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The Rev. K. M. Banerjee.
Dr. Mohendralála Sarkára.

NATURAL HISTORY, INCLUDING PHYSICAL SCIENCE.

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THE COMMITTEE OF PAPERS.

The Members of the Council.

The following papers were read:

I.—NOTES ON INDIAN HERPETOLOGY,—*by Dr.* T. C. Jerdon.

Rec. 1st February, 1870.

As some time will probably elapse before my work on the Reptiles of India can be published, I think it advisable to lay before the Society a short account of some recent discoveries in Indian Herpetology, a few of which are the result of my own researches, and very many from the most successful labours of Major Beddome, Conservator of Forests in Madras.

Many years ago, in the Society's Journal for 1853, Vol. XXII, p. 462 and 522, I gave a summary of the Reptiles of Southern India. After the first part had been written, I was suddenly removed to a distant station, and was unable to take my type specimens with me, and they were unfortunately never again seen by me, having been lost or destroyed; but, to complete the paper, I gave a very brief notice of the *Ophidia* and *Batrachia*, naming several new species of the former, and many of the latter order. Most of the *Ophidians* have been found again, but till recently hardly any of the *Batrachians;* and it was a source of great satisfaction to me when Major B e d d o m e, who had previously chiefly confined his attentions to *Ophidians*, partly at my earnest solicitations, directed his researches to *Lizards* and *Batrachians;* and he has re-discovered most of my supposed new species noticed in the Journal, and has also found very many new *Saurians* and a few *Batrachians*. Science owes him a large debt of gratitude for successfully working out the Reptile Fauna of Southern India; and I, on my own part, beg him to accept my best thanks for giving me the opportunity of making known accurately the species collected by myself a quarter of a century ago.

I propose in my work on the Reptiles of India to include those of Assam, the Khasi hills, Cachar, Sylhet, Tipperah, and Chittagong, stopping however at Arracan which, with the rest of the Burmese provinces, has already been given by Mr. T h e o b a l d in his Catalogue of Burmese Reptiles, and who, I am glad to say, is making many additions to his former collections, and will, I hope, duly publish the result in a separate form. I shall also include the Reptiles of Ceylon, and this addition to the extent of my Indian province will, I hope, make the work of much greater value.*

In the present notice I shall take Dr. G ü n t h e r's "*Reptiles* of British India" as the ground work of my observations.—

I have hardly any new Chelonian Reptiles to add to the Indian Fauna, but have to record three not hitherto known in our province as just defined.—*Manouria emys* is not uncommon in the hills of

* I propose, if my health will permit me, to give a second edition of the "Birds and Mammals" of India, with the addition of species from the districts noted above, making them of greater use to the Indian naturalist.

North Cachar, where fine and large specimens were obtained by Major Godwin-Austen, and from enquiries I made, it extends still further west to the Jaintia hills. This gentleman has presented some specimens to the Indian Museum, one of which measures 22 inches. This Tortoise, hitherto recorded from Burma, differs from all other forms in the pectoral plates not meeting in the centre of the plastrum.

The same zealous naturalist also obtained a few shells of what appears to be *Pyxidea Mouhotii*, figured by Dr. Günther, and recorded as from Siam. He has presented specimens of this also to the Indian Museum.

Cyclemys dentata of Bell, the prior name of which appears to be *Emys dhor*, Gray* per Buchanan Hamilton's MS. name, and which was afterwards called *Emys dentata* by Gray in Hardwicke's Ill. Ind. Zoology, must be added to the Indian Fauna. It is by no means rare in the upper provinces. I first saw it at Delhi, where it was called *Dhád*, (evidently a form of the same word as B. Hamilton's), and afterwards at other places.

Günther has figured with Gray's MS. name, a Tortoise as *Cyclemys Oldhami* from Burmah. Theobald says that the very specimen figured was taken by himself, and is merely an old specimen of *orbiculata*. It was 8 inches long, and the figure in Günther shows a more oval form than the largest specimen in the Indian Museum, and the vertebral plates differ slightly.—I have quite recently obtained in the Sylhet district a very fine specimen of a *Cyclemys* which is of a still more elongated form, the sides being almost parallel, and, though differing in some parts, much more resembles Günther's figure than any specimens of true *orbiculata*, the name of which, as given by Bell, announces its very rounded form. This specimen is 15¾ inches long on a straight line, and 10½ broad, by about 5½ in height. It is of an uniform blackish colour above and below.

It differs from Günther's figure in being a more elongated oval form, but agrees very nearly with the description, with the following exceptions. The first two of the middle vertebral plates are dis-

* Described and figured in Gray's Synops. Rept, p. 20, pl. 8 and 9. A work not in Calcutta, I believe.

tinctly longer than broad, whilst Günther says "the three middle vertebral plates as *long* as *broad*," which applies exactly only to the third in the series. The postgulars are shorter, the suture between them not being nearly so long as the postgulars; the pectorals are not nearly so long as the abdominals, and the suture between them is not so much arched as in Günther's figure; the preanals are little shorter than the abdominals; the anals are rather longer than broad, and bluntly pointed behind, whilst in two specimens noted by Dr. Günther, they are as broad as long in one, and broader in the other. On the whole I do not consider that the differences here noticed suffice for specific separation from *C. Oldhami* as described by Günther, but the whole aspect and structure of the shell appears to point out a difference from *C. dhor* or *C. orbiculata*. However, till young specimens of various ages from the same localities are obtained, no satisfactory conclusion can be arrived at. Dr. Günther entirely ignores *C. dhor*, or *orbiculata*, as a species of British India, and therefore does not point out the differences from that species which his adoption of Gray's MS. name of *Oldhami* would imply him to believe in.

The margin of *Geoemyda carinata*, Blyth, is entire behind. The type specimen so completely resembles the figure of *Emys Belangeri*, Lesson, figured in Bélang.'s voyage (Rept. pl. 1), that I am constrained to believe them identical. This figure has been hitherto usually assigned as a synonym of *Emys trijuga*; the original was said to have been taken near Calcutta, which Blyth doubted, never having seen that species in lower Bengal, though it abounds in Southern India and Burma. The figure, if intended for *E. trijuga*, is certainly, as Günther remarks, *not good*; but on the contrary it is a very fair representation of Blyth's species, and as such I shall accordingly consider it, and note in my Reptiles of India.

Pangshura Sylhetensis, n. sp.

I lately procured from the stream that runs from the Terria Ghat at the foot of the Khasi hills several specimens of a new tortoise closely resembling *P. tecta*, but differing in the following points. The posterior margin of the shell is very strongly serrated, this effect being added to by a division of the hinder marginal plates;

the last vertebral plate too is much narrower posteriorly, being pointed behind in the largest specimen; the lateral suture of this plate is continuous with the suture dividing the penultinate marginal plate from the one next above it, whilst in typical *tecta* the lateral margin joins the centre of the penultimate plate. The first two vertebral plates are less strongly ridged. The 4th vertebral does not appear to differ in shape from that of *tecta*. The plastrum also does not differ appreciably from that of *tecta*, except that in all plates the dark spots are of greater extent.

The differences noted above are constant in specimens of the following dimensions: The largest has the shell 7¾ inch. long by 5⅞; the next 6 by 4½, and the smallest 3¾ by 3. Had I only had one specimen, I should have hesitated at making a distinction, but with three of such different ages, I am inclined to think there is more than a casual variety.

Among the Monitor Lizards, *(Varanidæ) Psammosaurus scincus*, Merr., not recorded by Günther among the Reptiles of India, is given by Theobald in his Cat. Rept. Museum Asiat. Soc., from the Punjab, Salt Range. I found it very common in the N. W. P. and the Punjab, in the latter country indeed more common than *Varanus dracæna*. I also found it common at Delhi, Umballa, Lahore and other parts of the Punjab. It has recently been described by Carlleyle in the Journal of the Society, Vol. XXXVIII, under the name of *Varanus ornatus*, where a good account of the fresh coloration is given. Some time before the notice, I presented a young specimen in spirits to the Museum from Umballa.*

I found *Varanus lunatus* also in several of the Museums upcountry, to wit Delhi and Lahore; and Carlleyle met it also in the vicinity of Agra.

Of the *Lacertidæ* Günther records but three inhabiting our province, of two of which he had not seen specimens, and of the third only one specimen exists in the British Museum. This lizard, named by Günther *Acanthodactylus Cantoris*, I found extremely abundant in Hurriana, in the country about

* I find by a note in J. A. S.'s Vol. XXIV, p. 715 that Blyth was the first to recognise this African Reptile from Theobald's specimen, and he moreover states that he has seen other specimens from the other provinces.

Hissar, Sirsa, and extending, though more sparingly, to the foot of the Alpine Punjab.* I got it at Bheirber in the bed of the river there, and within a very few miles of the head quarters of another true Lizard, cogeneric with *Ophiops Jerdoni*, Blyth. Theobald, on examining the hitherto unique specimen of this curious reptile, found that the nostrils were not as in *Ophiops* between two nasals followed by 3 small post-nasals, but in one nasal followed by two post-nasals, and he accordingly placed it under the genus *Tropidosaura*. But this last group has distinct eyelids, being a sub-genus of *Lacerta*, whilst *Ophiops Jerdoni* and this new species want them entirely. As the presence or otherwise of eyelids is, I consider, a more important character than the position of the nasals, I shall (in conformity with a suggestion of Dr. Stoliczka, who has been good enough to examine these specimens and other doubtful species of mine) call them *Pseudophiops*, and the new species found by me in the Alpine Punjab I shall call *Pseudophiops Theobaldi*. It is very common on the ascent of the first range of hills beyond Bheirber, in rocks and bare ground; and I found one specimen on the banks of the river close to where I got *Acanthodactylus Cantoris*, both frequenting the boulders in the dry bed of the river. It closely resembles *P. Jerdoni*, but differs in its more elongate and depressed head; the posterior frontals are separated by a small intercalated linear scale; the 3rd chin-shield forms a suture with its fellow, whilst in *Jerdoni* it is separated by small scales; and there are several other points of difference which will be noted more particularly in the "Reptiles of India." The colour is brown above, with a narrow pale yellowish line on each side from the eyebrow, lost on the tail; and another wider from below the eye through the ear to the thigh; between these stripes is a series of irregular black spots, which are slightly continued both above the upper and below the lower line; lower parts pearly white; tail pale brown with a reddish tinge, most distinct in young specimens. Length of one 3 inches, the tail being $1\frac{3}{4}$.

Major Beddome has recently found *Ps. Jerdoni* on the banks of the Toombuddra, and another place in Southern India. My first type specimen, now in the Museum, was got by me at Mhow in Central

* The young are very beautifully striped longitudinally.

India. At Saugor, also in Central India, I got several small specimens of a Lizard of which I have a sketch with some details which, in spite of its geographical position, appears to resemble *Ps. Theobaldi* more closely than *Jerdoni*; but without specimens this fact cannot be satisfactorily settled. It is found on all the rocky hills about Saugor, but rather rare.

Major Beddome has also quite recently sent me one specimen of yet another species of this genus, obtained by him on the Bremnagherry hills, at an elevation of 5000 feet. It differs from both the previous species in having a pair of small anterior frontals, the other two having one large one; the head is still shorter than in *Jerdoni* and more triangular, the tail is distinctly more rounded at the base than in either of the other two species, in which it is somewhat depressed. The coloration is very similar to that of the two others. I shall call this species *Pseudophiops Beddomei*.

Cabrita Leschenaultii, D. and B., recorded by me in my Catalogue from the banks of the Cavery and neighbouring parts, has been recently procured in these localities by Major Beddome, and he has also obtained one specimen of a second *Cabrita* which he has named *C. Jerdoni*. It is from the same district as the other, but differs from the typical species in several important points, as noted in the description of the species in the Madras Medical Journal for 1870, No. I, p. 34 &c.

I find that *Tachydromus sex-lineatus* extends into Assam and the Khasi hills, where by no means rare about Shillong. Günther has not seen it from a locality north of Rangoon.

Dr. Stoliczka informed me of a second species of *Tachydromus* which was sent by Mr. H. L. Haughton to the Museum from Goalpara in Assam. It differs from the last and indeed from all the species cited by Günther, except *T. japonicus*, in having 4 pairs of chin-shields instead of 3, but it has 6 dorsal series of scales, and 10 ventral series; all of them keeled. Its coloration is very similar to that of *T. sex-lineatus*, but the glistering pale green longitudinal stripe is broader, and the dark line below narrower. I shall with the concurrence of the Curator name this *Tachydromus Haughtonianus*. Length 8½ inches, of which the tail measures 5¾.

Of the *Scincidæ* I have ascertained by numerous specimens from Darjeeling, the Sutlej valley and Kashmir, that Günther's

Eumeces Himalayanus is identical with Blyth's *Mocoa Sikimensis*, which has thus a wider distribution, for which Günther's name would have been more appropriate, than the local but prior name of Blyth.

Theobald has described (Cat. Rep. Asiat. Mus. p. 25) a curious Scink as *Pleistodon (Eumeces) scutatus*, the locality of which was unknown. I procured one specimen of this interesting form in the Alpine Punjab, on the route from Jhelum into Kashmir.

Major Beddome has sent me specimens of a form of *Euprepes* which comes under Günther's first section *Ateuchosaurus*, distinguished among other points by the two-keeled scales. He names this *Ateuchosaurus Travancoricus*, having first obtained it in the Travancore hills, but has since found it in Malabar, and S. Canara, though rare. I procured it many years ago in Malabar, and noticed it at page 479 of Vol. XXII of the Journal, without describing it, as the specimen was unfortunately lost, but I took a sketch of it which I still possess. It is a small species, (vide Mad. Med. Journ. 1870, No. 1, p. 33).

The same indefatigable naturalist has also recently procured *Euprepes trilineatus*, Gray, only hitherto obtained by myself from one locality, and a second very closely allied species which I have called *Euprepes Beddomei*. It differs from *trilineatus* in its shorter, much more elevated head, with correspondingly shorter muzzle, in the upper labial shields posterior to the eye being larger and higher, in the median occipital plate being pointed instead of truncated behind, in the larger number of body scales, the smaller size of the spines, bordering the anterior edge of the ear, and in having 5 instead of 3 pale bands which extend well on to the base of the tail.

The imperfect specimen of *Tiliqua trivittata*, Gray, of Central India, presented by myself, still exists in the Museum here, and is evidently a distinct species from *T. rufescens* (or *carinata*, Schneid.) of which it is classed as a variety by Günther, differing, as Theobald, remarked by its 5-keeled scales. Its head also is shorter and higher, and there are some other points of difference.

Neither Major Beddome nor myself have found an identified *Lygosoma Dussumierii* of D. and B., from the Malabar Coast, which

Günther erroneously identifies with *Eumeces indicus*, a large species which I obtained in warm valleys in Sikim.

Several scinks obtained by Dr. Stoliczka within our limits, and described by Steindachner, have to be added to our Reptile Fauna, viz. *Euprepes Petersii* from Chamba, *Mocoa Blythii* from the Wangur valley, and *Mocoa Stoliczkana* from Spiti, &c.

I found the beautiful *Pseudopus gracilis* very common at Shillong. The spots on the body described as black or dusky, are in the living animal a beautiful and shining turquoise blue, quite similar to those of the European species.

I have ascertained that the very curious *Sphenocephalus tridactylus* of Blyth, stated to be from Afghanistan, is very common in the desert and sandy parts of the Southern and Western Punjab, extending quite to the borders of Sindh, and probably throughout the latter country also. Indeed, I should doubt its occurrence at all in the elevated region of Afghanistan. It is known in those parts of the Punjab which it frequents as the *Rig Mâhi* i. e. Sand-fish, the same name by which the *Scincus officinalis* is known by and sold in Indian bazars, both being esteemed aphrodisiac. Its habits when alive fully bear out Mr. Blyth's conjecture on this point; it dives into the sand with great ease and celerity.

Major Beddome lately detected a very curious lizard of this family *Sepsidæ* in the Museum at Madras, which he described as *Sphenocephalus? pentadactylus.* (Madr. Jour. Med. Sc. 1870, No. 1, p. 30). It is stated to be from the banks of a river in Malabar.

Among the Geckos, Major Beddome has discovered several new *Hemidactyli* and *Gymnodactyli*, besides my *G. Malabaricus* which he has quite recently sent me from the foot of one of the ghats leading from Lognaad into lower Malabar, where also I procured my specimens. *Hemidactylus aurantiacus*, and *H. reticulatus* are described (l. cit.) by Major Beddome from Shevaroys and Colegal respectively.

I have recently got *Hemidactylus triedrus* from Bandelkund sent me by Colonel Tiornan to whom I had written to endeavour to procure the specimens of an Agamoid lizard hereafter to be noticed.

The *Gymnodactyli* are named by Maj. Beddome respectively *G. marmoratus*, *gracilis Wynaadensis* and *ornatus*, and I find from my

drawings that I had previously found *Wynaadensis* in the same district. These small *Gymnodactyli* resemble each other very closely, and possibly one of them may on comparison be found identical with *G. Jerdoni*, described by Theobald in his catalogue. Major B. has ascertained that *G. indicus*, Gray, described from specimens sent home by myself has generally an unequal number of pores on one side than on the other side. A very curious new form has been described by Beddome, from the Tripatty hills in North Arcot, as *Calodactylus aureus*. The Gecko has the ends of the toes dilated into large disks, (vide Madras Med. Journ. 1870, No. 1, p. 30, pl. II).

My *G. littoralis* has hitherto not occurred to Major Beddome, or any of his collectors, but, I have little doubt, will yet reward their labours. It is very distinct from any of the other small Geckos, having the basal plates of the toes much dilated,—especially the most anterior one which is double the size of the others and somewhat nail-shaped; beyond this the apical portion of the phalanges are composed of small narrow plates all terminating in nails. The subcaudal scutæ are large.

I have recently obtained what appears to be a fine new species of *Pentadactylus* of Günther from the Khasi hills. This I shall call *P. Khasiensis*. It has numerous larger rounded tubercles mixed with the very small scales of the back. The nostrils are situated between the rostral, 1st labial and a supranasal, and are followed by several small scales. There are 10 upper labials, the last long and somewhat undulating on its upper edge, and 11 lower labials. The body above is covered with about three series of elongated spots, which become two at base of tail, and finally unite into one. It is a large species.

I possess one or two specimens of *Nycteridium Schneideri* from the Khasi hills; rare apparently so far north, though it is mentioned by Günther from Assam and Bengal. The only other novelty to mention in this family is a species of *Eublepharis* which appears distinct from both *Hardwikii* and *macularius*, a species not in Günther, but recorded in Theobald's Catologue. Unfortunately it is only a young specimen and imperfect. I got it in Hurriana and shall provisionally call it *Eublepharis fasciatus*. It has the larger tubercles of the back larger and finer than in *macularius*, and

less close and narrower than in *Hardwickii*. It is beautifully banded with white, having one nuchal band as in the last named species, but 3 dorsal ones, besides one on the root of the tail. Its head and body are 1¾ inches long, but the tail is imperfect.

Of the *Agamidæ* I have obtained two apparently new species of *Japalura*, one from Sikkim, the other from the Khasi hills, which I have named respectively *microlepis* and *planidorsata*. The former, of which I only obtained one specimen, differs conspicuously from *varicgata*, which is also extremely common in Darjeeling, by the much smaller scales being more sparingly mixed with large ones. The back is reddish, abruptly separated from the greenish color of the sides by a series of somewhat raised scales; the dorsal crest is very low and continued to the base of the tail. The head and body is 2⅝ inches; the tail (imperfect) 2½.

The other new species is a very remarkable one, lately procured in the Khasi hills; the back is very flat, in which it resembles the last; it has no nuchal nor dorsal crest, but a double series of very slightly enlarged keeled scales separated by only one row of smaller scales, but on the neck by four or five; and there are several series of angularly bent larger scales, the angles directed backwards. The superciliary scales are strongly keeled, and there are several scales above the tympanum enlarged and prominent. It has a strong similarity in the arrangement of the scales to *Japalura Swinhonis* from China.

One specimen from head and body nearly 2, tail about 3¼ inches. I found two specimens only. They are of a dull yellowish colour with dusky cross bands, and the sides mottled dusky.

P e t e r s* has two sub-genera, which with *Japalura* should perhaps form sub-divisions of *Otocryptis*, all agreeing in the concealed tympanum. He describes a *Ptycolæmus gularis* from Calcutta (bought).

The smaller race of *Sitana*, being the one procured at Pondicherry and the south of India, must retain Guerin's name of *Sitana ponticeriana*; and the Deccan species, being the larger of the two, cannot well stand as *S. minor*, and will require a new name, for which I propose *Deccanensis*, that part of India being its head quarters.

* Monat. Berl. Akad., 1864, p. 386.

I have also got one specimen of a new *Oreocalotes* from the valley of the Sutlej near Kotegurh, which I call *Oreocalotes major*. I have not seen a specimen nor a drawing of *Oreocalotes minor* to compare it with, but it differs from the description of that species by its smaller and much more numerous body scales, by the abdominal scales being conspicuously larger than those of the sides and in its mode of coloration. The general colour is purplish grey above, with some black cross bands on the head, which become arrow shaped on the trunk and the root of the tail; a blackish band runs from behind the eye along the side of the neck; the sides of the body are green, mixed with black, (the black scales being small and smooth, and the green ones large and keeled); limbs and tail with dusky cross bands and rings; the throat whitish, with a few black specks, and a very small light purple gular lap; belly tawny white with brown specks. Length 9¼ inches; the tail being rather more than 6.

Beddome has recently got specimens of *Calotes Elliotti*, the *C. Rouxi* of my catalogue from the western forests.

I have got five specimens of *Calotes Maria* from the Khasi hills, and of a second species which is apparently Blyth's *Calotes platyceps*. This differs conspicuously from *C. Maria* by the fewer scales of the body, the very much larger scales of the throat, the lower sincipital crests, the inferior of which is situate immediately above the orbit, and not at a distance as in *Maria*. Both are beautifully green with more or less various marks. *C. maria*, being much the largest species, some specimens measuring 18 inches, of which the tail is above 13. *C. platyceps* scarcely exceeds 12 or 13 inches, the tail being 9.

I much doubt the occurrence of *C. Maria* in the North Western Himalayas, whence recorded by Günther on the authority of one of the Schlagintweits; but, as I will have frequent occasions to note in my "Reptiles of India," several of the habitats of the Reptiles given by the brothers Schlagintweit appear to be erroneous, probably from displacements of labels.

Oriotiaris Elliotti, Günther, is clearly *Calotes tricarinatus*, Blyth, which that naturalist in a MS. copy of his paper "on some Reptiles" &c., forwarded to me, has marked *new genus*. It is rather uncommon about Darjeeling, and never grows to a large size. Günther strangely puts its with a query as *Calotes Maria*.

One of the type specimens of my *Calotes nemoricola* still exists, though much injured, in the Museum here, and it is very distinct from *C. gigas*, also from the same locality.

The only Agamoid lizard noted in my Catalogue is the one described by Blyth from specimens obtained by myself at Saugor in Central India as *Brachysaura ornata*. All my endeavours to procure specimens for a more minute examination of this very curious form have hitherto failed. From some remarks made to me by Colonel Tytler, I was led to believe that Bundelkund would prove to be the head quarters of this Agamoid, and this indeed is highly probable, but Colonel Tiornan to whom I applied has not yet succeeded in getting me specimens. Till some one with sufficient scientific proclivities examines those districts, we must rest satisfied with our incomplete information. From a rough sketch of the Lizard and some of its details, I can add to the notes furnished by Blyth, the following scraps of its structure.—Scales rather large, in distinct transverse bands, not directed so obliquely upwards as in *Calotes*, not quite so straight as in *Salea*, nostrils at some distance from the snout in a large scale ; a distant shoulder fold ; one large tuberculate scale in the middle of the head, surrounded by smaller 4—6 sided ones ; a ridge of strong scales protecting the eye. Length of one about 6 inches, the tail being not quite 3.

To the section of Rock lizards, I have to add a species of *Trapelus*, also from the Alpine Punjab, quite distinct from Günther's *Trapelus megalonyx*. The central shields of the head, 2 or 3 series, are large ; the upper lip is surrounded by 31-32, instead of 39 shields, there are no conspicuously large shields on back and sides ; the scales on the upper base of the tail conspicuously larger than those on the under side ; the foreleg does not reach the hip-joint ; the nails are sub-equal and all very much smaller than the thumb ; coloration yellowish brown, with a series of dark brown oblique bands interrupted on the median line and on the sides, below pale yellowish. Length of specimen 7 inches, the tail being 4½.

Agama agilis, Oliv., an African Lizard, was added to the peninsular Fauna by Theobald, who obtained it in the Panjab Salt Range. I have never observed it.

I am not quite satisfied of the distinctness of *Stellio indicus* and *Laudakia tuberculata*, or rather I am inclined to class them with Günther as one, but unfortunately I did not secure many specimens (for comparison) from different localities.

Steindachner's *Stellio himalayanus*, brought by Stoliczka from Ladak and Tibet, is quite distinct, but hardly enters our province.

From information, recently sent me by Major Beddome, the beautiful *Liolepis guttata* must be added to the Peninsular Fauna. I sent him a specimen procured by myself at Thayetmyo, and he in reply wrote back that he had recently got this Lizard from Canara, quite identical with my Burmese specimen. This is a highly interesting addition to our Peninsular Reptile Fauna.

In my Reptiles of Sth. India, under the head of *Acanthodactylus Nilgheriensis*, I state that I have reasons for believing that that Lizard, and the Chameleon named in my Catalogue as *C. pumilus* from the Nilgherries, on the authority of Walter Elliot, were most probably Cape species that had somehow got mixed with his Indian specimens.

Dr. Stoliczka has pointed out (Proceedings Asiat. Soc. for Jany. 1870, p. 2,) that the ridge on the upper part of the head of the Indian *Ch. vulgaris* are stronger than in the African form, and that there are no lateral longitudinal bands on the body. These and some other differences are, by no means, opposed to the once current opinion, that the Indian form is specifically distinct from the African, the former having been called *Ch. Ceylonicus*, Laur.

Among *Ophidian* Reptiles I have fewer novelties to point out than in the *Saurian* or *Batrachian* Reptiles.

A considerable number of new species of the curious earth Snakes, chiefly of the families of *Uropeltidæ*, have been added by Major Beddome. The remarkable *Xenopeltis unicolor* has been obtained in Southern India, as recorded by Theobald. Amidst the multitude of species of the families now known to science, I am not certain to which my three species of *Cylindrophis* can be referred, but with regard to my placing them in that genus, I have the authority of Dr. Cantor (to whom I referred several of my doubtful species), and whose remarks I now keep in possession.

Under the head of *Oligodon*, I have only to remark that I believe the figure of Russell 1, pl. 19, which has been called *Col. tæniolotus*, but generally referred to the young of *Tripidonotus stolatus*, refers to a species of *Oligodon*. The general aspect, short head, markings, short tail and few sub-caudal scuta are all marks of that group, and the presence of palatine teeth recorded by Russell is not a certain negative sign, for I see that several of this group have lately been shown to possess them. Whether this snake can be referred to one of the lately described species or not, it must (in case my observations are verified) stand as *Oligodon tæniolatum*.

I lately procured two species of *Cyclophis* in the Khasi hills. One of them appears to be *Cyclophis frænatus* of Günther, described from Afghanistan and Mesopotamia. The only difference I can detect in the description is, that in my specimen, the temporals are 2 + 2, the first temporal having apparently a small one cut out of its anterior edge. Length of my specimen 14½, the tail being 4⅛.

A specimen* in the Museum (No. 81½), marked *Dipsas monticola*, Cantor apud Blyth, appears to be the same species; a second small black mark begins behind and below the gape, continued as a line of specks on two or three lowest series of scales, and finally just forming a dark edging above and below the last row of long scales, and is lost on the posterior part of body; below pale yellow.

The other species is a much smaller snake, a female, only 7¾ inches long, having 5 large eggs in her $\frac{3}{8} \times \frac{3}{16}$ of an inch. The tail was 1¼. The single large nasal is posteriorly obliquely slit up to the edge, one preocular and two postoculars; the supraciliaries small and occipitals large; 15 scales; ventral scuta 127 to 135, and 33 to 38 sub-caudals. The color is brown, with a pale lateral band from the eye extending to the tip of the tail; below this a mottled brown and yellowish band; chin, throat and anterior part of neck yellow, the rest of the lower parts red. Upper labials 6, normally, the last three sub-equal in size, and not as in *frænatus* where the 6th is as large as the 4th or 5th together; temporals 1 + 1. I propose for this one the name of *Cyclophis rubriventer*.

I obtained one small specimen of a snake in lower hills of the

* This is to all appearance the type of Blyth's *D. monticola*, Cant. [EDIT.]

North Western Himalayas, which from its long snout ought to be placed among the *Dryophidæ;* but the scales are not lengthened, it has the coloration of a young *Compsosoma*, and the tail is short, with few sub-caudals. The specimen unfortunately is not in very good order, and I do not like to name it at present. The head is somewhat depressed, with a long-pointed snout, very distinct from the neck; eye of moderate size; body not compressed; nostril much higher than broad, extending on the upper surface of the snout; anterior parietals only a little smaller than the posterior; nostril in one long nasal, faintly grooved; one loreal rather larger than high; two preoculars, the lower one touching 3 upper labials, and two postoculars; temporals 2 + 2 + 3, or the first upper one divided into two; 8 upper labials, 5th and the edge of the 6th enter orbit; 19 rows of smooth scales; 175 ventral scutæ and 44 pairs of sub-caudals. The second pair of chin shields is the largest and ridged externally. Length of specimen, 12½ inches, the tail being 1⅝.

I obtained another very remarkable snake quite recently on the Khasi hills, which does not agree with any recorded genus (to description of which I have access), and the family to which it belongs is also doubtful. It has a blunt head, very distinct from the thin neck; long, rather compressed body, and long tail; its scales are very numerous, not imbricated (as in some of the *Homalopsidæ*), and the shields of the head are short, and do not cover the occiput, but the nostrils appear to be lateral.

I propose calling the genus after our accomplished and able Secretary in the Natural History Department, Dr. F. Stoliczka, and the species—

Stoliczkia Khasiensis.—It has two pairs of frontals, the first pair very small and from the state of the specimen rather difficult to notice; the second one very large. The rostrum is slightly injured, but the nostrils appear to be lateral, though placed rather in front, and apparently surrounded by a slightly swollen edge; the vertical is very short, broader than long; the supraorbitals rather small; one large preocular; 2 postoculars; no large temporals, small scales like those of the body immediately following the postocular; 8 upper labials, 5th and 6th entering the orbit, the last very long;

3 pairs of small chin shields ; 27 to 31 rows of small lengthened ovate tuberculated or ridged scales, increasing in size towards the ventrals, those forming the last row on either side being largest ; ventral scutæ 207, anal undivided ; sub-caudals 114, single. Length of specimen, 26½ inches, the tail being 7¾. Colour a dusky plumbeous above, white below.

Some of the characters of this remarkable species approximate it to the *Dendrophidæ :* its somewhat depressed head, long thin neck, compressed body, and long tail, scales increasing in size towards the ventrals &c. ; in the character of the shields of the head, and of the scales of the body, it resembles certain *Homalopsidæ*, and its short blunt head has an appearance of some of the *Amblycephalidæ*, and it has the single sub-caudals of *Cercaspis* and *Amblycephalus*. I shall not attempt now to refer it to any family, but leave that for the future.

I obtained a single example of the very rare *Xenurelaps bunguroides*, *Elaps bunguroides* of Cantor, of which only one specimen is known, the type example in the Museum at Oxford. My specimen is a rather smaller one, being 15 inches, of which the tail is 2⅛. It has 224 ventral scutæ and 44 sub-caudals, and 13 to 15 rows of scales on the body. It only differs from G ü n t h e r ' s description by having one white intercepted line commencing on the vertical, and extending to the throat on each side. When alive, the color of the body was a deep rich madder-brown, and the bands were yellow, paling posteriorly. The chin and throat are whitish, which passes into red, gradually deepening on the posterior part of the body and tail, and there are numerous oblong black marks on the abdominal and sub-caudal centres.

The number of anurous Batrachians noted by me in my paper formerly alluded to, from Southern India, was 28. Of these, two are doubtful, as distinct from allied species, *viz.*, *Rana nilagirica* from *R. gracilis*, my *R. agricola*, and *Pyxicephalus fodiens* from *P. brevis*, my *P. plurialis*. Of the other supposed new species named there, three have been described by G ü n t h e r under different names, and Major B e d d o m e and myself have obtained these, and all the other supposed new species, with two exceptions, which I doubt not will yet

be procured by Major Beddome. This gentleman has also found at least six new species not observed by myself.

I have also obtained at Darjeeling and the Khasi hills at least 6 new species. I can only enumerate these here, but will endeavour to give recognizable characters in another paper.

Rana crassa of my Catalogue has been noticed by Theobald, and is distinct from *Rana Kuhlii* of Ceylon which it much resembles.

I have obtained one fine new *Rana* at Darjeeling, somewhat allied to *R. Liebigii*, but distinguished from it by its more fully webbed feet. I call this *Rana Sikimensis*.

Beddome has got one new very handsomely marked true frog from Southern India, which he names *Rana vittata*. He has also procured my *Rana flavescens* and *R. curtipes*, both which are *Hylorana*, and quite recently *Hylorana Malabarica*, sufficiently distinct from Günther's *H. temporalis* of Ceylon, as indeed that naturalist suspected, though he had not seen *Malabarica*. My *Hylorana curtipes* is a most distinct form from *Malabarica*, and Günther must have had a very hazy idea of *Malabarica*, when he asserted, on seeing a copy of my drawing of *H. curtipes*, that it was most probably *H. Malabarica*, he himself acknowledging that he had never seen that species.

Beddome has sent another small species of *Hylorana* which he calls *H. bipunctata*.

A species of *Hylorana* common at Shillong, which, from its coloration, I considered at the time to be *erythræa*, I find on examination and comparison of specimens to be quite new, and shall from its most curious bird-like voice call it *Hylorana pipiens*. It has much larger legs than any of the other Indian *Hylorana*, and is of a much more slender habit altogether, with longer and sharper muzzle and more slender limbs.

My *Polypedates variabilis* is the same as *P. pleurostictus*, Günther, as he himself suspected. Beddome has obtained one small new species of this genus, and I have got three new ones, one very remarkable one from Sikkim, and two beautiful species from the Khasi hills. A very large green backed one is perhaps the one just mentioned by Blyth in a note as *Polyp. smaragdinus* from the Naga hills, which name I shall retain for it. The other Khasi

one is a complete link to *Rhacophorus*, having the basal portion of the fingers webbed. It is a very beautiful species which I shall call *P. annectans*.

P. smaragdinus grows to a large size, about equalling *Pol. marmoratus*, Blyth, (*Afghana*, Günther). It resembles *P. maculatus* something in habit, but is not so slender : the upper surface of the head and hind neck is slightly rough with minute tubercles, whilst the lower surface of body is perfectly smooth. The body is not nearly so long as the hind leg to the heel, whilst in *maculatus* it is as long or slightly longer. Colour, a beautiful green above, below yellow. The sides of body and thighs variegated and banded with reddish brown and black. The disks of the fingers and toes are not very large. Length of one, head and body 3¼ inches, hind leg 6¼.

I obtained *Rhacophorus gigas* in Sikim and the Khasi hills, where I also obtained what appears to be the true *Rhacophoras Reinwardtii*. This is a much smaller species than *gigas*, and all my Khasi specimens have one or two deep blue spots on the sides of the body, but the dark mark on the webs of the toes is less marked, than in the figures of this species in Schlegel.

I recorded *Rhacophorus Reinwardtii* apud Dum. and Bibron, from Malabar in my Catalogue, whence it was also procured by the French collectors, but Günther has entirely ignored this genus as from Southern India. Major Beddome has sent me a specimen, on comparing which with Khasi specimens a perceptible difference is apparent. The head and body of the Malabar are indistinctly though finely tuberculated ; the habit is more slender, and there is a distinct fold of skin over the eye in *Reinwardtii*, absent in this. The head too is perhaps a trifle longer. I shall provisionally call it *Rhacophorus malabaricus*. It has the spots on the sides of the body, so conspicuous in Khasi specimens of *Reinwardtii*.

I have also got a new *Pyxicephalus* from the Khasi hills, and Beddome has sent me apparently my *P. rufescens* from the Wynaad. He also sent me small specimens of *P. breviceps*, which from their appearance during life, he, like myself, considered to form two distinct species, and which Theobald also considers to be distinct.

I obtained numerous specimens of *Xenophrys monticola*, Günther, both at Darjeeling and the Khasi hills. It has distinct vomerine teeth which Günther was unable to detect in the specimens of the British Museum. I also obtained five specimens of a large species of *Xenophrys* both in Sikim and the Khasi hills, which I propose describing as *Xenophrys gigas*.

Besides *Ixalus tinniens*, *Ixalus femoralis (glandulosa* of my Catalogue), *I. Wynaadensis*, and *I. opisthorhodus* (my *Limnodytes phyllophila)*, all of which Beddome has obtained, he has got at least three new species of this genus in Southern India; and I have got another in the Khasis.

Beddome has likewise obtained *Caloula montana* of my Catalogue, which appears perhaps to be *C. obscura* of Günther, and another species which I have not yet seen, but which, from his description, appears to be *C. guttulata* of Pegu, lately figured by Günther. He has also procured a small form allied to *Caloula*, which appears to be identical in generic form with one obtained by Dr. Stoliczka in Penang, for which he proposes the name of *Ansonia*, and which he will himself describe shortly.

I have procured *Diplopelma rubrum* from Nellore where I first obtained it, and it appears to be one of the varieties of *Diplopelma ornatum* apud Günther, as I see that many specimens were presented by myself, but I consider it perfectly distinct from *D. ornatum* of Dumeril and Bibron, with which my *D. malabaricum* is perhaps identical. I have also received from Major Beddome a specimen of *D. carnaticum* of my Catalogue, which again is quite distinct from *D. rubrum*, and appears to be generally spread. I have specimens from Assam and Central India.

II. Observations on some species of Indian birds, lately published in the Society's Journal,—by Allan O. Hume, C. B. (Abstract).

This paper contains much additional information regarding some species of birds which have been noticed in Vol. xxxviii, Pt. 2, of our Journal by Mr. W. T. Blanford. Mr. Hume has been for many years paying special attention to Indian Ornithology, and with the help of many friends has brought together one of the