

XIX. HERPETOLOGICAL NOTES AND  
DESCRIPTIONS.

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(Plate xxxiii.)

**Trionyx sulcifrons**, sp. nov.

(Plate xxxiii, figs. 1, 1a, 2.)

The head is relatively small, triangular in shape and somewhat flattened; the tubular nostrils are relatively long and have a well-developed median longitudinal groove on the dorsal surface; the interorbital space is narrow and in fresh specimens the superciliary regions are raised.

*A number of small longitudinal grooves originate between the eyes and, proceeding forwards, diverge on the forehead.* These give an excuse for the specific name.

The disk is sub-circular, coarsely tuberculate in front of and behind the bony carapace; there is no dorsal ridge or groove, but a large prominence occurs on the bony carapace in front.

In the young (pl. xxxiii, fig. 2) the head is olivaceous, with a smallish yellow spot beneath each eye, and another rather larger one at the junction of the jaws; the following black linear marks occur on the dorsal surface—a sinuous line originating behind the lower part of each eye, proceeding upwards and then bending downwards and running along each side of the head to disappear on the nape, and a large Y-shaped mark situated in the middle of the dorsal surface some distance behind the eyes and connected somewhat indefinitely with diverging lines on the nape. In the adult these dark marks break up as shown in fig. 1 (p. 342) and perhaps disappear finally. The yellow spot at the junction of the jaws persists but its limits become somewhat indefinite. In the adult living animal the eyelids are reddish-brown and such dark marks as persist are bordered with a brighter shade of the same colour. The disk of the young bears (? 4 or) 5 relatively small ocelli, the ground-colour being dark olivaceous obscurely reticulated; there is a narrow yellow margin. In the adult the ocelli disappear and the whole disk becomes dark olivaceous green obscurely marbled with a paler shade.

The pupil of the eye (in the only living individual, an adult female, examined) was black and the iris dark olivaceous with a yellow ring internally.

The skull (pl. xxxiii, figs. 1, 1a) resembles that of *T. gangeticus* in general appearance, but is considerably smaller and narrower. The interorbital space is slightly concave and considerably narrower than either the nasal cavity or the orbit; the post-orbital arch is rather more than half as broad as the orbit and the post-orbital foramen remarkably small. The snout is longer than the orbit and distinctly declivous; it is more pointed than in *T. gangeticus*, but less so than in *T. hurum* and *T. leithii*. The symphysis of the lower jaw is long, equalling the orbit in length; the jaw itself is bluntly pointed; there are no ridges either longitudinal or transverse in this region; the two rami are more convergent than in *T. gangeticus*.

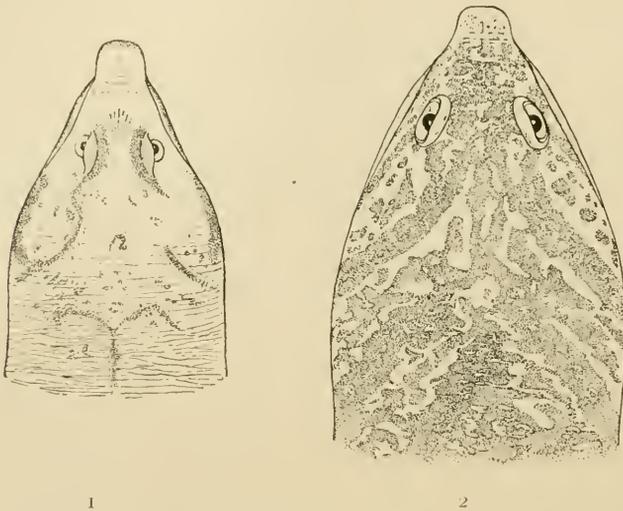


FIG. 1.—Head of *Trionyx sulcifrons* (from life),  $\frac{1}{2}$  nat. size.  
 ,, 2.—Head of *Trionyx gangeticus mahanaddicus* (from type specimen),  
 $\frac{1}{2}$  nat. size.

The branchial skeleton resembles that of *T. gangeticus*,<sup>1</sup> but the greater cornua are more slender and the ceratobranchials stouter and shorter; the hypobranchials are distinct and show traces of segmentation into 2 or 3 pieces; this is, however, less marked than in *T. gangeticus*.

The margin of the bony carapace is concave in front and almost straight behind; the sculpturing of the posterior region is coarser than that of the anterior and near the posterior border there are small scattered bony tubercles. There are two or three neural plates between the first pair of costals. The plastron closely resembles that of *T. gangeticus*, but the hypoplastra and hyoplastra of the two sides apparently remain widely separated in the adult and all the bones are smaller.

<sup>1</sup> Annandale, *Rec. Ind. Mus.* VII, p. 159, fig. 1 (1912).

*Type.*—An adult female, which was examined alive and is now preserved as a skeleton in the Indian Museum (No. 17973: *Rept. Ind. Mus.*). The skin of the head is preserved in spirit.

I have also examined a slightly larger female (stuffed) and a young individual (in spirit) (pl. xxxiii, fig. 2), both the property of the Nagpur Museum.

The following are the measurements of the type:—

Disk.			Skull.		
Total length	...	497 mm.	Length	...	84 mm.
" breadth	...	427 "	Breadth	...	54 "
Bony carapace (length)	...	335 "	Orbit	...	15 "
" " (breadth)	...	331 "	Snout	...	24 "
			Interorbital width	...	11 "
			Nasal aperture (width)	...	13 "
			Postorbital arch...	...	8 "
			Mandibular symphysis	...	15 "

*Distribution.*—The type is from a tank in the town of Nagpur, the capital of the Central Provinces of India, as is also the adult specimen in the Nagpur Museum; while the young example in that museum is from a canal or stream at the same place.

This species is related to *T. gangeticus*, Cuv., the chief differences being (1) the presence of ocelli on the disk of the young and the absence of forwardly directed V-shaped markings' on the head, (2) the more pointed snout, (3) the smaller postorbital foramen, (4) the longer symphysis of the lower jaw and the absence of a transverse ridge on its inner margin.

The eggs are small, the diameter being only 31 mm. in examples found ready for deposition in the type-specimen, which was killed in June. Another female killed at Nagpur was found to contain fully formed eggs in January.

I have to thank Mr. E. A. D'Abreu for the opportunity of making this very noteworthy addition to the herpetological fauna of India. He has also sent me for examination two specimens of the form I recently described as *T. gangeticus* subsp. *mahanaddicus*.<sup>1</sup> One is a skeleton of an adult slightly larger than the type (fig. 2, p. 342), while the other is a much smaller stuffed example. The localities are (?) Jubbulpore and Seonath R., Bilaspur district; both places being in the Central Provinces.

### *Trionyx leithii*, Gray.

1915. Annandale, *Rec. Ind. Mus.* XI, p. 189, fig. 1.

In a recent paper I cast doubt on the occurrence of *T. leithii* in the Gangetic river-system, but I now take the earliest opportu-

<sup>1</sup> *Rec. Ind. Mus.* VII, p. 262 (1912).

nity to note that I have found in the old collection of the Indian Museum a number of young specimens from Allahabad and the River Hughli. There is no specimen of this species in the Nagpur Museum, though it occurs in the Central Provinces

**Gonatodes bireticulatus**, sp. nov.

(Plate xxxiii, figs. 3, 3a.)

*Head small*, ovate, moderately convex above; snout obtusely pointed, declivous, a little longer than the distance between the eye and ear-opening and more than twice as long as the eye; forehead grooved; ear-opening moderate, oval; 7 upper and 8 lower labials.

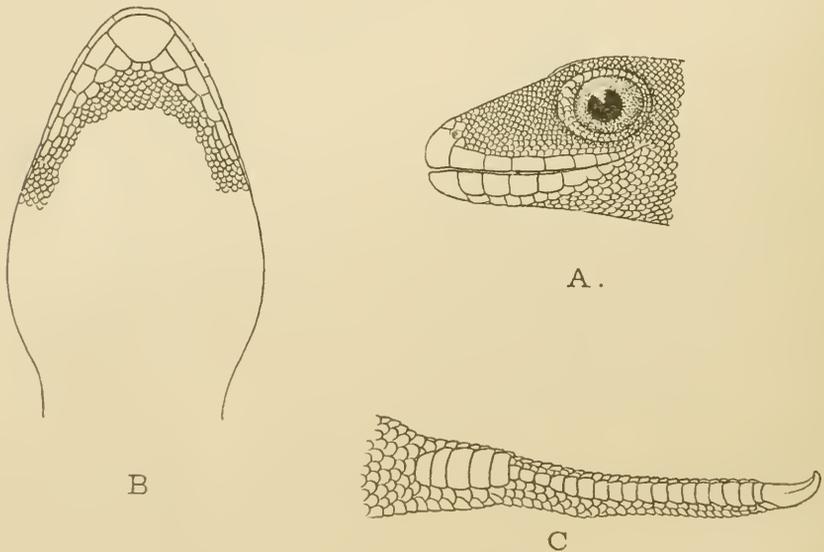


FIG. 3.—*Gonatodes bireticulatus*, sp. nov.

A. Snout in lateral view,  $\times 3$ . B. Lower surface of head,  $\times 3$ .  
C. Lower surface of fifth toe,  $\times 8$ .

*Body and limbs moderate*, the hind limb reaching the axilla; digits slender, basal joints not dilated and without transverse plates; five relatively large plates below the first articulation. Dorsal surface covered with conical keeled tubercles, which vary considerably in size, and are much smaller on the head than on the body; throat covered with similar tubercles; mental moderate in size, subtruncate posteriorly and followed by two small flattened scales placed transversely; several enlarged scales, which decrease in size from before backwards, on either side below the labials. Ventral scales small, leaf-shaped imbricate. Male with 7 femoral pores on each side. *Tail cylindrical*, tapering, covered above with small, oval, sub-imbricate, almost smooth scales, and below

with flattened scales, the central row of which is distinctly enlarged.

*Colouration.*—Brown above, with a coarse black reticulation and, superimposed upon it, a much finer one of dotted white lines; two parallel white lines running backwards from the eye to above the ear; throat brownish, with a coarse, irregular white reticulation and with a white line running along each side; chest and abdomen brownish grey speckled with white. Ventral surface of tail greyish brown speckled with white; about 12 pale transverse bars on the dorsal surface. Fingers and toes with alternate brown and white bands.

*Measurements.*

Total length	..	..	95 mm.
Length of tail	..	..	50 "
Length of head	..	..	15 "
Breadth of head	..	..	9 "

*Type.*—No. 17970: *Rept. Ind. Mus.*

*Locality.*—In jungle at Kavalai, 1300-3000 feet, Cochin State (F. H. Gravely).

Numerous specimens of *G. wynadensis* (Beddome) and a few of *G. gracilis* (Beddome) were taken with the type, which is an unique specimen.

The species is closely related to *G. wynadensis*, but is distinguished from it (among other characters) by its colouration, by the larger number of femoral pores and by differences in the scaling of the feet.

***Tropidonotus sancti-johannis*, Boulenger.**

1893. Boulenger, *Cat. Brit. Mus.* I, p. 230, pl. xv, fig. 1.

This snake, which seems to me to be a distinct species, has been recorded from several widely separated localities in Kashmir, the Himalayas and central India. I am not aware, however, that it has been found hitherto in the Malabar Zone. A typical specimen was obtained by Mr. F. H. Gravely at Chalakudi in the State of Cochin in September last.

***Chirixalus simus*, sp. nov.**

*Head* large, broader than long; snout truncated, considerably shorter than the diameter of the orbit; canthus rostralis barely distinguishable; loreal region vertical, slightly concave; nostrils much nearer tip of snout than eye; interorbital region broader than upper eyelid, flat; tympanum about one-third the diameter of the eye.

*Limbs.*—Inner fingers with a very slight rudiment of a web; toes about two-thirds webbed; disks of fingers smaller than tympanum, slightly larger than those of toes; subarticular tubercles

well-developed; a small and rather indistinct inner metatarsal tubercle. The tibio-tarsal articulation reaches the tip of the snout.

*Skin*.—Skin of head with small round scattered warts, of back nearly smooth; sides and throat with similar warts, abdomen and inner surface of thighs coarsely granular; a glandular fold extending from the superciliary region to above the shoulder, and another, somewhat interrupted, from the gape to the same point.

*Colouration*.—Dorsal surface pale buff with several indistinct longitudinal dark lines and numerous scattered black specks. Ventral surface yellowish; throat and chest with minute black and white specks. Limbs without definite markings, inner surface of thighs reddish.

*Measurements.*

Total length of head and body ..	..	22 mm.
Length of head ..	..	8 "
Breadth of head ..	..	9 "
Length of hind limb ..	..	32 "

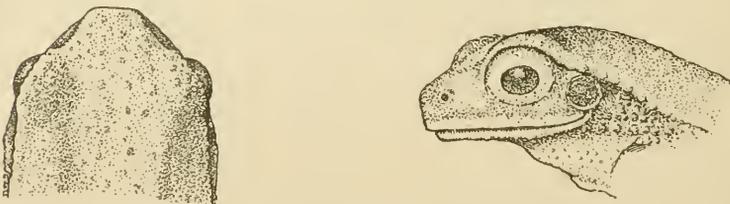


FIG. 4.—Head of *Chirixalus simus*, sp. nov.,  $\times 3$ .

*Type*.—No. 17971: *Rept. Ind. Mus.*: an unique specimen.

*Locality*.—Mangaldai, Assam north of the Brahmaputra (S. W. Kemp, 6-i-11).

This species differs from *C. doriae*,<sup>1</sup> the only other as yet known, in its larger head, truncated snout, smaller tympanum and rather longer hind legs, and in possessing a glandular fold between the eye and the shoulder.

*C. doriae*, which was described from Upper Burma, has recently been recorded from the Himalayan foot-hills<sup>2</sup> immediately to the north of Assam. The discovery of a second species near the base of the same hills is therefore interesting.

***Ichthyophis glutinosus* var. *tricolor*, Annandale.**

1909. Annandale, *Rec. Ind. Mus.* III, p. 186.

Two specimens of this variety or local race were found by Mr. F. H. Gravely on the eastern slopes of the Western Ghats in Cochin in September last, the exact locality being Parambikulam

<sup>1</sup> Boulenger, *Ann. Mus. Genova* (2) XIII, p. 341, pl. x, figs. 5, 5a (1893).

<sup>2</sup> Annandale, *Rec. Ind. Mus.* VIII, p. 18 (1912).

(alt. 1700-3200 ft.). The specimens are considerably larger than the type, one of them being 280 mm. long. The yellow lateral band on each side is separated from the white median ventral band by a dark one, which is greyish in spirit. This dark band varies considerably in breadth.

### *Ichthyophis monochrous* (Bleeker).

1912. Boulenger, *Faun. Malay Penin., Rept.*, p. 286.

Boulenger notes (*op. cit.*) that this species has not been recorded from Ceylon, but there are two specimens from that island in the collection of the Indian Museum. They were taken some years ago at Pattipola in the hills of the Central Province (alt. ca. 6000 feet) by Mr. F. H. Gravely.

### ADDENDA.

Since these notes went to the press I have received specimens of three species of *Chelonia* from Mr. W. Lancelot Travers, who obtained them near Baradighi in the Jalpaiguri district of Bengal. The same gentleman had already sent me examples of two others from the same locality. As our knowledge of the *Chelonia* of northern Bengal is still far from complete, this little collection is of considerable importance. It includes the following species:—*Chitra indica* (several young specimens), *Emyda granosa* (a half-grown specimen of the typical form), *Testudo elongata* (one young specimen), *Geoemyda tricarinata* (one adult), *Geoemyda indopeninsularis* (a large male).

It is of particular interest to find that the range of *T. elongata* actually extends, as Anderson thought probable, along the sub-Himalayan tract to the west of Assam, and that *G. indopeninsularis* occurs north of the Ganges.

The specimen of the latter species agrees well with the male type.<sup>1</sup> The shell is actually deeper as a whole than in *G. trijuga* var. *edeniana*, but the bridge has relatively a much smaller vertical depth. The specimen from Assam referred doubtfully to *edeniana* (*op. cit.*, pp. 69, 70) should probably be assigned to *G. indopeninsularis*, in spite of its broad second vertebral shield; it is much smaller than the other three in the collection.

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<sup>1</sup> *Rec. Ind. Mus.* IX, p. 71, pl. v, fig. 2.

EXPLANATION OF PLATE XXXIII.

All the figures on this plate are from untouched photographs of natural size.

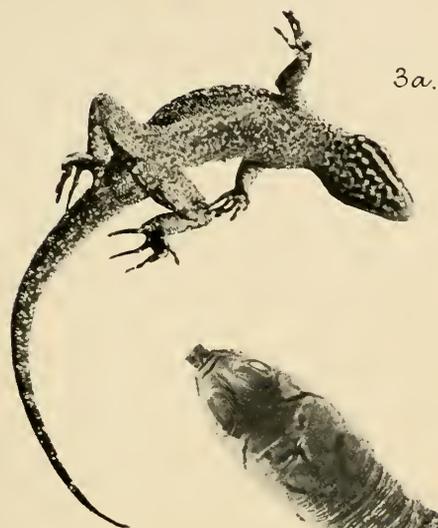
FIGS. 1, 1a, 2.—*Trionyx sulcifrons*, sp. nov.

1.—Skull of type-specimen as seen from above: 1a.—Lower jaw of the same specimen.

2.—Young specimen preserved in spirit.

FIGS. 3, 3a.—*Gonatodes birecticulatus*, sp. nov.

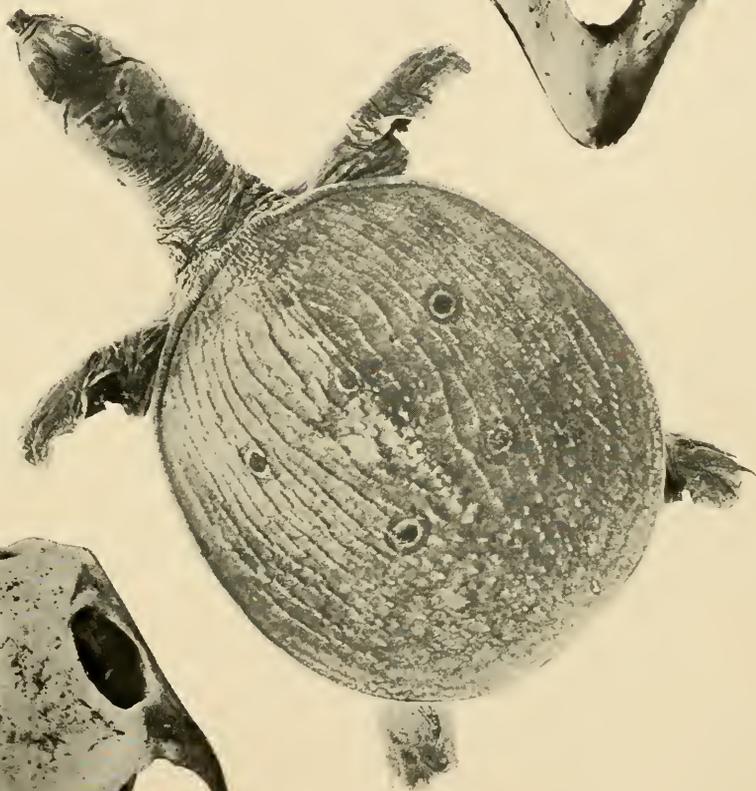
3.—Type-specimen from above: 3a.—Same specimen from below.



3a.



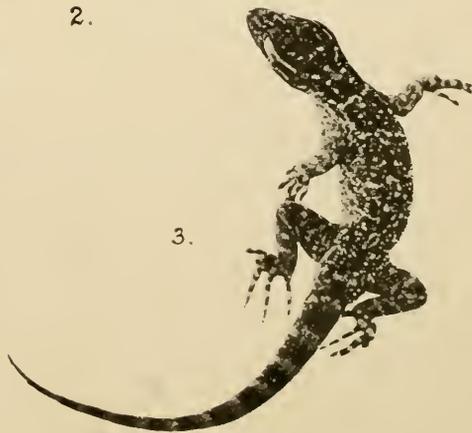
1a.



2.



1.



3.