

ON A COLLECTION OF CHELONIANS AND SNAKES FROM CHOTA NAGPUR, BIHAR

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I. INTRODUCTION

In order to study the "ecological succession¹" of animals, in the proposed dam sites² in Chota Nagpur, Bihar, two parties were sent in April and November 1948, for the collection of zoological material. During their faunistic survey of the areas, where dams are to be constructed, they collected various types of animals³ and made notes on their ecological conditions, habits, habitats, etc.

In addition to this collection a small collection of Chelonians, comprising 14 specimens referable to three species was made from the River Ganges below Rajmahal, District Chota Nagpur, Bihar, in the early part of January 1954. The present scientific report is based on both the collections.

From zoogeographical point of view and taking into consideration the distribution of Indian reptiles, Smith⁴ has divided India, including Indo-Chinese subregions, Tenasserim and Siam into twelve well defined faunistic zones. Regarding the Chota Nagpur area he observed as follows :

"This includes Bihar south of the Gangetic Plain, the northern part of Orissa, and the eastern part of the Central Provinces. This area is mountainous, and except in the neighbourhood of Chaibasa, where industrial occupations have sprung up in the recent years, is heavily forested and sparsely populated. The average rainfall is between 50 to 70 inches in the year, being higher near the coast, lower inland. Its fauna is incompletely known, but is of interest in that it contains a Himalayan and Assamese element, although separated from the mountains of those parts by the Gangetic Plain. The highest peak in Chota Nagpur area is Parasnath Hill, an isolated mountain of 4,800 feet, altitude, in its north-eastern corner; the nearest point to it in the Himalayas is the Nepal foot-hills nearly 200 miles away."

Annandale⁵ in his admirable paper "The tortoises of Chota Nagpur" dealt mainly with two families Testudinidae (land forms) and Trionychidae (mud forms) and made no mention of the family Emydidae (fresh-water forms) which comprises almost the major portion of the Chelonian⁶ population of that area.

¹ Elton, Charles, *Animal Ecology*, p. 18 (1927).

² Some of the dams have now been completed in the Damodar Valley areas, popularly known as D.V.C.

³ Bhol Nath, *Rec. Ind. Mus.*, XLVIII, pp. 24-44 (1950).

⁴ Smith, M. A., *Fauna Brit. India* (Rept. & Amph.), I, pp. 18-21 (1931).

⁵ Annandale, N., *Rec. Ind. Mus.*, IX, pp. 63-78 (1913).

⁶ The word Chelonian has been used in a general sense.

Blanford,¹ in his account of "The distribution of Vertebrate animals in India, Ceylon and Burma", came to the conclusion that the fauna of the Parasnath Hills contains a large number of animals found in the Himalayas and its neighbouring areas and as such is of great interest from zoogeographical point of view.

In recent years, the enunciation of the Satpura hypothesis by Hora² and its amplification by a number of his students^{3, 4, 5} have added much greater importance to the Chota Nagpur region, as it is believed to have served as route of migration of the so-called Malayan fauna to Peninsular India during successive periods of Pleistocene glaciations. Menon³, through faunistic surveys has shown that Eastern Ghats, so far as the fish-fauna is concerned, did not serve as the route of migration which lay across the Garo-Rajmahal Gap.

II. PROVENANCE OF MATERIAL

Altogether 46 species of reptiles referable to 5 families were studied as follows :

Testudines : Emydidae 2

Trionychidae 1

Serpentes : Boidae 1; Colubridae 7; Viperidae 1. Collections were made from the following localities⁶ :—

Shore of a tank near Inspection Bungalow, Barakar, West Bengal.

Kanja Pahar (Durgapur), alt. ca. 1,480 ft., Manbhum district, Bihar.

Inanpur, Manbhum district, Bihar

Panchet Hills, alt. ca. 1,600 ft. situated halfway between Raghunathpur and the junction of Barakar and Damodar rivers, 23°37' N. and 87°47' E. Manbhum district, Bihar.

Kumardhubi near Ranigunge Coal fields, Bihar.

Konar river, Hazaribagh district, Bihar.

Maithon Hills (near the Dam site), alt. ca. 725 ft., Bihar.

Charan Hill, N. W. of Barakar.

Chaurasi near Raghunathpur, Manbhum district, Bihar.

III. SYSTEMATIC LIST OF SPECIES

The following species are represented in the collection :—

CHELONIANS

Family EMYDIDAE

Hardella thurgii (Gray) 4 specimens

Kachuga dhongoka (Gray) 9 ,,

Kachuga kachuga (Gray) 3 ,,

¹ Blanford, W. T., *Phil. Trans. Roy. Soc.* CLXLIV (B), pp. 335-436 (1901).

² Hora, S. L., *Science Progress*, No. 162, pp. 245-255 (1953).

³ Menon, A. G. K., *Proc. Nat. Inst. Sci. India* XVII, pp. 475-497 (1951).

⁴ Silas, E. G., *ibid.* XVIII (5), pp. 423-448 (1952).

⁵ Menon, A. G. K., *ibid.* XX (4), pp. 467-493 (1954).

⁶ For Physiography and detailed description of the localities, please see Bhola Nath, *Rec. Ind. Mus.*, XLVIII, pp. 29-31 (1950).

Family TRIONYCHIDAE

Lissemys punctata granosa (Schoepff.) 1 specimen

SNAKES

Family BOIDAE

Eryx conicus (Schneid.) 1 specimen

Family COLUBRIDAE

Ptyas mucosus (Linn.) 1 specimen*Oligodon cyclurus* (Cantor) 1 ,,*Natrix stolata* (Linn.) 10 specimens*Natrix piscator* (Schneid.) 4 ,,*Boiga trigonata* (Schneid.) 1 specimen*Lycodon aulicus* (Linn.) 2 specimens

Subfamily HOMALOPSINAE

Enhydris enhydris (Schneid.) 7 specimens

Family VIPERIDAE

Subfamily VIPERINAE

Echis carinatus (Schneid.) 2 specimens

IV ACKNOWLEDGMENT

I am grateful to Dr. S. L. Hora, Director, Zoological Survey of India, for kindly going through this report and making valuable suggestions for its improvement.

V SYSTEMATIC ACCOUNT

Order TESTUDINES

Family EMYDIDAE

***Hardella thurgii* (Gray)**1831. *Emys thurgii*, Gray, *Syn. Rept.* pp. 22, 72 (type locality : India).1912. *Hardella thurgii*, Chaudhuri, *Rec. Indian Mus.* VII, p. 213.1949 *Hardella thurgii*, Constable, *Bull. Mus. comp. Zool. Harv.* CIII, no. 2, p. 76.

Specimens collected.—4♀♀ from the R. Ganges, below Rajmahal, district Santal Parganas, Bihar (23-25. i. 1954).

Measurements (in mm.).—Length of the carapace (straight) (Coll. no. 10 25.i.54)—313 and the smallest ♀ (Coll. no. 13)—260; Breadth of the carapace (straight)—230 and 190 respectively.

It has been observed that Gray in the original description (*loc. cit.* pp. 22 and 72) of the species has spelt the specific name as *thurji* several times, but in the list of "Addition and correction" which came out as an appendix to the same volume, on page 72 has spelt the specific name as *thurgii*. Smith in the revised edition of the *Fauna British India* series (Rept. & Amph.) volume I, p. 122 (1931) has show the specific name as *thurgi*. It seems that the correct spelling should be *thurgii* and not *thurgi*. I have adopted the same. Constable (*loc. cit.* p. 79) as also done the same.

Kachuga dhongoka (Gray)

1834. *Emys dhongoka* Gray, *Illus. Indian Zool.* III, pl. ix (type locality North India).
1912. *Kachuga dhongoka*, Chaudhuri, *Rec. Indian Mus.* VII, p. 212.

Specimens collected.—9 (3♂♂, 5♀♀, 1 juv. unsexed) from the R. Ganges, below Rajmahal, Chota Nagpur, Bihar (23-26.i.54).

Measurements (in mm.).—Length of the largest carapace (straight)—290; Breadth of the carapace—90.

Shell brownish above with not very distinct (in dry shell) longitudinal stripes. The juvenile specimen (coll. no. 14 Jan. 1954) had traces of spots on each shield.

Chiefly found in the Gangetic river system including the Brahmaputra in Assam (I. M. Reg. no. 18319. Sonapur, Assam by L. W. Middleton).

Kachuga kachuga (Gray)

1831. *Emys kachuga* Gray, *Illus. Indian Zool.* pt. 5, pl. 9 (type locality N. India).
1931. *Kachuga kachuga*, Smith, *Fauna Brit. India* (Rept. & Amphibia) I; p. 131.

Specimens collected.—3 (1♂ and 2 ♀♀) from the R. Ganges below Rajmahal, Santal Parganas, Bihar (23.i.54).

Measurements (in mm.).—Length of carapace (straight) of the largest ♀ (coll. no. 15)—248; Breadth of the carapace—200.

Shell olive in colour, yellowish below. In the living example crimson-red noticed on the top of the head, extending to the fore part of the carapace. This condition of colouring may be associated with the breeding season.

Kachuga kachuga can be distinguished from its allied species *Kachuga dhongoka* by its larger size and very smooth carapace. This tortoise is largely aquatic in habits, sitting on the edge of the river at dusk and at slightest alarm dives down in the river. The sense of hearing is not very acute, but the sense of smell is very well developed.

From enquiries made from the turtle hunters on the spot it appears that there are at least six distinct species of water tortoises, which they could easily distinguish. Out of these, three species *Hardella thurgii*, *K. dhongoka* and *K. kachuga* were collected. Popular local names of all the species were ascertained from the turtle catchers, who belonged mostly to the tribal group of people inhabiting the whole of Santal Parganas.

TABLE I. SHOWING LOCAL NAME AND DISTRIBUTION OF SPECIES

Scientific name of the species	Local name	Distribution	Remarks
Family EMYDIDAE (Hard-shelled)			
<i>Kachuga kachuga</i> (Gray)	Sal	Gangetic river system	Very common.
<i>Kachuga dhongoka</i> (Gray)	Dhoor or Dhundi.	Ganges as far West as Allahabad and north to Nepal.	Ditto.
<i>Kachuga tectum</i> (Gray)	Ponchoria	Ganges, Brahmaputra and Indus river system.	Occasional.
<i>Hardella thurgii</i> (Gray)	Kalikattuas	Gangetic and Brahmaputra river system.	Abundant.
Family TRIONYCHIDAE (Soft-shelled)			
<i>Trionyx gangeticus</i> Cuvier	Katta, Kachims or Kachapps.	Common in the lower reaches of the Ganges.	Common.
<i>Chitra indica</i> (Gray)	Sim	Not uncommon in the Gangetic delta.	Occasional.

In 1912, Chaudhuri¹ made certain observations on the Chelonians of the "Middle Ganges and Brahmaputra", and recorded that the local turtle hunters could easily distinguish 9 species of aquatic tortoises found in the Ganges below Rajmahal. During my investigation covering one week, I could trace from the entire catch of the turtle hunters six species of tortoise only as enumerated above and was unable to trace out specimens of *Kachuga smithii*, *Trionyx hurum* and *Lissemys punctata* (= *Emyda granosa*) which are said to be found below Rajmahal as stated by Chaudhuri. From a zoogeographical point of view it is very likely that *Kachuga smithii*, *Trionyx hurum* and *Lissemys punctata* may occur in the Ganges system as well. According to Smith² *Kachuga smithii* and *Lissemys punctata* are found in the Ganges and Indus rivers, whereas *Trionyx hurum* has been recorded from the Ganges and Brahmaputra rivers. The Ganges and the Indus systems together formed a continuous westward flowing drainage along the base of the Himalayas during the Pliocene-Pleistocene and probably only during the late Pleistocene or the recent epochs this drainage was cut into two separate systems, one flowing westwards as the present day Indus and the other eastwards as the Ganges.³

¹ Chaudhuri, B.L., *Rec. Indian Mus.* VII, p. 212-214 (1912).

² Smith, M.A., *Fauna Brit. India* (Rept. & Amph.) I, pp. 126, 159, 173 (1931).

³ Hora, S. L., Anniversary Address, *Nat. Inst. Sci. India*, pp. 1-13 (1953).

Family TRIONYCHIDAE

Lissemys punctata granosa (Schoepff.)

1792. *Testudo granosa*, Schoepff, *Hist. Test.*, p. 127, pls. xxx (type locality : Coromandel coast).
1913. *Emyda granosa intermedia*, Annandale, *Rec. Indian Mus.* VII, pp. 172-176, pl. VI and p. 264 (type locality : Purulia, Manbhum district, Santal Parganas ; Ind. Mus.).

Specimens collected.—1 juv. (unsexed) “from the shore of a tank near Inspection Bungalow, Barakar, Burdwan district, Bengal (now West Bengal), (8. xi. 48) Chota Nagpur Survey.

Measurements (in mm.).—Length of the carapace (straight) 86; Breadth of the carapace—81 ; Length of the plastron (Notch to Notch)—91. Plastral callosities 6, ento-plastral callosity very feebly developed ; fore limbs and hind limbs with 3 claws.

Carapace olive-brown without any markings ; head greenish, olive with black streaks.

Mostly found in the rivers. Annandale states that “This race is apparently common all over Chota Nagpur except probably in the hills”.

In the “Taxonomic Assessment of a species” Hora¹ has discussed in detail the interspecific relation of a species and the conception of a species as differently understood by herpetologists at different stages and the category of various changes brought about by the Scientists in the nomenclature. Smith² while revising the Indian Testudines in the *Fauna of the British India* series on the ground of “Rules of Zoological nomenclature” proposed a new name *Lissemys* for the well established generic name *Emyda* and recognised only one species *Lissemys punctata* in place of *Emyda granosa*, *E. vittata* and *E. scutata* and regarded *granosa* and *scutata* as of interspecific rank. Thus *Emyda granosa intermedia* Annandale 1912, became synonymous with *Lissemys punctata granosa* (Schoepff.).

Order SQUAMATA

Suborder SERPENTES

Family BOIDAE

Eryx conicus (Schneider)

1943. *Eryx conicus*, Smith, *Fauna Brit. India*, (Rept. & Amph.) III, p. 112.

Specimens collected.—One (dissected specimen) from the base of Panchet Hills, about 3 miles from Inanpur Inspection Bungalow, Manbhum district, Bihar, (4. xii. 1948) Chota Nagpur Survey.

¹ Hora, S. L., *J. zool. Soc. India* I, no. 2, pp. 92-96 (1949).

² Smith, M A., *Fauna Brit. India* (Rept. & Amph.) I, p. 154-160 (1931).

Rostral visible from above ; nostril slit-like, situated in the enlarged scales of the nasal and inter-nasals ; 12 scales round the eye. Ventrals 164, subcaudals 19. Mental groove absent. Tail pointed.

Measurements (in mm.).—Length of the head (measured dorsally)—17. Maximum width of the head—11. Total length—336.

Very little is known about its habits. Fowler¹ has noted *Eryx jaculus* (Linn.) and *Eryx j. johani* (Russell) are ovoviviparous, and it is quite likely that other species of *Eryx* have similar habits. It has been recorded from Naini Tal, alt. ca. 6,000 ft., Western Himalayas (I. M. Reg. No. 16115).

Family COLUBRIDAE

***Ptyas mucosus* (Linn.)**

1758. *Coluber mucosus*, Linnaeus, *Syst. Nat. Ed. 10*, I, p. 226 (type locality India).

1949. *Ptyas mucosus*, Constable, *Bull. Mus. comp. Zool. Harv.* CIII p. 27.

Specimens collected.—1 Juv. from Chaurasi, 2½ miles W of Inanpur, Manbhum district, Bihar, (26.xi.1948), Chota Nagpur Survey.

Scales in the midbody 17 ; Ventrals 194 ; anal divided ; upper labials 8, 4th and 5th entering the eye. Total length-685 mm.

Recorded from the Western Himalayas (Almora, Simla Hills : I. M. Reg. No. 4130 and 7279).

***Oligodon cyclurus* (Cantor)**

1839. *Coronella cyclura*, Cantor, *Proc. zool. Soc. Lond.* p. 50 (type locality not known).

1943. *Oligodon cyclurus*, Smith, *Fauna Brit. India*, (Rept. & Amphibia) III, p. 202.

Specimens collected.—1 Juv. from Inspection Bungalow Inanpur, Manbhum district, Bihar, (26.xi.1948), Chota Nagpur Survey.

Supra labials 8, 4th and 5th touching the eye ; total length-390 mm.

Dark reddish-brown above with black markings on the edge of the scales. On the basis of colour pattern as found on the dorsal scales Smith (*loc. cit.*) has separated *Cyclurus* into five well defined colour forms found in different geographical areas. According to him, it corresponds with the form I as shown in his text-fig. 63A.

***Lycodon aulicus* (Linn.)**

1943. *Lycodon aulicus*, Smith, *Fauna Brit. India* (Rept. & Amphibia) III, pp. 263-266.

Specimens collected.—1 from Chaurasi, 3 miles west of Inanpur, Manbhum district, Bihar, (26.xi.48) ; 1 juv. (unsexed) " from under stones, Maithon dam site, 6 miles N. W of Barakar, Manbhum district, Bihar, (15.xi.1948), Chota Nagpur Survey.

¹ Fowler, S. S., *Proc. zool. Soc. Lond.* pp. 735-851 (1933).

Scales in the midbody 17 ; ventrals 178 & 182 ; anal divided ; upper labials 9, 3rd, 4th and 5th touching eye ; white cross bands on the dorsal aspect 14 and 20, faintly marked on the posterior part of the body.

Specimens have been collected from Sikkim (I. M. Reg. No. 16441) ; Naini Tal district, Western Himalayas (I. M. Reg. No. 16510) and Nepal Valley (I. M. Reg. No. 18656).

Natrix stolata (Linn.)

1943. *Natrix stolata*, Smith, *Fauna Brit. India* (Rept. & Amphibia) III, pp. 303-305.

Specimens collected.—2♂♂, collected 1 mile north of Barakar, Burdwan district, W Bengal, (8.xi.1948) ; 1 ♀ with mutilated tail (Sta. 6 b), from the neighbourhood of Nirsa about 6 miles west of Barakar, Manbhum district, Bihar (10.xi.1948) ; 1 from Kanja Pahar, 13 miles from Barakar Railway Station, (20.xi.1948) ; 2 from 1½ mile west of Inanpur, Manbhum district, Bihar (24.xi.1948) ; 1 from the base of the Panchet Hills, 1½ miles west of Inanpur, Manbhum district, Bihar (25.xi.48) ; 1 from Kumardhubi, 2 miles from the Inspection Bungalow Manbhum district, Bihar (14.xi.1948) ; 1 from 2½ miles south of Inanpur Manbhum district, Bihar (27.xi.1948), “Caught near the edge of the Nallah” 1♀ collected “in a paddy field on the bank of Konar river, south of Hazaribag district,” Bihar (17.xi.1951), Chota Nagpur Survey. The last specimen mentioned in the list was collected by Dr. B. Biswas.

In all the examples, there are 8 upper labials, 3rd, 4th and 5th touching the eye. The maximum total length of the largest specimen of the series 560 mm., while that of the smallest 240 mm. The tail occupies almost the quarters of the total length.

Distributed all over India. In Burma it has been recorded from Tenasserim and this seems to be its southernmost limit. So far, there is no record of its occurrence in the Malay Peninsula. de Rooij¹ has also doubted its existence in that area.

Natrix piscator (Schneider)

1799. *Hydrus piscator*, Schneider, *Hist. Amph.* I, p. 247 (type locality : East Indies).

Specimens collected.—One example (Sta. 8) from Maithon Dam site about 6 miles from Barakar, Manbhum district, Bihar (13.xi.1948) ;, one collected from a “pool, 1½ miles W of Barakar”, Bihar (24.xi.1948) ; one (dissected specimen) near a nallah, 1½ miles S. of Inanpur, Manbhum district, Bihar (12.xii.1948) ; one (dissected specimen) from a field near Inanpur, Manbhum district, Bihar, Chota Nagpur Survey.

Supra labials 9, in 1 example 8, 4th and 5th touching the eye ; scales keeled in 19 rows in the midbody. Ventral counts in 4 specimens varies between 126-150 ; subcaudals 72-84.

¹ de Rooij, *Reptiles of the Indo-Australian Archipelago* (Ophidia), p. 88 (1917).

This snake is so variable in colour and in the setting of the black dots on the dorsal aspect that Smith¹ has erected four geographical races, based on these characters. One example (collected on 13th November, 1948) has yellowish ventrals edged with black, which fairly approaches the form II of Smith (*loc. cit.*), while another (collected on 24th November, 1948) has pinkish colour on the ventral aspect nearing to *flavipunctata*, which is distributed from the Indo-Chinese region to the west as far as Assam.

It has been recorded from Sikkim, E. Himalayas (I. M. Reg. No. 18668); Nepal, alt. *ca.*, 5,000 ft. (I. M. Reg. No. 15832-15834) and Dharampur, alt. *ca.*, 5,300 ft., Western Himalayas.

Boiga trigonata (Schneider)

1943. *Boiga trigonata*, Smith, *Fauna Brit. India* (Rept. & Amph.) III, p. 349.

Specimens collected.—1 juv. (unsexed) "from under stones, Charan Hills, about 6 miles N. W. Barakar Railway Station", Manbhum district, Bihar (20.xi.1948). Chota Nagpur Survey.

Preocular 1. Scales in the midbody 21 ; ventral 232 ; subcaudals 80. Total length—256 mm.

Greyish-brown above with vertebral series of black edged shaped marks. Lower side having black dots on the margin of the ventrals.

Specimens have been recorded from Sabathu near Simla, alt. *ca.* 6,500 ft. (I. M. Reg. No. 7836).

Enhydris enhydris (Schneider)

1799. *Hydrus enhydris*, Schneider, *His. Amph.* I, p. 245 [based on Russell's *Ind. Serp.*, I, p. 35, pl. xxx] (type locality : Ankapilly Lake, India).

1943. *Enhydris enhydris*, Smith, *Fauna Brit. India* (Rept. & Amph.) III, p. 383.

Specimens collected.—5 specimens thus : 4 adult from a private pond full of aquatic vegetation in the village Deriana near Nirsha about 7 miles from Barakar, Bihar (10.xi.1948) ; 1 from Sultandih, 3 miles N. of Inanpur, Manbhum district, Bihar (8.xii.1948). Chota Nagpur Survey.

Snout blunt (rounded) ; 8 upper labials, 4th entering the eye, last one very small. Scales smooth in 19 rows ; ventrals 148-168 ; subcaudals 48-68 (counts based on 5 specimens).

Smith (*loc. cit.*) on the basis of colour pattern divided the three species of *Enhydris* into two distinct colour forms. According to his views, the specimens under report conforms with group I as shown by him.

A very widely distributed species, found from north-eastern India to Assam. It has also been recorded as far north as the Himalayan foot hills.

¹ Smith, M. A., *Fauna Brit. India* (Rept. & Amph.) III, p. 296 (1943).

Family VIPERIDAE

Subfamily VIPERINAE

Echis carinatus (Schneider)

1801. *Pseudoboa carinata*, Schneider, *Hist. Amph.* II, p. 285 [based on Russell]
(type locality : Arni near Madras).

Specimens collected.—2 (dissected specimens) “from the foot of the Panchet hills, 1½ miles S. of Inanpur Inspection Bungalow, Manbhum district, Bihar (10.xii.1948), Chota Nagpur Survey.

Total length.—324 and 280 mm. respectively. It is essentially a desert form but has also been recorded at an altitude of 5,000 ft. (I. M. Reg. No. 8581, Kalagan, Baluchistan).