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SEVENTH CONTRIBUTION TO THE HERPETOLOGY OF
TROPICAL AMERICA.

By EDWARD D. COPE.

[Read before the American Philosophical Society, July 16, 1869.]

HYDROMEDUSA TECTIFERA, *Cope, sp. nov.*

Char. The anterior portion of the carapace depressed and prolonged ; the first vertebral scutum nearly twice as long as wide ; the nuchal scutum narrow transverse, twice as wide as the first vertebral ; four times as wide as long. Light brown, with slightly radiating or transverse darker brown spots on the costal plates. Below bright yellow.

Description. Carapace more elevated at the anterior vertebral bone than above the pelvis, then descending steeply, and prolonged roof-like to the nuchal margin. Posteriorly rather abruptly decurved to opposite the lowest plane of the sternum, and considerably below the strongly recurved points of the posterior lobe of the same. Two posterior vertebrals and each posterior costal with a projection at the posterior part. Margin a little elevated and turned out above the hinder limbs. The sides descend steeply, and the superior plane is broad outside of the scapulæ. Lateral marginals not prominent, being a ridge directed rather upwards, which is bounded above by a strong groove. Fine median marginals not united to disc throughout, but by costal processes. The first three marginal bones very much wider than long, the second nearly twice as wide. The nuchal marginal very large, as long as wide. Three marginal bones of the bridge with an undulate ridge along their upper margin, the third with the ridge running diagonally across it, descending behind.

Two last pairs of costal bones united on the median line. Last vertebral scutum of an urceolate form, much narrower at its point of contact with the penultimate. The latter the narrowest of the series. Penultimate marginal scutum extending nearly to the middle of the last vertebral. Second marginal scutum much longer than wide, the first, twice as long as wide. First costal longer than wide.

Sternum without fontanelle or intersternal elements, the anterior lobe both longer and wider than the posterior. The gular scuta small, the humeral and femoral each considerably wider than the pectoral. No axillary or inguinal plates, bridge short ; claws strong. Posterior lobes with a deep rounded emargination.

Measurements.

	In.	Lin.
Length carapace (over arch).....	11	4
Depth.....	3	1
Length sternum.....	8	4
Total width below.....	6	2
Length bridge.....	1	8
“ femur (straight).....	2	4
“ tibia.....	2	5
“ foot.....		23

Upper surface of limbs dark brown.

Habitat. This turtle occurs in some of the tributaries of the Parana or Uruguay rivers, either in the Argentine Confederation or the Banda Oriental, but in which, I do not know. My information is derived from W. W. Morgan, M. D., of Philadelphia, who resided many years in Monte Video, where he obtained the specimen from a collector.

This species differs from those already known, in the greater extension forwards and laterally of the anterior margin of the carapace. In consequence the forms of the vertebral, nuchal, and marginal plates are exaggerated in form, the first in length, the last two in width.

CHELOPUS RUBIDUS, *Cope.*

If this genus be regarded as co-extensive with the *Geoclemmys* of Dr. Gray, it embraces with the present addition, fourteen species.

Carapace oval, moderately elevated and with obtuse median keel; margin entire not recurved. Vertebral plates broader than long, with concave posterior sutures, except the anterior, in which the length is somewhat in excess. Its lateral margins are parallel and the anterior angle is produced, curtailing the small nuchal. Scuta concentrically grooved, visible, though obsolete in the old individual. Plastron rather plane, deeply emarginate behind; very openly in front. Inguinal and axillary scales very small. Areolæ of the scuta a little above and behind their centres.

Claws short, toes much united on all the limbs. Soles and palms with large scales. Forearm with six cross-rows of large scales in front, and two longitudinal rows on the outer side. A cross series of three across the carpus behind. Posterior foot club-shaped. Testudo-like, the heel with three cross rows of shields of 1, 3, 2 respectively, the posterior of the last two very large, double the next smallest. Rest of the hind limb small scaled.

Head broad plane above, muzzle and loreal region vertical. Beak obtusely hooked, not emarginate; alveolar faces without grooves or ridges.

Ground color of body yellow, the limbs and throat shaded and spotted with red, which is margined with black. The neck above and laterally is marked with numerous black rings and lines; below with the gular region it is closely black dotted. Tail very short, even in the males, yellow, with fine black longitudinal lines above. Limbs with black and pink dots. A chevron shaped red band extends from the orbits round the canthus nostralis and muzzle, and another wider and with narrow black margin between the orbits, with the apex forwards. Two similar bands extend from the orbits posteriorly to the obscure tympanum, and two are concentrically arranged on the occiput, the apex of the anterior being separated as a large red spot. In the male the colors are deeper and brighter. Carapace yellowish brown, each costal scutum with a horizontally oval black-edged yellow spot in its area, surrounded by yellow annuli. The young shows that there are two such concentric annuli. Marginals with alternating longitudinal yellow and black lines above, brown below. In the young, the vertebrals have a marginal yellow annulus, and median oval ring with yellow and black variations.

Below, deep brown, the plastron broadly yellow all round. In the young the yellow extends over the whole plastron; in the very old the brown is very narrow medially.

Measurements, (No. 265.)

Greatest length plastron.....	Cm. .1525
Width medially (Total).....	" .1123
Greatest length carapace.....	" .16
Greatest elevation carapace.....	" .064
Hind limb from knee.....	" .0538
Fore " elbow.....	" .041
Head and neck above.....	" .07
Width head (Temporal).....	" .024
From orbit to end muzzle.....	" .0082

Habitat. Tuchiañ Tehuantepec, Mexico, discovered by Prof. Francis Sumichrast. Four specimens, Nos. 264-5-6-7.

This handsome land tortoise appears to approach sufficiently near the *C. callicephalus*, Gray (Proc. Zool. Soc., London, 1863, 254), of unknown habitat, to render a comparison proper. That species according to Gray, has a posteriorly truncate plastron, and a notched beak. The vertebral scuta are as long as broad, the second and third longer. The chin, throat, and upper parts of the neck are spotless. We owe this species to our active correspondent, F. Sumichrast, who since the days of Natterer, has not been equalled in the thoroughness and extent of his zoological researches in Tropical America.

CONIOPHANES PICEIVITTIS, Cope.

Scales in twenty-five longitudinal series, vertex and muzzle in one plane; upper part of rostral plate prominent, not produced between the internasals. Latter less than half prefrontals. Prefrontals longer than wide, decurved to the subquadrate loreal. Postnasal higher than prenasal. Preoculars one or two, postoculars two, superior larger. Superciliaries narrow. Frontal rather wide, with long posterior angle, and parallel lateral outlines which are little shorter than the anterior. Occipitals elongate, scarcely emarginate behind. Superior labials eight, fourth and fifth entering orbit. Sixth higher than long; seventh largest. Temporals 1-2. Postgeneials shorter than pregeneials. Inferior labials ten. Gastrosteges 158 two anals; urosteges, 90. Total length, .542 m.; of tail, .063 m.; from muzzle to canthus oris, .014 m.; interorbital width, .0048 m.

The ground color above and below is white, which is immaculate below, except on the throat and chin, where it is black dusted. Above three broad black bands extend from the end of the muzzle to the end of the tail. The inferior commences on the middle of the third row, and occupies three and two half rows of scales; a row and one-half intervenes between this and a median dorsal band which covers six and one or two half rows. The ground color on the head is an irregular line from the muzzle along each canthus and beyond orbit, and the upper labial plates; these are thickly dusted with black, the anterior spotted on the edge.

From Chihuitan, Tehuantepec, Western Mexico. F. Sumichrast, Coll. in Mus. Smithsonian, No. 248.

SYMPHIMUS LEUCOSTOMUS, Cope, *sp. et gen. nov.*

Char. gen. Dentition isodont; cephalic plates normal except that the internasals are confluent with the nasal, and the latter with each other and with the loreal. Preorbitals one. Rostral shield not prominent; scales smooth, equal, uniporous; anal bifid. General form elongate.

This genus differs from *Chilomeniscus*, to which its technical characters are similar, about as much as any colubrine serpent does from a burrowing calamarian. Its form is nearly that of *Cyclophis*, and it should perhaps be placed nearest to it in the system. Steindachner's *Bergenia mexicana** should, it appears to me, be referred to *Chilomeniscus* Cope, of which it is the fourth species.

Char. specif. The head narrow, not very distinct, the muzzle acuminate, but obtuse at the extremity. The scales in fifteen longitudinal series. The form is cylindric and elongate. The tail of medium length as in *Cyclophis*. Rostral plate high as wide, scarcely visible from above, not prominent. Side shield of the muzzle pierced by the nostril and extending to the preocular; latter long as high, not reaching the frontal. Postoculars one on one side, two on the other. Superior labials seven, third and fourth bounding orbit, all longer than high except the fifth; temporals 1-2 large, the anterior bounding the fifth and sixth labials. The median sutures of the rostronasal and prefrontal plates of equal length. Frontal longer than wide, with concave sides; superciliaries wide, occipitals elongate, common suture nearly as long as prefrontals and frontals together, truncate behind. Inferior labials eight, fifth largest—narrow; pregenaeals a little longer than postgenaeals. The eye is rather small. Urosteges, 111, gastrosteges.

Color olive gray above, a dorsal band of light brown extending over three rows of scales to the origin of the tail; the skin of its median region being yellow. Throat, chin and superior labials light yellow, a black line above the superior labials from the second posteriorly. The brown of the upper regions descends to the lower row of scales at about the twelfth transverse row; two or three lower rows are pale edged. Belly dirty white. The dorsal band is posteriorly ill defined, and extends a little beyond the vent; tail brown.

	In.	Lin.
Total length, No. 240.....	31	5.5
Length tail.....	10	9
Length rictus, No. 227.....		6.8
Interorbital width.....		2.8
Width muzzle.....		1.8
Width orbit.....		1.4
Length tail.....	7	0

No. 240. From Chihuitan, from the same.

No. 227. From the collections of the Smithsonian Institution from the province of Oaxaca, Mexico, made by Francis Sumichrast.

* Reised. Oester. Freg. Novara Reptilia, 92 fig.

LEPTODIRA MYSTACINA, *Cope*.

Scales in nineteen longitudinal series. Body very slightly compressed, head distinct, an elongate oval. Superior labials seven, the second in contact with the upper and lower preoculars, third and fourth with orbit, and fifth with occipital excluding the temporal. Fourth, fifth, and sixth higher than long; temporals 1-1-2. Oculars 2-2, inferior small in both sets. Internasals long as wide, prefrontals longer than wide. Frontal longer than wide, with parallel sides, considerably in contact with superior ocular. Occipitals oval, scarcely emarginate behind. Postgenaeals longer than than pregenaeals. Gastrosteges 187, anal 1-1, urosteges 70.

The ground color is a dirty white, and is uniform below. Above it, marked by very broad cross-bands, which extend to the gastrosteges and are twice as wide as the intervals of ground. There are thirteen to the vent; on the posterior half of the body they divide on the vertebral line, and alternate; one is thus continuous with two of an opposite side, leaving the ground in lateral squares. Head above, including occipitals, a lighter speckled brown above, leaving a white collar. A black band from eye to angle of mouth, and a second from below the eye to mouth, parallel to the above, encloses with it a light band; a black band from eye to nostril; lips in front black spotted. Total length 16.25 inches; of mouth 7 lines; of tail 4.25.

Habitat. The western region of Mexico, near the Isthmus of Tehuantepec, two specimens (251-261) sent to the Smithsonian Institution by Francis Sumichrast. This serpent approaches very near the *L. pacifica* Cope in details, but differs totally in coloration. The structural differences are the following:

<i>L. mystacina.</i>	<i>L. pacifica.</i>
Head elongate oval;	Head short wide.
Preocular reaching frontal;	Preocular not reaching.
Prefrontals longer than wide;	P. f. wider than long.
Fifth labial to occipital;	Fifth labial not to occipital.

TRIMORPHODON, *Cope*.

Proceed. Acad. Nat. Sci., Phila., 1861, 297.

This peculiar genus, hitherto not found outside of the Mexican, Central-American and Sonoran districts, is well illustrated by the collections received by the Smithsonian Institution. Two species have been hitherto known, and I now add three others, as follows:

I. Scales in 21-3 Rows.

Seven (six) superior labials; three loreals; head black in front with a white T shaped mark; back with uniform black rhombs.

T. TAU.

Eight superior labials; head broad, short; three loreals; head dark-brown, with light cross-bar on muzzle and between eyes, and V on occiput; body with broad brown annuli; tail one-fifth the total.

T. UPSILON.

Nine superior labials; head long, swollen behind; two loreals; head with a lyre-shaped pattern, back with irregular rhombs, with pale centres; tail one-sixth the length.

T. LYROPHANES.

Nine superior labials; head long; two loreals; head with chevron bands; body with irregular pale centred rhombs.

T. BISCUTATUS.

Scales in 27 Rows.

Nine superior labials, three loreals; head elongate; two dark cross-bands and two chevrons on head; back with very irregular rhombs, with pale centres; tail one-sixth.

T. MAJOR.

TRIMORPHODON TAU, *Cope*.

Scales in twenty-three series. Muzzle projecting considerably beyond the mouth. Rostral plate somewhat produced behind; internasals, about one-fourth size of prefrontals, which are long as wide. Frontal with straight lateral margins, which are longer than anterior. Occipital not longer than frontal, regularly rounded behind. Nostril in middle of nasal. Three loreals, three post and three preoculars. Temporals, 2-3-4. Superior labials six, the fifth probably composed of two plates fused, as it is twice as long as deep, on both sides. The fourth and fifth enter the orbit, the third is cut down by the lower loreal and preocular. Inferior labials, eleven. Body strongly compressed. Total length 0m. 236; of tail, .035 m.

Above gray, with twenty-three jet-black rhombs, which extend to the gastrosteges by their lateral angles. Tail with ten rhombs; all everywhere unspotted with paler. Sides of belly black spotted. Head gray with a black mask above as far as the middle of the occipitals, but with two lateral ear-shaped prolongations on the same; a pale T-shaped mark extends transversely between orbits, and longitudinally to end of muzzle.

One specimen, No. 236, from F. Sumichrast, from the western part of the Isthmus of Tehuantepec, Mexico.

TRIMORPHODON UPSILON, *Cope*.

Internasals broader than long, prefrontal broad as long, frontal with parallel outline not reached by the preocular. Oculars 3-3. Nasals distinct, loreals three, forming an L. Temporals 3-3-3. Fourth and fifth labials in contact with orbits. Twelve inferior labials. Scales in 2-3 series. Body with twenty-four brown annuli, which are broken into irregular spots on the belly, and are broader than long on the vertebral line. On all but the anterior third the length, a vertical brown bar stands between these on the sides. Chin and lips white, superior plates brown spotted above. Loreal region spotted. Temporal and occipital region brown with a pale Y on the occipital common suture. Total length 0.34 m. Tail .052 m.; head to aictus .011 m.

One specimen in Mus. Smithsonian from I. I. Major, from Guadalajara, West Mexico.

TRIMORPHODON MAJOR, Cope.

This large species has a head of lanceolate form; the body is compressed and the tail slender. The large number of series of scales characterizes it most distinctly. Gastrosteges 258, anal 1-1, urosteges 88. The preocular does not reach the frontal; temporals 3-4-5. There is a broad brown band across the muzzle and chevron, ceasing between the eyes, whose limbs are lost above the rictus ovis. A second chevron behind this is closed by a spot connecting the limbs behind. The dorsal rhombs extend to the gastrosteges, and are manifestly formed by the union of four spots, two vertebral, and one on each side; they enclose three spots of the ground in a cross-row.

Two specimens from near Tehuantepec from Francis Sumichrast.

TELEOLEPIS STRIATICEPS, Cope, *sp. et gen. nov.*

Character genericus. Dentition diacranterian. Cephalic shields normal; two nasals, the nostril in the anterior one; the loreal region with a deep longitudinal groove. Scales equal, smooth, biporous; anal shield entire. Tail short, body slender; head wide, very distinct.

Disregarding the scale pores, this form might be regarded as a near ally of *Xenodon*, or perhaps of *Opheomorphus*, for it has the head of the first and the body of the last. The importance of Reinhardt's scale pores I have often had occasion to observe, and I believe their absence or single or double existence to be as important indices of natural groups as any other structural feature. In general, Reinhardt's tables show that subterranean and aquatic Colubrine serpents do not possess these pores, while the more highly developed and typical forms of a more aerial life possess them double; the Coronelline forms of an intermediate character, possess single pores, though frequently none, and rarely two.

Teleolepis agrees with *Alsophis* in many technical characters, except in having a single anal shield, but the latter differs especially in its excessively elongate tail. A close approach appears to be made by *Zamenis*, but here the anal plate is double also. *Bothrophthalmus* Schleg. a *Lycodont*, presents the peculiar loreal groove.

Character specificus. The body is rather compressed, the urosteges not angulate. The scales are in nineteen longitudinal series, and are rather wide on the dorsal region. The length of the tail enters the total 5.66 times. The head is broad and flat, and the neck narrow. The rostral plate is flat, and slightly visible from above. The internasals are little shorter than the prefrontals, but not so wide. Both nasals are visible from above, but not the loreal; the preocular reaches the frontal. The latter is as long as the occipitals and rather narrow, with concave borders. Each occipital is as broad as the middle suture; the superciliaries large. The eyes are large and with round pupil.

Nasals about equal; the loreal with a curved supero-posterior margin, which invades the single preocular; postoculars three, the superior in contact with occipital only, the inferior the largest, joining only the fifth and sixth superior labials. The temporals are very small and number 2-3-4. Superior labials eight, fourth and fifth entering orbit; sixth

quite elongate, last two each longer than high. Inferior labials nine; genieals equal, not elongate. Gastrosteges 189, urosteges 70. Total length of a young animal 0m 30; of tail 0m 03.5.

Color above light brown, with a dorsal series of transverse quadrate deep brown spots extending from nape to middle of tail; they extend over seven and two half rows of scales, and are restricted by a light yellow line, which extends on each side the back. The spots are yellow-edged anteriorly and posteriorly. The sides are marked with two rows of alternating pale brown blotches, of which the superior is opposite the dorsal series. There is a triangular dark edged yellow spot on the extremity of each gastrostege; belly closely brown punctate. A blackish band extends from the rostral plate to the side of the neck, and three similar bands with pale middles extend on the top of the head to the nape. Lips and chin yellow, brown blotched.

This species was found by Geo. Sceva, of the Thayer Expedition to Brazil, and is No. 909, Mus. Comparative Zoology, Cambridge, Mass.

LYGOPHIS LACHRYMANS, Cope.

This species repeats the generic characters of *Lygophis* in the diacranterian dentition, lack of scale pores, tail of medium length and normal sentellation.

Scales in seventeen series, obtuse. Muzzle short, rostral shield not as high as wide, not prominent. Internasals broader than long; frontal broad, shorter than occipitals, with a right angle behind. Superior labials eight, fourth and fifth only in orbit, sixth only higher than long. Loreal longer than high; oculars 1-2, the anterior not reaching frontal; temporals 1-2. Inferior labials large, nine; pregenieals shorter than postgenieals. Gastrosteges 173; anals 1-1; urosteges 78.

Color above, chestnut brown; ends of gastrosteges and first three and a half rows of scales blackish, yellowish margined above from side of neck to end of tail. On the anterior half the body is divided by a yellowish band on the first and second rows of scales. Below and labials bright yellow, the anterior superior labials brown margined. A deep brown band from eye across sixth labial, another across seventh, and a black spot on side of neck. Head above brown. *Habitat*, unknown.

This species is remotely like *Coniophanes fissidens*. It differs from *Rhadinaea taeniolata* Jan. (*Enicognathus*) in the broader frontal, and the lip bands as well as uniform back.

ALSOPHIS RIJGERSMAEI, Cope.

Six specimens of this species serve to represent its characters. In three the scales are in 23 series, in one in 21. The loreal plate is longer than high, and with a straight superior suture, except on one side of one individual, where it is angulated above as in *A. antillensis*. The muzzle projects considerably beyond the month, but the rostral plate is not prolonged on its upper surface. Superior labials eight, third, fourth, and fifth in orbit; these with the sixth are the only labials higher than long. Temporals 1-2 the anterior in contact with inferior of the two postoculars only. One preocular occasionally divided and not reaching frontal.

Nasals different in size, the anterior much smaller and not more elevated than the loreal. Muzzle very narrow, internasals longer than broad, vertical elongate and contracted by the concave superciliary sutures, its anterior suture one-half its length, which equals the common occipital suture. Occipitals emarginate behind. Gastrosteges 201, 201, 204, 210; anal $\frac{1}{1}$; urosteges 100, 122, 108, 100. Length 37.25 inches, of which the tail measures 3.25 inches.

Color, dark slate brown above, with a number of blackish cross-bands behind the head, which are sometimes quite indistinct and sometimes separated by paler bands. A broad brown band from the nostril through the eye which expands and is lost on the temporal region, though its lower boundary is continued as a line on the side of the neck. The scales on the median dorsal line have a white border. Belly, the posterior half black, anterior yellowish, gray spotted. Upper labial region orange, brown spotted; gular region grayish brown and orange mingled. Frontal and occipital plates dark medially. This species is in general appearance much like the *A. sanctaecrucis*, but it has the loreal plate of the *A. angulifer*, and several more series of scales than either. The frontal shield is of a narrower form than in either *A. sanctaecrucis* or *A. antillensis*.

Habitat. So far as yet known, this distinct species is confined to the small island of St. Martins, in the Spanish West Indies, which has an area of only about thirty square miles. Six specimens were sent to the Academy Natural Sciences by Dr. R. E. Van Rijgersma of that island. I dedicate the species to him in recognition of his labors in endeavoring to lay a basis for the complete zoology of that island.

XENODON ISOLEPIS, Cope.

Eight superior labials, fourth and fifth entering orbit, sixth the largest, exceeding the seventh. Anal shield bifid. Scales of the body in nineteen series quincuncially arranged of equal size and form, one pitted. General arrangement that of a *Coluber*; the body is also as in that type entirely cylindric. Oculars 1-2; loreal little higher than long; postnasal highest; rostral not prominent. Temporals 1-2. Frontal longer than wide, longer than occipital.

Gastrosteges 156; urosteges 55.

Color uniform leaden above, flanks greenish, below dirty white. Posterior tooth rather short. This species is nearest in technical characters to the *X. neovidii* Gth. but differs entirely in color, and the equal size and form and quincuncial arrangement of the scales. The sixth upper labial is according to Gunther's figure (*Ann. Mag. Nat. Hist.*, 1863, V. C.,) much smaller than the seventh; here the latter is distinctly smaller than the former.

From Pebas Equador on the upper Amazon. Received from Professor James Orton, of Vassar College, New York. A collection recently received from that gentleman from the same locality embraced the following species, all of which are in the Museum of the Academy Natural Sciences, presented through the liberality of Prof. Orton.

Testudinata.

Chelys matamata.

Ophidia.

Typhlops reticulatus, L.

Tortrix scytale, L.

Rhabdosoma microrhynchum, Cope.

Leptodira annulata, L.

Oxyrhopus elelia, L.

Xenodon isolepis, Cope.

Herpetodryas carinatus, L.

Himantodes.

Leptognathus catesbyi, D. B.

Elaps lemniscatus, Linn.

Elaps imperator, Cope, (*E. batesii*, Gthr.)

Elaps scutiventris, Cope.

Bothrops bilineatus (27 series of scales only.)

Lacertilia.

Amphisbaena alba, L.

Amphisbaena fuliginosa, Schreb.

Amiva surinamensis, Gray.

Thecadactylus rapicauda, Houtt.

Anolis viridiaeneus, Peters.

Batrachia.

Pithecopus tarsius, Cope. Specimens with head and body five inches in length.

Pithecopus tomopternus, Cope.

Hyla marmorata, Daud.

Hyla leucophyllata, Beireis. A curious variety with a round or discord blackish spot on the vertex, brown lateral band from end of muzzle, and whole under surfaces a bright salmon color. Another variety apparently has been named *Hyla triangulum* by Günther, P. Z. S. Lond., 1868.

Scytotis allenii, Cope.

Bufo naricus, Spix.

Bufo margaritifera, Merr.

Pipa surinamensis, L.

ELAPS SCUTIVENTRIS, Cope.

Form slender, tail short, thick. Oculars 1-2; superior posterior with its inferior suture continuous with that of the occipital. Superior labials seven, third and fourth in orbit, all except the first higher than long, none reaching occipital. Temporals 1-1. Superciliaries broad as long; prefrontals and internasals of equal length, the former much the wider. Rostral broader than high, not prominent. Symphyseal largely in contact with pregenaeals. Scales in fifteen series. Gastroteges 274; anal divided; urosteges 15.

Above black, except a broad yellow head-band, which extends from the posterior margin of the prefrontals to that of the occipitals. Tail with

one or two crossings above. Below black, with large transversely oval yellow spots, which extend to the third row of scales, and include three or four gastrosteges at intervals of the same width. Length, 17.5 inches, tail, 7 inches.

From Pebas on the Amazon in Equador. From Prof. Orton.

This species appears to be nearest the *E. nardueci* of Jan.

TRIGONOCEPHALUS (Bothrops) ARBOREUS, *Cope*.

Scales in thirty-five longitudinal series, all carinate except the inferior. Eight superior labials which diminish in size posteriorly, bounded above behind posterior line of orbit by seven small scales, which are not distinguishable from those of the temple. Second labial forming anterior boundary of fossa; two rows scales between fourth and orbit. Inferior labials eleven. Three scales on the canthus above, the anterior two large, forming with a pair on top of the muzzle a shielded space of six plates. Superciliaries large, separated by nine rows. Gastrosteges 201, urosteges 64 pairs. The body is much compressed, and the coiled tail with slightly expanded prehensile extremity, appropriately to arboreal life.

Color, greenish yellow, the first series of scales yellow, ends of the gastrosteges with a green line. Dorsal region with faint brownish yellow spots often paired; many scales black edged. Labial scales of both jaws black edged; a black band with yellow interruptions from eye to angle of mouth.

This handsome and venomous tree serpent was discovered by Dr. Otho Wucherer, near to Bahia, Brazil. It is a near ally of the *B. bilineatus* of Nieuwied, but that animal has 27-9 rows of scales, and the top of the muzzle is scaled, (as given by Schlegel in the atlas of his *Physionomie des Serpens*), and the color is slightly different.

TRIGONOCEPHALUS (Bothrops) PUBESCENS, *Cope*.

Scales in twenty-three rows, all including the inferior, keeled. Eight superior labials, the fourth longest, and separated from the orbit by three rows of scales. Second not extending to the front of the maxillary pit. Posterior labials quadrate shorter. Seven rows of scales between superciliaries; two on canthus rostralis above, besides the edge of the preocular. The anterior quite large, flat, the second separated by five rows scales. Maxillary, palatine and pterygoid, mandibular and laryngeal margins with the fang sheaths, silky pubescent, forming short longitudinal fringes. Color, brown, with blackish brown spots on each side from vertebral line to fourth row of scales. The spots are rounded and pale edged and alternating. They are divided by a longitudinal line of the ground near their middle. There are in their intervals above, round pale edged brown spots. A brown band from eye to angle of mouth, pale edged below; a similar band across head *in front of superciliaries*; two divergent brown spots behind the same plates, and two divergent brown bands behind these, all yellow edged. Sides of face and throat thickly brown dusted. Belly closely brown spotted; widest spots near end of gastrosteges. Gastrosteges 182, urosteges 25.

One specimen of this serpent was brought by the Thayer expedition

from the Rio Grande do Sul, Brazil. It is nearest the *B. nieuwiedii*, Spix, but may be distinguished by the extraordinary character of the silky fringes in the mouth as well as by the entirely different coloration. In the latter respect it is rather more like *B. diporus*.

CNEMIDOPHORUS GRANDENSIS, *Cope, sp. nov.*

Char. Ten series of abdominal plates; brachium plated; two frontoparietals. Green with 2-3 white longitudinal lines on each side, a row of brown spots between the two superior and above the more dorsal of the latter.

Description. The nostril is anterior to the naso-frenal suture. Infra-labials four, separated from labials behind by one series flat scales (not granules), mesopterygium entire, with 3-4 rows plates, some small ones on the margin, except at middle. Supranasals in contact; also the prefrontals. Frontal single, much angulate in front. Supraorbitals four, not separated from frontals and frontoparietals by granules. Two pairs wedge shaped parietals, interparietal parallelogrammic as large as one pair. Scutellation minute, caudal scales strongly keeled. Brachials and antibrachials continuous, latter in two rows only; former continuous with postbrachials, the two forming together five rows, all smooth. Nine femoral pores. Anals continuous with abdominals, composed of one large median plate, margined laterally and behind by six plates, the two posterior marginals.

Coloration.—The inferior lateral pale line is interrupted and not well marked; sides pale green, between and above the superior lateral lines, brown; median dorsal line bright green. Nineteen brown spots between nape and rump above upper line, those below rather fewer. Femur with two pale streaks behind, tibia and fore-arm spotted in front. Belly and throat uniform yellow.

Habitat. The Rio Grande, Brazil, brought by Capt. George Harrington, and presented to the Essex Institute, Salem, Mass., (No. 388,) Museum Academy Natural Sciences, Philadelphia.

This species only resembles the *C. murinus*, D. B., and the *C. heterolepis*, Tschudi in the increased number of its abdominal shields. In *C. murinus* the brachium is altogether granular, while the *C. heterolepis* differs in having but one frontoparietal plate, and only two parietals, with frontoparietal smaller than either. It is from Peru.

On account of the united frontoparietal shields I refer *C. hyperythrus*, Cope as type, and *C. heterolepis*, Tschudi, as second species of a genus different from the present, under the name of *VERTICARIA*.

Measurements of *C. grandensis*.*

Total length.....	0m 19.2	Fore limb.....	0m 02
“ to vent.....	0m 06.5	Hind “	0m 036
“ to collar.....	0m 01.9	“ foot.....	0m 2

AMEIVA ANALIFERA, *Cope, sp. nov.*

Of the group of *A. plei*, *i. e.*, with twelve ventral series of scales, no

* In the legal measure of the United States the metre and decimal fractions.

heel spurs, and one frontal plate. The tibial shields in three rows, the outer much larger, and outer toe longer than inner. It differs from that species in having the prebrachial shield small, and in three sub-equal longitudinal rows, graduating into the large prebasals regularly, in having ten or eight regular marginal anal plates, the median pairs not abruptly larger, and in not having a series of black spots on the sides. The teeth are from the nostril posteriorly 9 canine like, and seven or eight obtuse molars, two or three posterior usually with a lateral cusp. Two median plates in front of the anals. Gular scales in a transverse band of about nine rows, larger; relatively larger also than in *A. plei*, also the latter has several rows of scales between the labials and infralabials; the *A. analifera* but one row.

Greenish yellow below, brownish olive above, with blackish cross-shades on the nape in St. Martin's specimens. Sides, groin and tail above white spotted; some white spots in rows across the rump.

	In.	Lin.
Total length (two inches of tail reproduced).....	13	
End muzzle to vent.....	4	6
Hind limb.....	3	1.5
Foot.....	1	6
Fore limb.....	1	8
Head including membr. tympani.....	1	1.5

Several specimens in Museum Academy from the island of St. Martins, West Indies, presented by Dr. R. E. Van Rijgersma, correspondent of the Academy at that place; also one specimen from the adjacent island of St. Bartholomews, from Dr. A. H. Goës of that island. The following species were included in the collection of Dr. Rijgersma.

IGUANA NUDICOLLIS, Cuv. This species occurs also in the Swan Islands off the coast of Honduras; Museum Columbia College, New York.

ANOLIS GINGIVINUS, Cope, P. A. N. S., Philadelphia, 1864, 170.

AMIVA ANALIFERA, Cope, supra.

MABUIA AENEA, Lacep.

ALOPHIS RIJGERSMAEI, Cope, supra.

HYLODES MARTINICENSIS, Dum. Bibr.

SCELOPORUS SINIFERUS, Cope.

Twenty-four transverse series of scales between interscapular region and rump. Seven longitudinal series at the latter point, ten at the former. Lateral scales large, nearly equalling the ventral, which are considerably smaller than the dorsal. All well keeled and mucronate, except the ventral, which are smooth and without mucro or emargination, except a few spinous series in front of the vent. Gular scales entire. Palms and soles strongly keeled; tail slender, its scales strongly keeled like those of the back. Male with three, female with six femoral pores. No granular space in front of shoulder, and no longitudinal folds in the same region, but a short vertical fold in which the skin is so deeply inverted as to

form a deep pocket extending more than half way to the tympanum, and with some subdividing folds. No auricular scales different from the temporal; all strongly keeled.

Two pairs of supranasals, two pairs frontonasals separated by a small internasal. Frontal divided transversely and longitudinally; frontoparietals small. Parietals small, transversely divided; interparietal large, broader than long. Supraorbitals four on each side, preceded by three scales, and bounded inwardly and outwardly by much smaller scales. None striate; those on muzzle weakly one keeled.

	In.	Lin.
Total length.....	6	8.2
Length to vep.....	2	1.4
“ to axilla.....		10.2
“ to canthus oris.....		5.3
“ hind limb.....	1	8.4
“ “ foot.....		10.1
“ fore limb.....		10.6
Width head.....		4.8

This species is comparable to *S. oligoporus*, Cope, in the large scales and few femoral pores, but differs much in the division of the frontal plate, large interparietal and cervical pocket. It is considerably smaller and of different coloration.

Numerous specimens in Smithsonian collections from Francis Sumichrast, from the Pacific side of the Isthmus Tehuantepec.

LIYLA RUGULOSA, Cope, *sp. nov.* Cystignathidarum.

Prefrontal bones in close union with each other and the fronto-parietals. Vomerine teeth present; auditory apparatus well developed. Manubrium cartilaginous, xiphisternum emarginate. Toes webbed; dilata-tions well developed, supported by T-shaped phalanges. Abdomen nearly smooth.

This genus is very near to *Hylodes*,* differing almost entirely in the webbed toes. Keferstein, who has just described this genus (*Archiv. f. Naturgesch.*, 1868, 926), in consequence of his adhesion to the system of Günther, has attained to a very confused idea of its affinities.

Character Specificus.—Head broad, body short; heel extends to end of muzzle. Vomerine teeth in two approximated fasciculi, much behind the posterior line of the nares. Choanae half the size of the ostia pharyngea. Tongue oval, one-fourth free, openly emarginate behind. Tympanum nearly as large as orbit. Skin thin, with sundry rugosities on the sides of the dorsal region. Muzzle acuminate, not projecting; nostrils nearly terminal. Canthus rostralis well marked, lores slightly concave; front a little convex. Tarsal fold slight, metatarsal tubercle one inner. Solar web to the middle of the first (proximal) phalange on the first and fifth digits; to the base of the same on the others. Third

* *Lithodytes rhodopsis*, Cope, *Pr. A. N. Sci., Phil.*, 1866, 323 is *Hylodes sallaei*, Gthr. *P. Z. S. Lond.*, 1868.

digit very elongate. Anterior toes free; lengths 2-4-1-3. A weak discoid abdominal dermal fold. Abdomen very obscurely areolate, medially nearly smooth.

Color blackish-brown above, sometimes with pale vertebral streak. Femora not marked behind; above with three oval brown areas enclosed by light lines. A black band between orbits. A dark band from orbit to nostril, and thence to lip; two similar bands from orbit to lip. Below unspotted white, except gular region, which is brown.

Length head and body.....	0m.	.037
“ “ to posterior line tympanum.....		.014
Width “ at canthus oris.....		.0145
Orbit to end muzzle.....		.0049
Length fore limb.....		.0215
“ “ foot.....		.0105
“ hind foot minus tarsus.....		.0185
“ “ limb.....		.064

Habitat. Two specimens of this new form were sent to the Smithsonian Institution by Dr. Francis Sumichrast from the Pacific region of the isthmus of Tehuantepec, Mexico.

The collection sent from this locality embraced the following thirty-six species.

CROCODILIA.

CROCODILUS AMERICANUS, Seba; various large specimens, which display the most remarkable variations in the number and position of the osseous scuta. They exhibit from two to four nuchal scuta, and from two to five cervical. In several specimens scuta of the external dorsal series meet on the median line, excluding the inner pair entirely.

TESTUDINATA.

CHELOPUS RUBIDUS, Cope *Supra*.

LACERTILIA.

HELODERMA HORRIDUM, Wiegmann.

CNEMIDOPHORUS, sp.

UTA BICARINATA, *Phymatolepis bicarnatus* Duméril.

SCELOPORUS SINIFERUS, Cope.

SCELOPORUS VARIABILIS, Wiegmann.

CYCLURA (*Ctenosaura*) *QUINQUECARINATA*, *Enyaliosaurus quin.* Gray. Catalogue of Sauria in Brit. Mus. This region is the undoubted home of this hitherto rare species, as Sumichrast finds it in abundance. Gray was unable to assign its habitat.

CYCLURA (*Ctenosaura*) *ACANTHURA*, Wiegmann.

IGUANA RHINOLOPIA, Saur. Probably only a variety of *I. tuberculata*.

OLIGOSOMA GEMMINGERI, Cope.

PHYLLODACTYTUS TUBERCULATUS, Wiegmann.

OPHIDIA.

STENOSTOMA.

OGMIUS VARIANS. *Oxyrhina varians* Jan. This genus is strongly glyphodont like *Stenorhina*. Prof. Jan considered it isodont. His name *Oxyrhina* has been used variously before, on which account I propose the name above given. For a synopsis of genera allied to *Ogmios*. See Silliman's Journ. Sci. Arts, 1864, 457.

STENORHINA VENTRALIS, D. B. A form with series of dots on the scales, confirming the identity of the lined var. *freminvillei* with the species.

OPHIOLUS POLYZONUS, Cope.

CONIOPHANES PICEIVITTIS, Cope.

CONOPHIS VITATUS, Peters.

TOMODON NASUTUS, Cope.

OXYRHOPUS CLELIA, Linn.

LEPTODIRA MYSTACINA, Cope.

LEPTODIRA ANNULATA, Linn.

TRIMORPHODON BISCUTATUS, D. B. (*Dipsas*).

TRIMORPHODON TAU, Cope, *supra*.

SYMPHIMUS LEUCOSTOMUS, Cope, *supra*.

MASTICOPHIS MARGARITIFERUS, Schl.

OXYBELIS ACUMINATUS, Wied.

ELAPS AGLAEOPUS, Cope.

ANCISTRODON BILINEATUS, Gthr.

BOTHRIECHIS BRACHYSTOMA, Cope.

BATRACHIA.

LIYLA RUGULOSA, Cope.

CYSTIGNATHUS MELANONOTUS, Hallow.

CYSTIGNATHUS GRACILIS, D. B. Not distinguishable from specimens in the Mus. Compar. Zoology from Uruguay, except in less depressed extremity of the muzzle. The same species from Vera Cruz.

SCYTOPIS ALLENII, Cope.

Fingers free and teeth in fasciculi between nares and otherwise generally as in *P. xsignatus*; but the muzzle is broadly rounded, there is a black band from eye to middle of sides, followed by numerous large black spots on yellow ground; femora not cross-barred above, with large light spots on black ground.

The black scapular bars of this species are broad, and are not angulated and converging as in *S. xsignatus*, but are parallel; two black bars on sacral region diverge towards the groin. There are several black spots in the axilla, and longitudinal black line on front and back of humerus and three on front and under side of humerus. Tibiae vermiculated on

under surface above with an incomplete outlining of cross bars. Teeth between nares. Proportions of limbs generally as in the common variety of *S. xsignatus*; head equal foot beyond tarsus less the last phalange and two-thirds the tibia; foot 1.5 head and body. Orbit equal muzzle to beyond nares; belly immaculate, throat smooth. Heel nearly to nares. Length head and body 15.25 lines.

Habitat. Para Brazil. One specimen, No. 473 Mus. Comp. Zoology, Cambridge, Mass. Pebas Equador, Prof. Orton. Named for my friend, Prof. Harrison Allen, of the Pennsylvania University.

HYLA PULCHRILINEATA, Cope.

Form that of *H. arborea*. Fingers free, toes webbed to the base of the penultimate phalange. Dilatations well developed. Vomerine teeth in a single transverse series opposite the posterior margin of the internal nares; the latter much larger than the ostia pharyngea. Tongue slightly free behind. Canthus rostralis distinct, lores concave. Eyes large, prominent; membrum tympani one-fourth their size. The skin is smooth above, and the areolae of the abdomen are unusually weakly developed. No dermal appendages to the limbs or body. The extended hind limb brings the heel to the front of the orbit.

	mm.
Length total axial.....	38.
“ to eye not axial.....	58.
“ to posterior margin tympanum.....	11.7
“ fore limb.....	22.8
“ hind limb.....	58.5
“ foot.....	24.5
“ tarsus.....	12.
Width at canthus oris.....	12.4

Ground color above pale ashy brown. A strong citron yellow band passes round the muzzle, below the tympanum, and along the side to the groin. On the side it is wider, slightly undulating, and bordered above and below with slate color, which forms a pale blotch below it on the groin. A narrow unmargined, bright citron yellow line extends from the end of the muzzle to the vent, medially; and a similar one passes above the canthus rostralis and orbits along a line equidistant between the vertebral and lateral lines, joining the latter at the groin. The femora are finely yellow above and behind, and a yellow longitudinal line marks the tibia on both the inner and outer sides. The pigment of the metatarsus does not extend on the outer digit.

This pretty and uniquely marked species was brought by William M. Gabb, member of the Academy and Chief of the Geological Survey of the Island of San Domingo, from the eastern part of that island. The thumb can be opposed to the fingers as in the species formerly referred to *Litoria*.* The sacral diapophyses are narrower than usual in the genus. The fronto-

*Two species were described by Dumeril, as *L. marmorata* and *L. punctata*, from Australia. On the union of these with *Hyla*, I changed their names to *H. thyposticta* and *H. dimolops* respectively (Journ. A. N. Sci., 1866, p. 35), as there were *Hylae* already described under those names.

parietal bones are more extensively ossified than in most species of *Hyla*, and constitute an approach to *Scytotis*,* Cope. The species is the first true *Hyla* discovered in the West Indian subregion.

The species brought by this naturalist from the same locality are :—

Dromicus parvifrons, Cope.

Uromacer catesbyi, D. B.

Amphisbaena innocens, Weinl.

Anolis semilineatus, Cope.

Anolis caelestinus, Cope.

Anolis distichus, Cope. *A. dominicensis* Lüt. is a variety of this species.)

Anolis cybotes, Cope. *A. rüsei* Reinh. and Lüt.

Trachycephalus marmoratus, D. B. var.

Hyla pulcherrilineata, Cope.

Lithodytes ricordii, Dum. Bibr.

It may be mentioned in this connection that a valuable catalogue of West Indian Reptiles and Batrachia was issued by Reinhardt and Lütken in 1863 in the *Naturalist. Foren. Vidensk. Meddel. Kjobenhavn*. A few *doubles emplois* occur in its pages, as follows. Their *Anolis trinitatis* I think is a variety of *A. alligator*, D. B. Numerous specimens are in Mus. Smithsonian. *Amphisbaena antillensis*, Rhdt. and Lüt. is *Diphalus fenestratus*, Cope. *Liophis Andreae*, R. & L., is the young of *Dromicus fugitivus*, Donnd. *Hylodes risei*, R. & L., is *Lithodytes lentus*, Cope, and *H. antillensis* is *H. auriculatus*, Cope. Though this paper of the Danish naturalists was read one month before that of the writer, in which these *Hylodes* were described, it was evidently published much later, as they quote in it a paper of the writer's, which was not issued till 1863.

Among West Indian Anoles it is to be added, that the *A. grahami* Gray is established on a young *A. iodurus*, and that *A. porcatus* is *A. principalis*; also that *A. stenodactylus* is not a valid species.

HYLA POLYTAENIA, Cope.

Hyla rubicundula, "Reinhdt. & Lüt." Günther P. Z. Soc. Lond., 1868, 489, Tab. X, fig. 3, nec. Reinh. et Lüt.

Fingers one-third palmate; toes only palmate to the extremity of the basal phalange of the longest toe. No dermal margins on body or limbs. Tongue entirely attached behind. Vomerine teeth in short transverse fasciculi entirely behind the line of the posterior margin of the inner nares. Choanae smaller than nares. Tympanum less than one-fourth eye. Skin above everywhere smooth. Digital dilations moderate; eye large; head wide; muzzle short; loreal region concave.

* Four species of this genus are enumerated in my genera of *Arcifera* (*Journ. Acad.* 1866) but were not named. They are *S. venulosus* (*Hyla* Daudin); *S. acuminata* (*Hyla* Cope); *S. allenii* Cope and *S. ruber* (*Hyla* Daudin).

	Inches.
Length from end muzzle to orbit.....	.20
“ “ “ behind tympanum.....	.40
“ “ “ veub (oxial).....	1.30
“ of fore limb.....	.90
“ of hind limb.....	2.00
“ of foot.....	.90
“ of harsus.....	.56
Diameter eye.....	.39
Width head behind.....	.41

The pigment of the upper surfaces extends to near the edge of the lip and in a band on humerus and femur, covering three outer fingers, an outer metatarsus and two outer toes. A grey-brown band extends along the border of the lip above the axilla to the groin; a second and wider extends from the nares through eye and tympanum to groin. In our specimen the reddish-cream color of the dorsal region is marked with indistinct dap; in a second, with nine longitudinal grey-brown lines, of which a vertebral, and one from above the lores and over each orbit to groin are band-like. In both, a similar band bounds the antebrachium, tibia and metatarsus, and the posterior margin of the pigment on the femur. In the lined specimen there are additional lines on the lips humerus and femur.

This species has the opposable thumb and slight palmation of some of the Hylae referred to Litoria. It is in general allied to *H. palliata*, but has the toes much less palmate, and the vomerine teeth more posterior.

This species is figured by Günther as the *H. rubicundula* of Rhdt. & Lütke as above. It is however not that species, which differs according to the original description in Danish, in first, having the vomerine teeth between the nares: second, in having the tongue half free; third, the palmation of the feet extends over one phalange more, and fourth, that of the fingers is better developed.

From Brazil; collected by G. Szeva, of the Thayer expedition to that country, under Prof. Agassiz. No. 906 Mus. Comparative Zoology, Cambridge.

STEREOCYCLOPS INCRASSATUS, Cope, sp. et. gen. nov. *Phryniscidarum*.

Char. gen. Of section I. of Phryniscidae with Hypopachus and Calophrinus. The prefrontals are fully developed and form a continuum with each other and with the fronto parietals. Tongue large. Membrum tympani thin, concealed. No dorsal or parotoid gland; no metatarsal shovel. Coccyx united by two condyles. Xiphisternum cartilaginous, much dilated and entirely in contact with the coracoids. Anterior portion of the sclerotica ossified, so as to form a hard annulus round the cornea. Pupil round. Toes free.

Char. Spec. The whole form is much depressed, and the physiognomy approaches Pipa. The cranial box partakes of this and presents a strong median longitudinal crest. Tongue large; equal inner nares. A short

frenum across the palate behind. The vomer is cartilaginous between the nares, except on axis. Gape large, the muzzle projecting slightly beyond it. No canthus rostralis, nostrils latero-superior. Limbs short, humerus and femur included in the skin. Toes very unequal, the inner and outer very short; related thus, 1-2-5-3-4. An obtuse tubercle at the base of the outer toe. The epidermis is everywhere thickened by a chitin-like deposit, which is readily cracked. It is thickest on the soles, the tarsi, and the gular region.

Color everywhere leather-brown; a narrow white line from end of muzzle to vent.

	MM.
Length of head and body.....	.057
“ “ hind limb from knee.....	.0495
“ “ tarsus.....	.009
“ “ remainder of foot.....	.0245
“ “ fore limb from elbow.....	.0100
Width between angles mandible.....	.020
“ “ orbits.....	.009
“ “ nostrils.....	.004

Found near Sao Matheos, south of Rio de Janeiro, by Messrs. Hartt and Copeland, of the Thayer Expedition to Brazil, Mus. Comparative Zoology, Cambridge, Mass., No. 855.

This is a remarkable type, with a certain resemblance to *Engystoma*. It is the first type among the *Raniformia* which betrays even a remote resemblance to *Pipa*.

HYPOPACHUS INGUINALIS, Cope, *sp. nov.*

This species is of about the same size as the *H. variolosus* Cope, and like it has the toes partially webbed at the base. It differs by many marked characters throughout.

Muzzle rounded conic, projecting beyond lip; nostrils superolateral. Width of head behind orbits, double length to opposite the same point. A groove from orbit to humerus. Diameter of former equal length of muzzle from the same. Mandible with symphyseal knob little marked; gular slits large; tongue flat, ovate, largely free and thin behind, without free border in front. Nares large, double the small ostia pharyngea. Two metacarpal tubercles close together; fingers slender, with subarticular knobs. The metatarsal tubercles with cutting edges in nearly the same line without blackening of the sheath, the inner the longer. No tarsal fold. Skin everywhere smooth, except some minute papillae on the sacro-coccygeal region.

Coloration. Above a pinkish leaden, with a more or less indistinct narrow vertebral line from the end of the muzzle. A large and a small black spot on the groin and one on the knee. A large black spot on the scapula; a pair of blackish lines which converge from the orbits to the inter-scapular region, then diverge and form an imperfect circle on the middle of the back. Sides of head blackish; a yellow bar from orbit to humerus. A black bar across closed femur and tibia above. The femur

is a strong pink, and is sometimes spotted behind and sometimes not. Belly with delicate reticulate brown lines on yellow ground, sometimes obsolete. Total length, 04'' 4''' ; do. to orbit behind, 8''' . Fore limb, 02'' 2''' ; hand, 01'' . Hind limb, 04'' 1''' ; harsus, 9''' . Entire foot, 02'' 03''' .5.

Habitat. Vera Paz, near the ruins of Coban. Sent to the Smithsonian Institution by Henry Hague. This gentleman has made highly interesting observations on and contributions to the Natural History of that once populous, but now almost unknown region, which have been communicated to the Smithsonian Institution.

The known species of this genus is *Hypopachus variolosus* Cope (*H. seebachii* Keferstei n Göttingen, Nachrichten, 1867, 352. Archiv. f. Naturgesch., 1868, 293, tab. IX., f. 1, 2. *Engystoma variolosum* Cope. Proceed. Acad. Nat. Sci., Phila., 1866. *Systema* do. Journ. A. N. Sci., 1867, 194,) which is found in Costa Rica. Keferstei n well separates this species from *Systema* on account of its clavculus, though it is not certain that it is not *Copea* Steindachner. In an essay on Costa Rican Batrachia this author enumerates eight species. Of these it may be remarked that *Bufo sternosignatus* Günther has been described by an older author under a prior name. *Oedipina uniformis* Kef. is an interesting Plethodont salamander, apparently the same as the *Opheobatrachus vermicularis* of Gray. No generic characters are given which are not possessed by species of *Oedipus*. I may mention here that I have hitherto regarded the latter genus as identical with *Geotriton*, and no author has presented characters by which to distinguish them. I find, however, that the European genus possesses two premaxillaries, the American one ; on this ground they may be separated. In the same way *Spelerpes porphyriticus* (vel *salmoneus*) has two premaxillaries, and all the *Spelerpes* proper but one. I therefore refer the first to a new genus under the name of *Gyrinophilus*.

RANULA AFFINIS, Peters, Cope.

This species is extensively distributed. We have it from Pebas, Ecuador, Coban Guatemala, and the Rio Verde, Tehuantepec, Mexico. Günther, after examination of this frog, says (Zoological Record, 1868,) that it is "Hyloid," an expression we fail to comprehend, as he certainly cannot mean that it bears any relationship to *Hyla*.

The digital relations, if such they can be called, are not larger than in the *Rana sylvatica*, which has just passed its metamorphoses. It is in fact most closely allied to the group of *Rana* to which *R. temporaria* belongs, as already perceived by Peters, who calls it *affinis* on this account. Like it, it possesses a dorso-lateral dermal fold, as is common in *Hylorana*.

Steindachner proposes to united *Hylorana* and *Polypedates*. On this Günther remarks that this herpetologist could not have devoted much study to them, as they differ in the presence and absence of this dorso-lateral dermal fold respectively. Günther's criticism, however, like most of those which he too frequently directs at the labors of his fellow-students, is really applicable to himself.

So far as the "Catalogue of Batrachia Salientia in the British Museum" is concerned, no characters to distinguish them can be found. But I pointed out, some years ago, that the difference consisted mainly in the structures of the distal phalanges characteristic of each : also that *Hylorana* is much nearer to *Rana*, and is only to be distinguished from it generically, without the interposition of any possible form which would not unite them. The T-shaped phalange in some *Hyloranae* is so weak, while the expansion of the tip of the same in *Rana temporaria* and others, is so distinct, as to render the permanent distinction of the two genera a mere matter of future discovery.

LIMNOMEDUSA MACROGLOSSA, D. B.

Having had an opportunity of examining the sternum of this species for the first time, I find that it possesses the styloid xiphisternum which I have indicated as characteristic of the typical group *Cystignathi* of the family *Cystignathidae*, and it must therefore be referred to the neighborhood of *Cystignathus*. Besides other points, *Limnomedusa*, Cope, is distinguished from *Cystignathus* by the vertical pupil.

Kefenstein states that I erroneously ascribe an osseous stylus of the xiphisternum to the genus *Borborocaetes* Bell. The facts are as follows : This genus was distributed by Günther in the Catal. Bat. Sal. Brit. Mus. in two widely different groups, *Cystignathus*, and one he called *Limnodynastes*. I first pointed out* that this series of species differed radically from *Cystignathus* and its allies, in the *scutiform cartilaginous* xiphisternum, and also in the large cranial frontanelle.

Up to that time the Australian species called *Limnodynastes* had never been received other than specific characters, as that by which it was stated by Günther to differ from *Cystignathus*, viz., the transverse extension of the series of vomerine teeth, is one included in the range of many well-known genera, as *Rana*, *Lithodytes*, and *Cystignathus* itself. The South American species named by Bell long previously, *Borborocaetes*, differ only from those of Australia in the shortening of these series, and not more than *Cystignathus taeniatus* does from *C. albilabris*.

GOMPHOBATES BILIGONIGERUS, Cope.

Gomphobates notatus, Reinhd. and Lütken, Vid. Medd. Copenhagen, 1861, 33 Tab. IV, f. 3. *Liuperus biligonigerus*, Cope, Proc. Ac. N. Sci., Phila., 1860, 517. Uruguay.

EUSOPHUS NEBULOSUS Cope, *Cystignathus nebulosus* Girard. It is probable that the *Cystignathid* described by Günther, P. Z. S., Lond., 1868, 482, as *Cacotus maculatus*, is a variety of this species. It agrees in all respects except in having a black suborbital spot, and line on the canthus rostralis, which Girard's types do not exhibit. Günther places it among his *Bombinatorina*. It is scarcely necessary to observe that it has not the least affinity to *Bombinator*.

* Nat. Hist., Review 1865.

APPENDIX.

ZONURUS TROPIDOSTERNUM, *Cope, sp. nov.*

Char. Scales $\frac{1\frac{3}{4}}{4}=16$, lateral ventral, pectoral and gular keeled, the dorsal keeled and very rugose. Caudal scales trihedral spine-like. Internasal reaching rostral. Dark-brown, yellow below.

Descr. This species belongs to the typical group and is near the *Z. griseus* of the Cape, but differs in many characters. The rostral is in contact with the internasal, which is much longer than wide, and of course separates entirely the supranasals. It is well separated from the frontal by the frontonasals. The other head plates are similar, except that there are six rows of temporals, the longest seven deep; those of the *Z. griseus* are much larger, including the two marginal auriculars, which are rudimental in the new species. All the plates of the head are excessively rugose, with longitudinal striae. Upper labials six, the fifth not more elevated than the others; inferiors, six; infra-labials, five; all in contact, and without larger scales within them. Gular scales in 22 series from angles of mandible; those of the neck abruptly larger, mucronate, forming a rudimental collar. Median ventrals nearly smooth, laterals mucronate keeled. No lateral fold; lateral scales increasing regularly in size from the ventrals, sub-round, widely separated from each other by minutely granular intervals, strongly mucronate keeled. Dorsal scales in 24 series from nape to opposite femur, all strongly mucronate keeled, and rugose; the median series like the others. Caudal whorls very spinous, the scales not serrate, but striate on the surface. Femoral pores, seven on each side; preanal plates small, equal, except two marginal a little longer.

Muzzle to vent	0 m 09'' 2'''	Width head...	0 m .02''
" " ear.....	04'' 4'''	Hind limb.....	" 04'' .2''
Fore limb.....	3'' 2'''	" foot.....	" 02''

Color. Below and upper lip to ear, yellow; above rich brown, with several indistinct blackish cross-shades, head above, wood brown.

Habitat. Madagascar, Mus. Essex Institute, No. 500.

EXPLANATION OF PLATES.

PLATE IX.

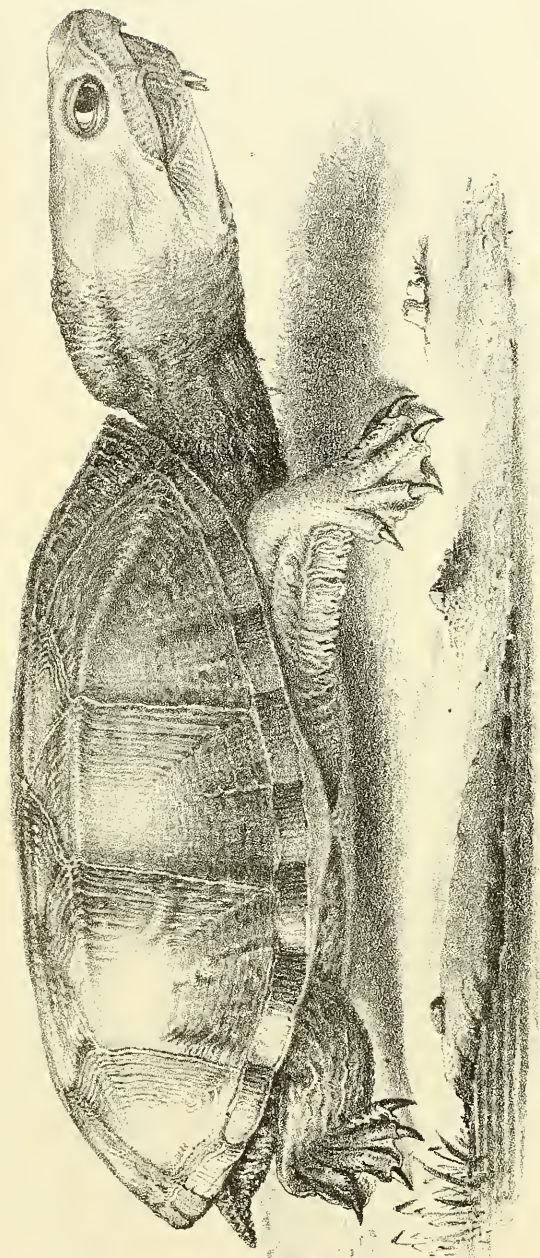
Claudius angustatus, Cope. Yucatan, Mus. Smithsonian, Proc. A. N. Sci., Phila., 1865. This plate with the others presented to the author by Joseph Jeanes.

PLATE X.

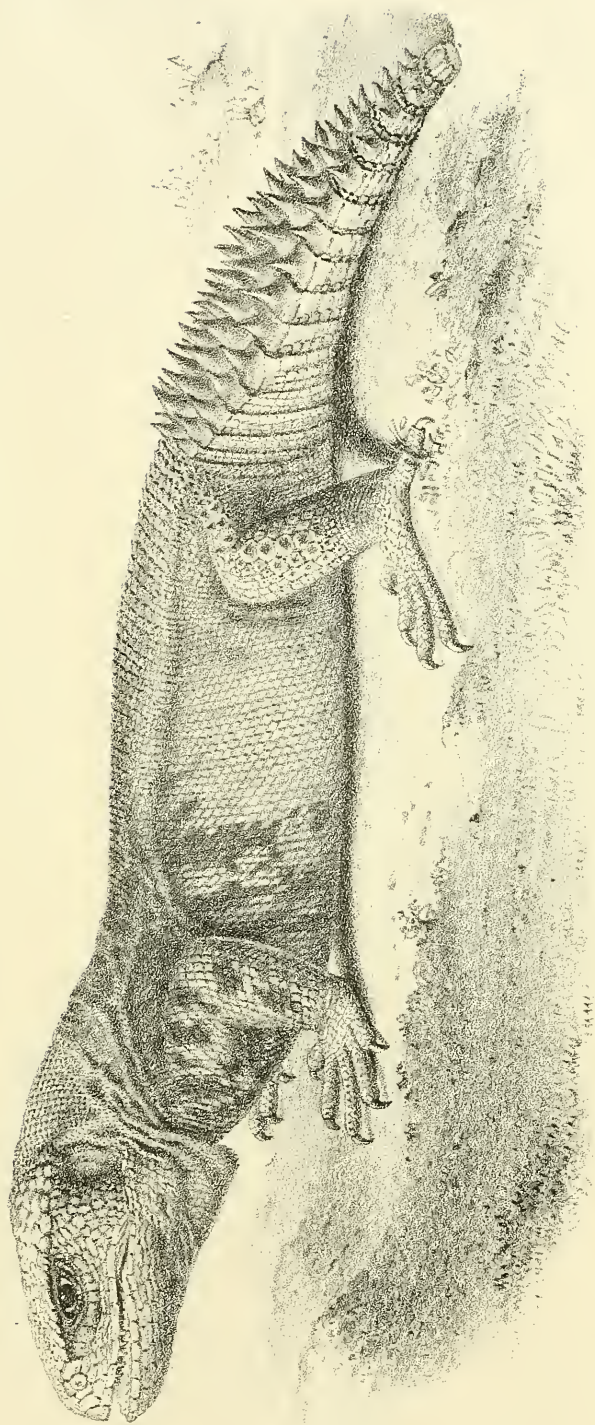
Cachryx defensor, Cope, Proc. A. N. S., Phila., 1866, 124. Yucatan, Mus. Smithsonian. ✓

PLATE XI.

Laemanctus alticoronatus, Cope l. c. 124. Mus. Smithsonian, Yucatan.



Claudius angustatus Cope.



Crotaphytus defensor Cope.



Taenanchus allicoronatus Cope.

