

III NOTES ON *LACHESIS ANAMALLENSIS* AND ALLIED FORMS

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(Plate III).

I had an opportunity to examine recently a small collection of viperine snakes from Coorg and I noticed that the description of *Lachesis anamallensis* given by Boulenger in his volume on "Batrachia and Reptilia" (*Fauna of British India*, p. 430) really covers two distinct species. Obviously there is considerable divergence of opinion in regard to the specific characters of this viper. Major Wall gives sketches of it in his book on "*The Poisonous Snakes of India*", which do not quite fit in with Boulenger's description referred to above. For example, the figures indicate only one postocular and eight upper labials, while Boulenger makes out "two or three small postoculars and nine or ten upper labials." Moreover, Major Wall mentions (page 53) that small scales may or may not be intercalated between the nasal and the second labial, which fact is not noticed by any of the early writers.

Fayrer gives examples of specimens which differ from Günther's description of the scales on the head and on the body of *T anamallensis* as being more or less distinctly keeled in twenty-one rows (*Thanatophidia*, p. 20). Jerdon regarded (*Journ. As. Soc. Bengal*, 1854, vol. XXII, p. 523) his *Trigonocephalus malabaricus* as very closely allied to *T nigromarginatus*, forms which have since been considered identical respectively with *T anamallensis* and *T trigonophalus* (Boulenger, *Faun. Brit. Ind., Rept. and Bat.*, pp. 430-431). It is also noteworthy that Günther calls attention to Jerdon's reference to smooth scales in his description of *Trigonocephalus malabaricus* and he maintains that "they are keeled in our species as in all *Trimeresuri*." Further he proceeds to mention that "Mr. Elliot possesses a drawing of a young specimen, named *T malabaricus* (Jerd.). It resembles our species in coloration, but has a white, black-edged temple-streak instead of a black one. Mr. Jerdon does not mention either a black or a white temple-streak" (*Rept. Brit. Ind.*, p. 387).

After examining the specimens in my collection I cannot resist the conclusion that these writers are really alluding to two distinct species which in certain respects possess common characters, and Boulenger's description accordingly requires, in my opinion, recasting; for his diagnosis of *T anamallensis* is wide

enough to receive several species of *Trimeresuri*. I make out that *Trigonocephalus malabaricus* is specifically distinct from *T. anamallensis*, and I give below separate diagnoses for them. I retain the specific name of the former species given by Jerdon.

*Lachesis anamallensis*¹ (Günther).

Trimeresurus anamallensis, Boulenger, *1 ann. Brit. Ind., Rept.*, p. 430 (in part only); Günther, *Rept. Brit. Ind.*, p. 387.

Head considerably longer than broad, in the ratio of 5 to 3, and distinctly triangular. Snout far more acute than round, and the temporal swellings modest. Scales on the margin of snout in front more or less concave; they may form a distinct outer ridge in some cases. Scales on the head small, cycloid, slightly imbricate. Those on the snout and the scales adjacent to the supraoculars are slightly larger. Internasals separated by a big scale. Supra-loreals descend to connect the nasal and the second upper labial which forms the anterior boundary of the facial pit. One or two intercalary scales between the nasal and the 2nd upper labial rarely absent. Rostral broader than deep. The upper margin of rostral visible from above. Supraocular faintly or distinctly divided into two. Seven to eleven scales between the supraoculars. Two or three postoculars and a single subocular. The second loreal slightly more than half the size of the first or the third. Nine or ten upper labials separated from the subocular by two rows of scales: the lower series consisting of bigger scales, the posterior ones keeled. Twelve to thirteen lower labials and seven sublinguals. In some specimens the fourth sublingual is quite as large as the first. Temporals fairly large and keeled.

Body. Neck very much narrower than the posterior region of body which is fairly rounded. Scales round the neck 23 to 26, in the middle of body and the preanal region 21 to 23. All the scales on the body keeled. Sometimes those on the posterior region smooth, hexagonal, non-imbricate. Scales on the thickest portion of the body large. Ventral shields: 147 (138 to 155, Boulenger).

Tail perfectly rounded, acutely pointed and strongly prehensile. In spirit specimens the tail may become twice coiled. Subcaudals, two rows 47 (44 to 58, Boulenger).

¹ Major Wall adopts the nomenclature of Dr. Noguchi and perhaps the justification for such a procedure is that it is more convenient to have a common terminology. In such a case *Bothrops*, *Trigonocephalus*, *Trimeresurus* and *Lachesis* would be synonymous generic terms, but it is doubtful whether the generic identity of the Asiatic and the American species has been established. Dr. Noguchi agrees with Stejneger that the South American *Lachesis* is sufficiently characterized by the peculiar scutellation of the tail. Apart from this, the more or less prehensile nature and the shortness of the tail in the Asiatic forms and other general characteristics peculiar to this group are sufficient for Stejneger to employ the designation of *Trimeresurus* for these forms. But Noguchi considers that there is greater affinity between the Asiatic and New World pit-vipers than there are differences and accordingly uses the common generic name *Lachesis*. It has the merit of simplicity and in this paper his terminology is followed.

Colour. Green or sometimes yellowish, side of the belly with or without white spots : these are edged below by a black longitudinal band. The white spots when present become horseshoe-shaped markings in the preanal region. Dorsal surface with large oval or lozenge-shaped brown spots which run into a zigzag line posteriorly. Head mottled. Two roundish green or yellow spots on the front of the nape. Temporal streak present. A dark transverse line between supraoculars and another behind the internasals only in the green forms. Lips green, belly green, tail banded with brown or green stripes. Tail sometimes speckled. Young forms have a conspicuous black temporal streak. Body green. Tail banded by white bands which are incomplete. Tip of tail white (Total length $2\frac{1}{2}$ ft. Tail 4.5 inches, Boulenger).

Habitat. South India. This is a purely arboreal snake and its staple food consists of small birds, rodents and lizards. The colour of the body exactly harmonizes with its surroundings, variegated by light and shade, and the animal is thus able to attack victims without being noticed. The fangs are enormously big, a specimen 25 inches long may have fangs measuring nearly 12 mm. along the outer curve.

Lachesis malabaricus (Jerdon).

Trigonocephalus (Cophias) malabaricus, Jerdon, *Journ. As. Soc. Bengal*, XXII, p. 523 (1854).

Trimeresurus anamallensis, Boulenger, *Faun. Brit. Ind., Rept.*, p. 430 (in part).

Head. The interorbital space fairly deeply concave. Snout marked off from the head, with a conspicuous out-crop of large imbricate scales. Head (without the snout) squarish ; temporal swellings conspicuous. Snout rounded. Rostral scale squarish. Internasal large, united or only separated anteriorly by a very minute white fleshy tubercle. The supraloreal forms the roof over a secondary pit formed by the nasal and the second labial, which are in contact. This secondary pit may or may not open into the loreal pit by a dorsal groove ; the supraocular somewhat narrow, divided into three, clasped by two large scales ; 6 to 8 scales between the supraoculars, faintly or obtusely keeled ; 8 or 9 upper labials. The second praeocular always less than half the size of the first or the third which are nearly equal. Subocular large, single, and one large postocular or two small ones. Three small, very strongly keeled temporals, very often conical. Occasionally the first upper labial fused with the nasal. One large scale intercalated between the fourth and fifth upper labial and subocular. The series of scales between the subocular and the upper labials strongly keeled ; ten lower labials and five sublinguals.

Body not fat. Neck about the size of the preanal portion ; 21 rows of scales round the neck, round the thickest portion of the body and in front of the anal region ; all strongly keeled. Ventral shields 150 to 160 ; anal entire, fairly large.

Tail perfectly triangular in cross section, not prehensile, subcaudals in two rows, 55 to 58.

Colour. Body rufous with broad brown bands; head also rufous. Spirit specimens show a broad temporal band with a few white dots in the centre, sometimes the whole surface of the body is brownish with deeper bands. Ventral surface steel bluish, a few white spots on the sides in the anterior third of the body. Tail dark with gray bands or dotted white. Ventral surface of the tip of the tail whitish with the extreme point black. Total length 19 inches, tail 3.5 inches.

Habitat. West coast of Peninsular India, including Coorg. This species is not arboreal like its congener *L. anamallensis*, but frequents low scrubby jungle full of dried twigs. The protective disguise is almost perfect and it is reported to be very fierce in its habits.

***Lachesis coorgensis*, sp. nov.**

The collection of snakes received from Coorg, which forms the subject matter of this paper, included this species, a specimen of which I am sending to the Director of the Zoological Survey of India. I have named the snake after the place from where the specimens were obtained and it may be described as follows:—

Head perfectly oval, slightly broader than long, snout nearly squarish, passing insensibly into the head, temporal swellings large, scales of the head and snout moderate, smooth and imbricate. Internasals separated by a scale nearly as long, and the rostral broader than deep by at least 1 mm. A groove or a secondary pit formed by the supraloreal, nasal and the second upper labial may or may not be present. When present it opens behind into the loreal pit. The second loreal less than half the width of the first or the third, supraocular large, broken into three, sometimes into four divisions: one very large postocular, subocular sometimes divided, usually four small rounded smooth temporals. Nine upper labials, third and the succeeding ones separated from the suboculars by a row of three broad smooth scales. Sometimes an intercalary small scale between the third loreal and the supraocular, the same also separating the third labial and supraocular. Twelve lower labials and four sublinguals, the hinder scales of the temporal region very broad and keeled.

Neck and Body. Neck about the girth of preanal region or markedly narrower, scales round the neck 24, round the thickest portion of the body 21 to 23. In the preanal region 15 to 16. Ventral shields 152 to 153, the preanal incomplete and the penultimate shield notched in the middle, anal entire and broad.

Tail slightly prehensile, thick, truncated at the end; it is compressed and oval in cross section, with a small spine at the tip; subcaudals in two rows, 35.

Colour. Head brown, sometimes suffused with yellow, a very broad temporal band (conspicuous in spirit specimens) edged with white, rostrum and upper lip gray, lower lip either gray or

brownish, body reddish-yellow with gray cross bands, ventrally grayish. Sometimes bluish with white spots all along the side,  shaped, involving the lateral scale and half of the succeeding ventral shield. Colour markings on tail somewhat similar to those of *L. malabaricus*. Total length 23 inches, tail 2.5 inches.

Habitat. Coorg Town, alt. 3500-4000 ft. (South India). These specimens were found on an Acacia tree in a plantation and the protective colouration is most striking.

