

NOTES ON LIZARDS IN THE INDIAN MUSEUM.

II. ON THE UNNAMED COLLECTION OF LIZARDS OF THE FAMILY AGAMIDAE.

By SUNDER LAL HORA, D. Sc., *Officiating Superintendent, Zoological Survey of India.*

In working out a very big collection of the unnamed Agamid lizards in the Indian Museum I have found very little to add to the systematic and geographical knowledge to be found in Boulenger's works. During the last few years the Museum has received several specimens of such interesting forms as *Ptyctolaemus gularis* Peters, *Cophotis ceylanica* Peters, *Acanthosaura major* (Jerdon) and *Salea anamallyana* (Bedd.). Besides notes on these rare forms I have discussed the specific limits of the two species of *Gonyocephalus* from the Andamans and the Nicobars and have added a note on the probable occurrence of *Japalura variegata* Gray in the plains of Bengal and especially in Calcutta. Two specimens of *Agama* presented to us by the Afghan Boundary Commission have been identified as *A. himalayana* (Steind.). Unfortunately there is no record with us of the exact localities from which these specimens were obtained.

Genus *Ptyctolaemus* Peters.

(Plate XII, figs. 1—3).

This interesting genus is up to the present represented by a single species, which is said to be quite rare in museum collections. It is characterized by the presence of "three parallel longitudinal folds on each side of the middle of the throat, curved and converging backwards, forming a U-shaped figure."¹

Ptyctolaemus gularis Peters.

1864. *Ptyctolaemus gularis*, Peters, *Monatsh. K. Preuss. Akad. Wiss. Berlin*. p. 386.
1885. *Ptyctolaemus gularis*, Boulenger, *Cat. Reptilia Brit. Mus.* I, p. 273.
1890. *Ptyctolaemus gularis*, Boulenger, *Faun. Brit. Ind. Batrachia and Reptilia*, p. 117.
1905. *Ptyctolaemus gularis*, Annandale, *Journ. As. Soc. Bengal* (n. s.) I, p. 85.
1908. *Ptyctolaemus gularis*, Wall, *Journ. Bombay Nat. Hist. Soc.* XVIII, p. 505.
1912. *Ptyctolaemus gularis*, Annandale, *Rec. Ind. Mus.* VIII, p. 41.

There are sixteen specimens of this species in our collection. All of these were collected in Assam with the exception of one, which according to its label, is stated to have been collected by Mr. R. P. Mullins at Nainimukh, Chittagong Hill Tracts. The specimens agree fairly closely with the description of the species as given by Boulenger. In certain examples from the Garo Hills the colouration is well marked. There are 5 broad transverse bands on the body and a number of similar bands on the head and the tail. The upper surface of the limbs is also cons-

¹ Boulenger, *Brit. Mus. Cat. Lizards* I, p. 273 (1885).

picuously marked. In certain specimens the dorso-lateral surfaces of the anterior half of the body are marked with a net-work of dark brown, enclosing oval or elliptical white spots.

The nuchal crest is separated from the dorsal and in badly preserved specimens they are hardly distinguishable. The examples show considerable variation as regards the proportionate length of the various parts :—

Measurements in millimetres.

—	Shillong.		Tura.	Garó Hills.	Cachar.	Chittagong Hill Tracts.
Total length	220.0	252.0	231.0	246.0	234.0	227.0
Length of head	21.5	23.3	20.5	22.0	20.0	18.8
Width of head	12.5	12.3	11.5	12.3	10.8	10.0
Length of snout	8.6	9.0	9.0	9.2	8.1	7.5
Diameter of orbit	5.5	6.0	5.8	5.5	6.5	5.4
Length of body	50.5	57.7	51.0	58.0	50.0	45.7
Length of hind limb	50.0	53.0	48.0	52.0	56.0	58.0
Length of fore limb	30.0	30.0	29.0	33.0	32.7	30.5
Length of tail	148.0	171.0	159.5	166.0	164.0	162.5

The following are the localities whence specimens are represented in our collection :—

16002	Nemotha, Cachar District, Assam	.	J. Wood-Mason.
3980	Shillong, Assam	.	Daffla Expedition (Maj. Godwin-Austen).
19836—8	Shillong, Assam	.	T. Bainbridge Fletcher.
19835	Shillong, Assam	.	N. Annandale.
5203	Goalpara, Assam	.	H. L. Houghton.
18521—25	Above Tura, Garó Hills, Assam	.	S. W. Kemp.
	" " " "	.	"
16995	Kobo, Abor Hills, Assam	.	Capt. M. de Courcy.
16895	" " " "	.	S. W. Kemp.
19839	Nainimukh, Chittagong Hill Tracts	.	R. P. Mullins.

Genus *Cophotis* Peters.

This genus has hitherto been represented in our collection by a single specimen of *Cophotis ceylanica* obtained in exchange from the Basle Museum. Last year during my short visit to Ceylon I collected a young specimen of the same species from the road side at Nuxwara Eliya ; it is now preserved in the collection of the Zoological Survey of India.

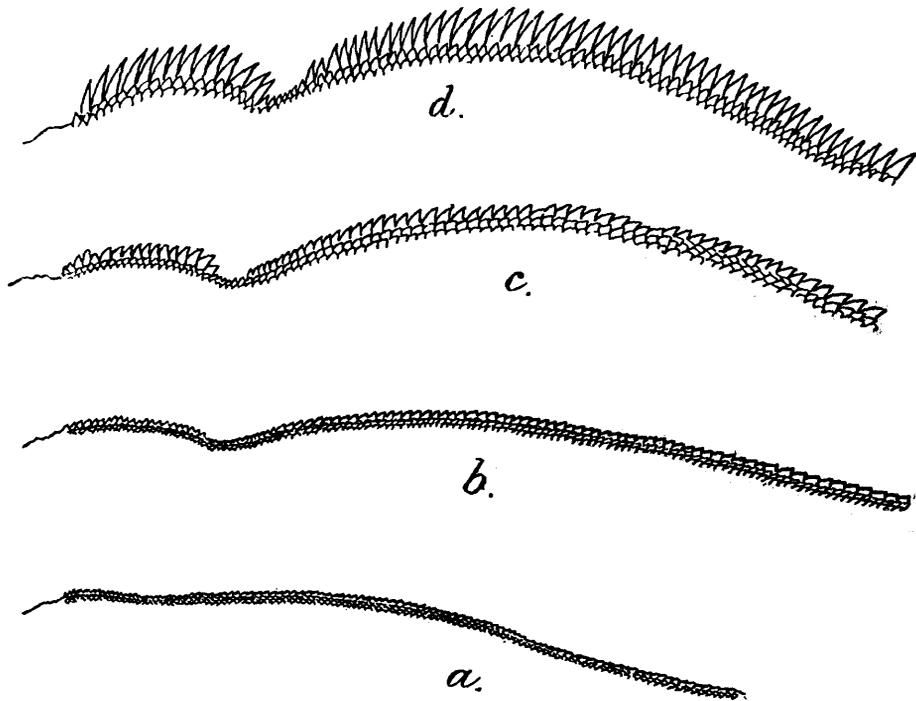
In the young specimen the upper surface of the head and the sides just below the eyes are dark. From this dark area bands of a somewhat lighter colour proceed to the under surface of the head. Five or six such bands running obliquely backwards can be made out. The upper surface and the sides in the anterior half of the body are of a dark brown colour. The dorsal surface in front of the hind limbs is brownish and

the tail is marked with several brown bands in its entire length. The spines forming the dorsal crest are black and the keels of some of the scales on the upper surface of the head, body and the limbs are bluish in colour.

Genus *Gonyocephalus* Kaup.

(Plate XII, fig. 4).

There are altogether four specimens of this genus referable to *Gonyocephalus subcristatus* (Blyth) in our unnamed collection; three are from the Nicobars, collected by Major Sewell and one from the Andamans. In the two specimens from Nankauri Island both the nuchal and the dorsal crests are much better developed than in the other two. I was greatly confused at first, but on referring to the literature¹ and our large collection of *G. subcristatus* I am convinced that all the four specimens belong to one species. The two species of *Gonyocephalus* known from the Andamans and the Nicobar Islands *i.e.*, *G. subcristatus* and *G. humei*, are separated from each other on the character of the crests and on the nature of the scales covering the limbs. In all other respects these



TEXT-FIG.—Outline sketches showing the variation in the extent of the nuchal and the dorsal crests in *Gonyocephalus subcristatus* (Blyth).

a = specimen number 14635; *b* = 14644; *c* = 14633 and *d* = 5041 (probably the type-specimen of *G. humei*). Slightly reduced.

species are almost identical. Stoliczka² established *G. humei* on two exceptionally large individuals and the two specimens from Tillingchang

¹ Boulenger, *Brit. Mus. Cat. Lizards* I, pp. 292, 293 (1885); *Faun. Brit. Ind. Reptilia, and Batrachia*, pp. 122, 123 (1890).

² Stoliczka, *Journ. As. Soc. Bengal* XLII, p. 167 (1873).

(Tillingchang) in our collection from Dr. Stoliczka's bequest are probably the type-specimens. Annandale¹ after a thorough examination of this entire material came to the conclusion that the two large specimens from Tillingchang represent aged individuals of the common species, *G. subcristatus*. I entirely agree with Annandale. The nuchal and the dorsal crests are very variable in *G. subcristatus*. In the earlier stages they appear as low denticulated ridges consisting of folds of skin with sharp, triangular spines arranged on them vertically. Later on the spines become prominent and in certain individuals the folds of the skin become considerably raised from the surface and become more prominent than the spines. In the two large examples from Tillingchang both the spines and the folds are well developed. -

As regards the general arrangement of the scales on the limbs there is but little difference between the two so-called species. In one specimen of "*G. humei*" there are a couple of larger scales on the upper side of the left thigh; but this can only be regarded as an individual variation and cannot be taken as a specific character. Aged individuals, as it is but natural to expect, are very rare.

As no figure of either *G. subcristatus* or *G. humei* has been published I take this opportunity of giving a figure of one of the aged individuals of the species and also give outline sketches to represent the variations mentioned above in the nuchal and the dorsal crests.

Genus *Acanthosaura* Gray.

Acanthosaura major (Jerdon).

Dr. B. Chopra has recently collected a fine specimen of this rare and interesting species at Kufri (alt. 8,400 ft.) in the Simla Hills. It agrees very closely with the typical specimens in our collection.

Acanthosaura tricarinata (Blyth).

This lizard appears to be very common in the Darjeeling district of the Himalayas from which there are several specimens in our collection. A specimen from Allahabad in the United Provinces has been referred to this species; it has been in our collection since 1880, and is not in a good state of preservation, but, so far as I have been able to make out, it appears to belong to *A. tricarinata*. The occurrence of this lizard in the plains of the United Provinces needs further confirmation, as it is possible that the specimen No. 5135 in our collection, that is stated to have come from Allahabad, may have been wrongly labelled.

There is a considerable degree of variation in the arrangement of the prominent scales. Usually an oblique, transverse row of conical, ribbed tubercles is present on each side along the posterior border of the head, but in certain examples it is only represented by one or two tubercles. Frequently there are angular series of large and keeled scales across the back, but in some specimens these are inconspicuous.

¹ Annandale, *Journ. As. Soc. Bengal* LXXII Suppl., p. 18 (1904); *ibid.*, (N. S.) I, p. 92 (1905).

In certain specimens the dorsal surface is uniformly coloured chocolate brown.

Genus *Japalura* Gray.

Four species of this genus are known from India and of these two have been described by Annandale¹ within the last decade or so. In the unnamed collection the two common Indian species *i.e.*, *Japalura variegata* Gray and *J. planidorsata* Jerdon are represented by several examples. The former is very abundant in the Darjeeling and the Sikkim regions of the Himalayas, while the latter is found in Assam and has hitherto been recorded from the Khasi and the Garo Hills. Among others in our collection there are five examples of *J. variegata* collected by Dr. Anderson from the Botanical Gardens, Calcutta. It seems quite probable that the species is to be found in the plains of Bengal and that its range extends as far as Calcutta. *J. planidorsata* is also found in Cachar, which is adjacent to the Khasi Hills and several specimens are represented in our collection from this locality.

Genus *Salea* Gray.

In the unnamed collection there are eight nicely preserved specimens of *Salea anamallayana* (Beddome) obtained by Dr. S. W. Kemp and Mr. T. B. Fletcher at Kodaikanal in the Palni Hills, South India. The species is said to be very rare in Museum collections.

The range of the genus was hitherto thought to be confined to Southern India (with a possible extension into Ceylon) but Annandale² recorded these lizards from Moulmein in Lower Burma and described a new species from Assam. *Salea anamallayana* is, however, only known from Southern India.

Genus *Calotes* Cuvier.

There is a large number of specimens of the genus *Calotes* in our collection but most of them are referable to the common Indian species *C. versicolor* (Daud.). There is one specimen from Shillong which I have identified as *C. jerdonii* Günther and six others from above Tura in the Garo Hills, Assam belong to *C. maria* Gray. All the specimens are typical examples of their respective species.

Genus *Agama* Daudin.

In my first collection from the Salt Range, Punjab, which has already been reported³ upon, *Agama melanura* (Blyth) was the only species represented. In August, 1923, further collections were made in the western portion of the range and several examples of *A. isolepis* Boulenger along with *A. melanura* (Blyth) were collected at Musakhel on bare rocks and shrubs.

¹ Annandale, *Journ. As. Soc. Bengal* (N. S.) I, p. 85 (1905); *Rec. Ind. Mus.* VIII, p. 57, pl. V, fig. 4 (1912).

² Annandale, *Rec. Ind. Mus.* II, pp. 37, 38 (1908); also *Journ. As. Soc. Bengal* I, p. 86 (1905).

³ Hora and Chopra, *Rec. Ind. Mus.* XXV, pp. 370, 374 (1923).

Ticks of the genus *Haemophysalis* have been found in the armpits and in the throat-pits, one on each side of the throat, of *A. melanura* and *A. tuberculata*. Mr. Mohd. Sharif, who is working on our collection of ticks, has very kindly named these for me. It may also be recorded that the throat-pits of these three examples of *A. melanura* from Musakhel were full of mites.

There are two specimens in our old collection which do not bear any definite locality-labels but are shown in our registers as presented by the Afghan Boundary Commission. They appear to me to belong to *Agama himalayana* (Steind.), but as full details regarding the localities from where the specimens were obtained are not available I refrain from discussing the distribution of the species.