
1 Specimen.	
<i>Ophedryas doriae</i> (Boulgr.).	
2 Specimens.	
<i>Natrix p. piscator</i> (Schneider).	
1 Specimen.	
<i>Natrix stolata</i> (Linn.)	
3 Specimens.	
ELAPIDÆ. †	
<i>Naja n. Kaouthia</i> Lesson.	
2 Specimens.	
VIPERIDÆ.	
<i>Vipera r. russelli</i> (Shaw).	
1 Specimen.	

## II. SYSTEMATIC ACCOUNT.

### ***Typhlops diardi*** (Schlegel).

(Diard's Blind Snake.)

1943. *Typhlops diardi*, Smith, *Fauna. Brit. India* (Rept. & Amph.), III, p. 51.

*Material*.—(i) 2 Specimens collected on 1st and 10th August 1945, from the following localities :—“ Typhus Lab. premises, 10 miles from Imphal on Dimapur Road ” Manipur, ca. 3,000 ft., and another “ found in open ground, 8 miles from Imphal town ” ca. 2,570 ft. (Z.S.I. Register Nos. 20498 & 20499).

(ii) 2 specimens collected on 1st and 4th September 1945, from the “ Army Camp ”, (Z.S.I. Register Nos. 20496, 20497).

*Lepidosis*.—4 adults (unsexed total length 290-330 mm.) have 26 cales in the midbody.

In the "Indian Museum" collection, there is a specimen measuring 340 mm. in the total length (Reg. No. 19189) collected from Manipur (Assam), on 25th February 1920, by Annandale having 26 scales in the midbody. The specimen is stouter and longer in the body length by 10 mm., than the longest specimen under report.

*Colour.*—2 specimens collected from locality (i) are brownish above and lighter below, while specimens from locality (ii) are blackish grey above and dirty white below leaving a line of demarcation between the dorsal and the ventral surfaces, but according to Smith (*loc. cit.*, p. 52.) "the two colours not strongly contrasted."

*Range.*—Assam and Burma. In Burma it has been recorded from ca. 5,000 ft.

### ***Cylindrophis rufus burmanus* Smith.**

(Laurentis Earth Snake.)

1943. *Cylindrophis rufus burmanus*, Smith, *Fauna. Brit. India, Rept. & Amph.* III, p. 97.

*Material.*—1 specimen (total length 285 mm., tail 9 mm.) collected on 28th August 1945, from Kalewa, ca. 360 ft., on River Chindwin, W Burma by Major S. L. Kalra. (Z.S.I. Register No. 2050).

*Lepidosis.*—Midbody 19; ventral 210; subcaudal 7.

*Colour.*—The ventral aspect of the specimen is chocolate brown with white crossbars which extend upto the tip of the tail. In many places these bars are incomplete.

*Range.*—Smith (*loc. cit.*, p. 96) has recognised two distinct races of the species, viz., *Cylindrophis rufus* and *C. r. burmanus* from two different ranges of distribution. They vary in size and also in lepidosis. The former is found in "Siam and French Indo-China, South of latitude 17°N.; the Malay Peninsula and Archipelago", while the latter is confined to "Tenasserim and Burma as far north as Myitkyina". The specimen under report was obtained at Kalewa, ca. 360 ft. (lat. 23°13'N.) and agrees with the Burmese form *C. r. burmanus*.

### ***Elaphe radiata* (Schlegel).**

(The Copperhead.)

1943. *Elaphe radiata*, Smith, *Fauna. Brit. India (Rept. & Amph.)*, III, p. 146.

*Material.*—1 specimen (total length 1245 mm.) collected from Kanglathongbi Camp, Imphal-Dimapur Road, Manipur (Assam), Milestone 117, on 8th November 1945. (Z.S.I. Register No. 20507).

*Colour.*—Collector's field note on the freshly killed specimen is as follows :—

"Dorsum olivaceous, anterior half with two broad and two narrow and a third thin broken black stripe, starting from about 90 mm. from the tip of the snout. Head with black pattern of transverse and oblique stripe. Dorsal stripe fading out in post (posterior) part of body. Venter glistening silvery blue grey."

Head brown (in spirit specimen). Three black stripes radiating from the eye and a black band on the occipit. Tip of the tongue is black.

*Range*.—It is a common species found throughout Assam and Burma and ascends to the hills up to 5,000 ft.

***Ptyas korros* (Schlegel.)**

(The Indo-Chinese Rat Snake).

1943. *Ptyas Korros*, Smith, *Fauna Brit. India* (Rept. & Amph.), III, p. 162.

*Material*.—1 specimen adult (♂) collected on 26th September 1945, from Kanglatongbi Camp, Imphal-Dimapur Road, Manipur (Assam), Milestone 117. (Z.S.I. Register No. 20510).

*Lepidosis*.—In this species the scales are in 15 rows in the midbody ; ventral 183 ; subcaudal 132 ; anal 2. There are 8 upper labials of which 4th and 5th touching the eye.

*Colour*.—It has got the usual colouration. The tip of the tongue is black.

***Opheodrys doriae* (Boulenger).**

1943. *Opheodrys doriae*, Smith, *Fauna Brit. India* (Rept. & Amph.), III, p. 81.

*Material*.—2 specimens were collected in the month of September 1945 as follows :—

- (i) 1 specimen (total length 770 mm.), from Imphal Valley Manipur (Assam), ca. 4,000 ft., on 28th September. (Z.S.I. Register No. 20504). Collector's note on the field label "Green Snake."
- (ii) 1 specimen (total length 510 mm.), collected "in the grass on a hill", from Imphal, Manipur (Assam), on 22nd September. (Z.S.I. Register No. 20503). Collector's note in the field label "Dorsal bright golden green, ventral white with pale yellow tinge."

*Lepidosis*.—In both the specimens loreal absent, but in the "Indian Museum" specimen (Reg. No. 11939) one small loreal is present and is little longer than deep. Upper labials 7, 4th & 5th entering the eye ; 4 lower labials in contact with the anterior chin-shield. Scale Counts : ventral 174 & 170 ; subcaudals 76 and 74 ; anal entire.

*Colour*.—There is a single specimen of this species (Reg. No. 11939) in the collection which was obtained from Manipur (Assam), by R. D. Oldham in the year 1882. The specimen is in a good condition with colouration somewhat faded. The examples under report are uniform green with slight bluish tinge above, extending to the sides upto the edge of the ventrals.

*Range*.—Known from Assam (Manipur) and some parts of upper Burma (Kachin Hills, ca. 4,500 ft.).

*Remarks*.—It is a very rare species "only three specimens are known" from Assam and Burma. Wall<sup>1</sup> has stated that *doriae* is a "rare snake confined to the hills above about 4,000 ft." So far, as is known this specimen appears to be the second record from Manipur (Assam) area and has been collected from there after a lapse of about 63 years.

<sup>1</sup> Wall, F., *Journ. Bombay Nat. Hist. Soc.* XXX, p. 816 (1925).

**Oligodon albocinctus** (Cantor).

(The Light-barred Kurki Snake.)

1943. *Oligodon albocinctus*, Smith, *Fauna. Brit. India* (Rept. & Amph.), III, p. 211.

*Material*.—1 specimen collected in early part of August 1945, near Army Camp, in a valley 8 miles south of Imphal Manipur State (Assam), ca., 2,600—4,000 ft. (Z.S.I. Register No. 20502).

*Lepidosis*.—Supralabials 7, 3rd & 4th touching the eye. Scales in the midbody 19.

*Colour*.—The back is crossed by 25 bars having a narrow white strip in the middle bordered on the sides with chestnut black bands. There are 8 bars of the same description on the tail, situated almost at regular intervals 18 mm. apart in the whole length of the specimen. Each bar is almost of uniform width comprising 2 scales in the body length. The central stripe blends with the light coloured under parts.

*Remarks*.—Two distinct colour forms could be recognised. It has not been possible to separate them into two distinct species as there is no positive morphological character on which the separation could be based. The specimen under report agrees with form I as stated by Smith (*loc. cit.*, p. 213).

It is essentially a hill form but has also been recorded from plains situated near hilly area.

**Natrix piscator piscator** (Schneider).

(The Chequered Water Snake.)

1943. *Natrix piscator piscator*, Smith, *Fauna. Brit. India* (Rept. & Amph.), III, p. 295.

*Material*.—1 specimen (total length 672 mm.), collected from “Jungle, around Kanglatongbi Camp, Imphal-Dimapur Road, Manipur (Assam) Milestone 117, on 29th October 1945.” The specimen was purchased. (Z.S.I. Register No. 20508).

*Lepidosis*.—Scale counts: midbody 19; ventral 148; subcaudal 72.

*Colour*.—There are blackish spots on the dorsal surface forming “Chess board pattern.” The under surface white with yellowish tinge.

**Natrix stolata** (Linn.).

(The Striped Keelback.)

1943. *Natrix stolata*, Smith, *Fauna. Brit. India* (Rept. & Amph.), III, p. 303.

*Material*.—3 specimens collected between June to October 1945, as follows:—

- (i) 2 specimens (one juv.) from Imphal Manipur (Assam), on June 1945, by Major S. L. Kalra.
- (ii) 1 specimen from Imphal Valley, Manipur (Assam); on 11th October 1945. (Z.S.I. Register No. 20500).

*Remarks.*—The specimen collected from locality (i) could not be correctly determined as the head portion of one of them has been damaged (juvenile specimen) and in the other it is lost. The second one is only a cut up skin. From the body colouration and lepidosis they however, approach to *Natrix* sp. These two specimens have not been incorporated in the “ Indian Museum ” collection.

***Naja naja Kaouthia* (Lesson).**

(The Indian Cobra.)

1943. *Naja naja Kaouthia*, Smith, *Fauna. Brit. India* (Rept. & Amph.), III, p. 431.

*Material.*—2 specimens collected in August and November 1945 as follows :—

- (i) From Imphal town, ca. 2,570 ft., on 14th November 1945. (Z.S.I. Register No. 20505).
- (ii) From Kalewa, ca. 360 ft., on River Chindwin, W Burma on 28th August 1945, by Major S. L. Kalra. (Z.S.I. Register No. 20506).

*Colour.*—The specimen collected from locality (i) is a full grown adult, measuring 1345 mm., in total length, brownish above with indistinct hoodmark. (ii) one juvenile specimen, having a total length 445 mm., with blackish dorsal colour with bluish sheen and O-shaped (monocellate) hood mark. The centre of the design is black with amber coloured ring right round.

Smith (*loc. cit.*, p. 428) on the basis of “ Hood design ” separated “ Indian Cobras ” (*Naja naja*), in to three distinct races, which can be correlated to some extent with geographical distribution.

Wall<sup>1</sup> has given three coloured plates showing the different types of “ Hood markings ” generally found in the Indian Cobras. The “ Hood marking ” of the specimen under report tallys with markings as shown by Wall under the *var. fasciata*.

***Vipera russelli russelli* (Shaw).**

(The Russell's Viper.)

1943. *Vipera russelli russelli*, Smith, *Fauna. Brit. India* (Rept. & Amph.), III, p. 483.

*Material.*—1 specimen adult (total length 937 mm.) collected in the “ Jungle near Modbung, ca. 3,750 ft., Manipur (Assam), off Milestone 117, on 12th November 1945.” Collector's field number R 10/12.11.45 (Purchased). (Z.S.I. Register No. 20509).

*Range.*—It has got a very sporadic distribution. The typical form is distributed throughout the whole length of the Indian Empire from Ceylon to the Himalayas and from Sind to Burma. In many places within this range it is very common while in other it is rare or totally absent.<sup>2</sup>

<sup>1</sup> Wall, F., *Journ. Bombay Nat. Hist. Soc.* XXII, p. 243, pl. xxi, (1913).

<sup>2</sup> Wall, F., *ibid.* XVIII, p. 16 (1907).

*Lizards.***Calotes mystaceus** Dum. & Bibr.

1935. *Calotes mystaceus*, Smith, *Fauna. Brit. India* (Rept. Amph.), II, p. 197.

*Material.*—7 specimens collected during September to November 1945, as follows :—

- (i) 3 adults (♀♀) from Kanglatongbi Camp on Imphal-Dimapur Road, Manipur (Assam), *ca.* 3,000—3,500 ft., on 12th October 1945, (Z.S.I. Register Nos. 20486, 20487 and 20490). Collector's note on field labels (Reg. Nos. 20486, 20487) as "Not infrequent, seen occasionally."
- (ii) 2 adults (♀♀) from Imphal Valley, Manipur (Assam), *ca.* 2,600 ft., on 18th November 1945, (Z.S.I. Register Nos. 20488, 20489). Collector's note on field labels "Change colours."
- (iii) 2 juvenile (unsexed) from Kanglatongbi Camp on Imphal-Dimapur Road, Manipur (Assam), *ca.* 3,000—3,500 ft., between 14th and 19th September 1945, (Z.S.I. Register Nos. 20491, 20492).

TABLE I.

*Scale counts between eye and tympanum.*

	Z. S. I. Register numbers.						
	20486	20487	20488	20489	20490	20491	20492
Enlarged scales between eye and tympanum ..	4	3	4	3	3	3	3

It will be seen from the scale count chart (Table I.) that out of 7 specimens only 2 (Reg. Nos. 20486, 20488) have got 4 scales and the rest possessing 3 scales which are commonly met with examples belonging to this species.

Smith (*loc. cit.*, p. 197), has stated that the average measurement from snout to vent is 140 mm., but in the specimens<sup>1</sup> under report only one example (Register No. 20486) gave 130 mm., from snout to vent while rest of the measurements of the specimens tally with that of Smith.

*Colour.*—Three adults (Register Nos. 20486, 204888 and 20499) are brownish grey with 3 prominent brown spots on the neck and the other 2 behind them, while in 2 examples (Register Nos. 20487, 29489) brown spots are absent.

*Range.*—This species is chiefly distributed in Tennasserim, Burma and Siam, but has not been recorded so far from Assam.

<sup>1</sup> Out of 7 specimens only measurements of 5 examples have been taken and the juvenile forms have been excluded.

TABLE II.

*Measurements of adult specimens in mm.*

Z.S.I. Register Numbers.

	20486	20487	20488	20489	20490
Length of body ..	102·0	100·0	88·0	58·0	52·0
Length of head	28·0	26·0	26·0	20·0	18·0
Total length (Snout to vent)	130·0	126·0	114·0	78·0	70·0
Width of head	15·0	18·0	17·0	13·5	13·0
Length of snout ..	11·0	12·0	11·5	9·0	8·0
Diameter of eye	8·8·0	7·5	7·0	5·5	5·0
Diameter of tympanum .	4·3·0	4·0	4·0	3·2	3·0
Distance between eye and ear ..	7·0	6·5	6·0	5·0	4·5
Length of forelimb	48·0	54·0	50·0	40·0	35·0
Length of hindlimb ..	78·0	75·0	70·0	55·0	50·0

***Calotes versicolor* (Daudin).**

1935. *Calotes versicolor*, Smith, *Fauna. Brit. India* (Rept. & Amph.), II, p. 189.

*Material*.—1 adult (unsexed) specimen collected from Kanglatongbi, Imphal-Dimapur Road, Manipur (Assam), *Ca.* 3,000-3,500 ft., on 14th-19th September 1945 (Z.S.I. Register No. 29493).

*Range*.—It is widely distributed throughout India, Ceylon, Indo-China. Annandale<sup>1</sup> recorded it from an altitude of 6,000 ft.

***Lygosoma maculatum* (Blyth).**

1935. *Lygosoma maculatum*, Smith, *Fauna. Brit. India* (Rept. & Amph.), II, p. 285.

*Material*.—2 specimens adult collected from two localities as follows:—

(i) From forest 6" below damp soil near Modbung, *ca.* 3,750 ft., Manipur (Assam), on 2nd November 1945. (Z.S.I. Register No. 20495).

(ii) From Oak-Scrub Jungle near Army Camp, Kanglatongbi, Imphal-Dimapur Road, Manipur (Assam) on 15th September 1945. (Z.S.I. Register No. 20494).

*Lepidosis*.—According to Smith (*loc. cit.*, p. 285) there are 7 supralabials of which 5th and 6th are situated below the eye. In the specimens under report 6th and 7th supralabials are situated below the eye.

Total length (snout to vent): 45 mm. and 50 mm. respectively. Scales round the body: 40.

*Colour*.—Lower parts of the flanks white and not "thickly speckled with black and white" as observed by Smith (*loc. cit.*, p. 286).

<sup>1</sup> Annandale, N., *Rec. Ind. Mus.* III, pp. 253-257 (1909).