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On Some New and Little Known American Anura

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torals and ventrals are nearly equal and almost as long as the head. The ventrals are inserted nearly as far back as the vertical of the third dorsal spine. The entire caudal equals the length of the head; the median rays equal about two-thirds of the longest.

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The color is light green or purplish; five rather narrow vertical bands cross the body; the *first* commences under or close before the front of the dorsal; the *second*, under the space between the third and fifth spine; the *third*, between the seventh and ninth; the *fourth*, under the thirteenth spine, and the *fifth* is close behind the dorsal and anal. The fins are immaculate, the external portions of the ventrals darker.

This species is apparently very common at Cape St. Lucas, Mr. Xantus having sent to the Smithsonian Institution about one hundred specimens, most of which are, however, very young; the largest are three or four inches long.

I dedicate the species to Dr. Troschel, who, by his annual reports on herpetology, ichthyology and malacology, as well as by the original memoirs published by him alone and in conjunction with the great J. Müller, has much contributed to the advancement of those departments of science.

On some new and little known American ANURA.

BY E. D. COPE.

Hylodes dimidiatus.

Form ranine. Head not broader than body, muzzle rather acute, depressed at the tip. Nostrils lateral. Eye of moderate size, twice the extent of the round tympanic membrane. Internal nares small, less than ostia pharyngea; vomerine teeth posterior to them, in two rather abruptly curved series; their inner extremities directed backwards, widely separated, their outer reaching the maxillary margin. Tongue oval, without posterior notch. Skin smooth above and below, except upon the posterior femoral region. A narrow dermal fold from the superciliary region nearly to the groin. Posterior lateral region rugulose. Digital pallettes well developed: no rudimentary membrane between posterior digits. Two metatarsal tubercles, that at the base of the least digit elongate; sole smooth. Palm tuberculous, two metacarpal warts, no tarsal dermal fold. Humerus three-fourths the length of tarsus, which is half as long as the tibia, which is longer than the femur. Length of head and body 1 in. 9 l. Antebrachium $4\frac{1}{2}$ l. Tarsus and longest digit 1 in. 3 l. Hinder extremity, from groin, 2 in. 9 l.

Above brownish or pinkish gray, beneath yellowish. A black band passes from the end of the muzzle across the tympanic disc, beneath the lateral dermal fold, to about the middle of the side. A yellowish line on superior labial margin, indistinct anteriorly. A black, white-bordered spot on the crural region, sometimes one on each side of the end of the coccyx. Inner faces of extremities marbled; superior surfaces cross-banded. A very narrow white line extends from the end of the muzzle to the terminal coccygeal region. Some white spots on the posterior femoral surface.

Habitat.—Eastern Cuba. Mus. Smithsonian (No. 5099) Mr. Wright Coll. Mus. Acad. Philada.

This species exhibits much resemblance to Dr. Günther's *Cystignathus albilabris* in external form.

Hylodes lentus.

Form stout, depressed; posterior extremities short. Head not so wide as 1861.]

the body; muzzle prominent, rounded. Tympanic disc round, half the size of the eye. Nostrils lateral. Internal nares large, equal to ostia of eustachian tubes. Behind these are placed the two curved series of vomerine teeth, which extend nearly from the maxillary wall; their inner extremities are directed backwards, and are separated by a slight interval. Tongue elongate oval, entire. Without granulations above, below, or upon the sides. Pallettes moderately developed. Palms tuberculous; three warts in the posterior series, of which the median is much the largest. Soles with small tubercles, two small posterior metatarsals, the inner elongate, acute. Heel reaching orbit, when directed forward. Length of head and body 1 in. 6 l. Hinder extremity 1 in. 11 l. Tarsus, to end of digit, 1 in. 1 l. Antebrachium $4\frac{1}{2}$ l.

Beneath whitish, immaculate. Above dark chestnut, a light band on each side from posterior margin of the orbit to crural region; between these, on the vertex, the sides and extremities, the ground is coarsely marbled with whitish or yellowish.

Habitat.—St. Thomas. Mus. Smithsonian. Rüse Coll.

This species differs from its near ally, the *martinicensis*, in the greater length of the series of vomerine teeth and in coloration. The posterior extremities are much shorter than in the *dimidiatus*.

Hylodes auriculatus.

Size small: head as wide as, or wider than, the body. Muzzle rounded. Nostrils lateral. Tympanic disc circular, one-fourth the size of the eye. Tongue elongate, obcordate, with a small emargination. Vomerine teeth in two oblique series, which commence opposite the inner margin of the posterior nares, and converge posteriorly, though the extremities are widely removed. Above sparsely rugose; belly and femora beneath, granulate. Digital pallettes well developed. Anterior extremity reaching to groin. Heel nearly to end of the muzzle. Total length 10 l. Hinder extremity 1 in. 3 l.

Above light gray, loreal region black; a black line descends from orbit to near the shoulder, which crosses the upper part of the tympanum. A blackish band between the eyes, a chevron-shaped one between the scapulæ. Hinder extremities dark, shaded on their posterior faces. Beneath yellowish, mental and lower labial region varied with brown.

Habitat.—Eastern Cuba. Mus. Smithsonian, (No. 5207.) Philadelphia Academy.

This species is allied to *H. martinicensis*, but has a broader head, longer extremities, and rougher skin: it is also much smaller.

Hylodes cuneatus.

Hyliform: head large, broader than the body. Muzzle elongate, acute. Tympanic disc round, half the size of the eye. Internal nares smaller than eustachian ostia; the latter are transverse. Vomerine teeth in two curved series, which begin opposite, and much behind the external border of the internal nares, and converge posteriorly, leaving an interval. Tongue elongate oval, rounded posteriorly, slightly nicked. Skin of the superior surfaces, except that of the muzzle, granulated; beneath everywhere smooth. A slight dermal fold extends from the end of the muzzle to the end of the coccyx, and another, very delicate, commences behind each orbit, and descends upon the side, then ascends towards the iliac region. Palm tubercular, two large metacarpal tubercles. Sole smooth, two metatarsal warts, the external not prominent. Heel extending nearly to extremity of muzzle. Length of head and body 1 in. 7 l. Hinder extremity 2 in. 6 l. Width of posterior gular region 7 l.

Above blackish gray. Muzzle lighter as far as the abrupt commencement of the darker between the eyes. A light line, from anterior border of orbit to labial commissure, and one from the posterior border to the tympanum. A light band from each supercilium to the coccygeal region. Extremities indistinctly

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banded with brown. Beneath whitish, very minutely punctulaerd with brown, except upon the abdomen. *Var.*, almost entirely black: the head a little narrower.

Habitat.—Eastern Cuba. Mus. Smithsonian, (No. 5202, *var.* 5202½.)

Hylodes planirostris.

Head as wide as, or wider, than the body, longer than broad; the lateral outlines curved; the end of the muzzle abruptly truncated. Ostia pharyngea oval. Vomerine teeth in two long curved series, which commence behind and opposite to the external border of inner nares; they are separated by a considerable space medially. Tongue elongate, oval, slightly nicked. A subgular vocal sack. Tympanum half the size of the eye. Skin smooth above and below; sides rugose. Heel reaching the orbit. Digital pallettes small. Two metacarpal, two metatarsal tubercles. Brachium longer than or equal to ante-brachium. Length of head and body 11 l. Muzzle, to canthus oris, 4 l. Hinder extremity 1 in. 9 l.

General color reddish brown. The loreal region, a band between the eyes, one above the tympanum, and some dorsal spots, darker. Beneath light brownish.

Habitat.—New Providence Island, Bahamas. Mus. Salem. From Frederick Putnam, Esq.

Hylodes hallowellii.

Head and body rather elongate. Muzzle thick, prominent. Canthus rostralis obsolete. Tympanic disc half the size of the eye. Vomerine teeth much behind the internal nares, in two short, transverse, slightly curved series. Tongue thick, elongate, oval, entire. Ostia pharyngea round, a little larger than internal nares. Skin of the under surfaces smooth; sides rugulose, with a few tubercles; a few rugosities on the posterior dorsal region, and some folds upon its borders. A strong fold from the orbit above and behind the tympanum. Numerous delicate folds upon the anterior face of the femur; a posterior tarsal fold. Palm smooth, a large median metacarpal tubercle, and a very prominent elongate one on the base of the inner digit. A rudimentary web between all the toes of the hinder extremity; the metacarpal tubercles two, small, the internal narrow. Femora very stout. Heel extending to the orbit. Length of head and body 1 in. 6 l. Width of head at canthus oris 6 l. Length of hinder extremity 2 in. 3 l.

Above grayish brown, with a reddish tinge. A light band between the eyes, from which one descends on the end of the muzzle to the labial border. A light line from the nostril to the labial border, two from the anterior border of the orbit, and one from the posterior. A dark shade upon the occiput. Chin, thorax, sides and inner borders of extremities marbled with brown. Two brown bands on the tibia; one broad and several narrow bands on the femur.

Habitat.—Near Carthagen, New Granada. Mus. Smithsonian, (No. 4343.) From Lieut. Michler's Expedition.

A near ally of *H. fitzingerii* Schmidt, with which it ought, perhaps, to be removed from this genus.

It is dedicated to the memory of the late Dr. Edward Hallowell, whom the author holds in grateful and respectful recollection.

The genus *Hylodes*, as understood by Duméril, embraces twenty-three species, including those here described. They naturally associate themselves round several types, forming the following groups. 1. *Craugastor Cope*. Toes very slightly webbed. Vomerine teeth in two short, transverse series behind the internal nares. Skin of the abdomen smooth. *H. hallowellii* and *fitzingerii*. 2. *Hylodes Fitz.* Toes entirely free. Vomerine teeth in two short, oblique series behind the internal nares. Skin of the belly (typically, granular. *H. martinicensis*, *auriculatus*, *?conspicillatus*) *?parvus* (belly smooth.) 3. *Lithodytes Fitz.* Toes free. Vomerine teeth in 1862.]

two, often elongate, curved series behind the posterior nares. Skin of abdomen smooth. *H. lineatus*, *lentus*, *cuneatus*, *luteolus*, *planirostris*, *dimidiatus*. This group connects with *Hylodes* proper through *H. cuneatus*. 4. *Euhya* *Fitz.* Toes free. Vomerine teeth in two elongate, angularly curved series, which are medially directed posteriorly and in contact, forming a zigzag line behind the anterior nares. Abdomen smooth or granular. *H. ricordi*, *oxyrhynchus*. The dentition of this group is nearly approached by that of *H. (Lithodytes) lentus*. 5. *Batrachyla* *Bell.* Toes free. Vomerine teeth in two straight oblique groups between the posterior nares. Abdomen smooth: *a.* Tympanum round. *Batrachyla*. *H. leptopus*, *longipes*. *b.* Tympanum vertically elliptic. *Halophila* *Gird.* *H. heros*, *chryseus*,* *dorsalis*, *vitianus*, *corrugatus*.

Hylodes laticeps is perhaps the type of a distinct genus. *Rana capito* *Leconte* bears some resemblance to it.

Phyllobates limbatus.

Size very small; form ranine. Head not wider than the body. Muzzle rather acute. Skin smooth below, slightly granular upon the lateral, gluteal and occipital regions. Tympanic disc two-thirds the size of the orbit. Nostril lateral, its position one-third the distance from the muzzle to the orbit. Internal nares much smaller than ostia pharyngea. Tongue elongate, subcylindrical, entire. Palms and soles granular; outer metatarsal tubercle very small. A delicate dermal fold on the median line of the back. Heel scarcely reaching the orbit. Length of head and body $5\frac{1}{2}$ l. Hinder extremity 8 l.

Above, chestnut. A white line extends from the end of the muzzle to the knee joint; beneath this a broad, black band extends to the same position. Upper surfaces of posterior extremities and anal region blackish brown. Under surfaces and anterior extremities yellowish, the hinder limbs and sides of abdomen spotted with brown. A dark line on humerus. Upper lip yellow.

Habitat.—Eastern Cuba. Mus. Smithsonian, (No. 5206.) Mr. Chas. Wright's Coll. Acad. Philada.

This is, perhaps, the smallest frog known, and is a very prettily marked one. Suspicions of immaturity have been removed by careful examination of the six specimens at our disposal.

Hyla andersonii *Baird*, Proc. Acad. Nat. Sci. Phila., 1854, p. 61.

In proportions and general appearance similar to the *Hyla arborea* of Europe. The skin of the upper surface of the body and extremities is smooth, minutely corrugated; that of the throat, belly, and under surfaces of the femora, is areolated. A cutaneous fold across the breast, and one across the throat. Tympanum about one-third the size of the eye. Tongue broad, slightly emarginate. Vomerine teeth in two oblique series between the internal nares, each directed inward and backward.

Coloration in life. The whole upper surface a rather deep pea green, paler upon the sides and the margin of the upper lip. A narrow band of purplish brown commences at the external nares, passes through the eye and including the tympanum, loses its inferior border a little beyond the insertion of the humerus. The color becomes paler upon the sides, where it is of an ashy mulberry tint, and extends as far as the origin of the femur. Anterior to this point it is margined below by large irregular spots of a beautiful saffron, which are continued upon the anterior and posterior surfaces of the femur, and the whole inferior surface of the tibia, upon a ground of a paler shade of the same color. The supero-anterior surface of the tarsus, the three inner toes and the webs of the external,—also a small area behind the humerus, the posterior surface of the latter, the infero-anterior face of the fore-arm and the inner

**Halophila vitiensis* *Gir.*, Proc. Acad. Nat. Sci. Phila. 1853, Oct. nec. *H. vitianus* *Dum.*, Ann. Sci. Nat. 1853, June, 1853.

finger, are tinted and spotted in the same manner. The superior surfaces of the femur, tibia, humerus and fore-arm, are of the same color as the back, that of the humerus separated from the green of the jaws by an isthmus of the purplish shade, and that of the tibia separated anteriorly from the saffron of its lower surface by a band of mulberry. The green of the back and extremities is everywhere margined with pure white, except posteriorly on the femur and tibia, and anteriorly on the former, where saffron takes its place. The green crosses the rictus and forms an oval spot upon each side of the throat. The borders of the latter and the chin are tinged with mulberry. Beneath whitish flesh color. The exposed surfaces of the anterior and posterior extremities, where not green, are of a shade intermediate between mulberry and chocolate.

Length of head and body 1 in. 8 l. Femur 8 l. Tibia 9 l. Tarsus and foot, to the end of the longest toe, $12\frac{1}{2}$ l.

The following are the differences which I discover upon a comparison of this species with many specimens of the *Hyla arborea* of Europe. The head is relatively broader and more obtuse. The vomerine teeth are in two oblique lines, not in symmetrical fasciculi. In coloration we notice, first, the *arborea* is entirely destitute of the saffron spots and shades so distinct in the *andersonii*. Second, the carpus and tarsus of the latter are destitute of any green shade or band so usual in the *arborea*. Third, the green is bordered with white, not yellow, and the green of the extremities is much more distinctly bordered than in the *arborea*. Fourth, the lateral band, and that on the anterior face of the tibia, is of an impure mulberry shade, instead of brown or greenish.

I am indebted to Dr. Jos. Leidy for a beautiful specimen of this frog. It was found in a cedar swamp, near the town of Jackson, in New Jersey, sixteen miles east of Philadelphia. Without careful examination of the specimen, he supposed it to be the *viridis* of the Southern States, from its great resemblance to that species, and presented it as such, at the meeting of the Academy the same evening. (Vid. Proc. Acad. for July, p. 305.) At the same time Baltimore was given as its northern limit upon the authority of Dr. Uhler of that place. As Dr. Holbrook gives lat. 33° as the most northern habitat known to him, it would be interesting to receive specimens from Baltimore, as there is a possibility of the supposed *viridis* being the *andersonii*.

Lysapsus limellum.*

Char. gen.—Family Hylidæ of Günther. Anterior extremities free. Interior digit opposite the three external. Proximal phalanx of external, posterior digit entirely free from that of the second; all the digits broadly palmate. Pallettes slightly developed. Vomerine teeth in two fasciculi. Tongue broad, slightly free, nearly entire. Skin rugose above, not smooth below.

This genus is related to *Litoria*, but differs from it, and from most, if not all, other genera of *Opisthoglossa platydactyla*, in the freedom of the basal phalanx of the external digit.

Char. specif.—Head as wide as the body. Muzzle acute, with rounded outlines. Canthus rostralis none. Nostrils vertical. Tympanic disc half the size of the eye. Internal nares smaller than ostia pharyngea tubarum eustachii. Vomerine teeth in two well-separated fasciculi, near to and behind the nares. Tongue very broad, subtriangular, obtusely emarginate and slightly free posteriorly. Inferior surface of limbs smooth, of body areolate or transversely plicate, except on the middle of the thorax. Upper surfaces as far as interior orbital region, minutely and firmly rugose, resembling shagreen. Palms not tubercular; basal phalanges thickened. Hinder extremities very long, knee reaching nearly to tympanum. Palm smooth, a small acute cuneiform tubercle at the base of the internal digit. External digit longer than the third.

**Lima*, a file, shagreen.

Palmation extending to the pallettes. No dermal folds, except on the posterior face of tarsus. Humerus shorter than antebrachium; tarsus less than half the length of tibia. Length of head and body 9 l. Hinder extremities 16 l.

Above dark reddish brown, a dark spot on the occiput. Two narrow yellowish lines on each side, one from the orbit, one from the tympanum. A light line from the orbit to the angle of the mouth. Two broad oblique bands across the femur, three from the tibia. A brown band extends from one popliteal region to the other, without interruption, on the (?) perinæum. Beneath pale rusty; small brown spots on lower labial region.

Habitat.—Paraguay. Taken on river. Mus. Smithsonian, (No. 5494.)

This species has probably the habits of *Rana*. It evidently possesses great power in the hinder extremities. The formation of these, and of the anterior members, remind us of *Pseudis*.

Cystignathus podicipinus.

Tympanum distinct, half the size of the eye. Posterior digits with margins as wide as a phalanx, which unite at their bases, forming a slight web. A tarsal fold continuous with that of the internal digit, except where interrupted by a spur-like tubercle. Tarsus half as long as tibiae. Anterior digits free; first digit longer than the second and fourth; an elongate tubercle at its base; an oval median palmar tubercle; inferior articular tubercles moderate. Head narrow. Muzzle rounded, a little prominent. Tongue oval, submarginate. Vomerine teeth in two short, separate rows, much behind, and within the marginal line of the posterior nares. Skin smooth above, except a few minute warts on the coccygeal region. Lateral and postanal region verrucose. Total length of head and body 21 l. Anterior extremity 10 l. Posterior extremity 2 in. 3 l. Foot and tarsus 14 l.

Above brown, an elongate, darker triangular spot between the eyes. A yellowish line extends beneath the eye to the angle of the mouth. Femora indistinctly banded, posteriorly marbled with blackish. Tibiae with three brown bands. Beneath yellowish brown, with numerous yellow spots.

Habitat.—Paraguay. Mus. Smithsonian, (No. 5831.) Philada. Acad.

This species differs from the other *Cystignathi*, with margined toes and vomerine teeth behind the nares, in having the latter in straight series, instead of curved. It differs from *C. ocellatus* and many species with simple digits, in wanting the discoidal folding of the thoracic and abdominal integument.

Cystignathus poecilochilus.

Tympanum half the size of the eye. Head rather depressed. Muzzle short, not prominent. Tongue oval, submarginate posteriorly. Vomerine teeth in two well-separated curved series behind the internal nares, the outer extremities of the former on a line with the middle of the latter. A pectoral, lateral, abdominal fold, enclosing the thoracic integument, as a disc. A dermal fold from the posterior border of each orbit to the groin. The heel extended reaches the nostril. Toes not margined, slightly webbed at the base; their subarticular knobs very prominent. Sole smooth. Internal anterior digit shorter than the third, and longer than the fourth. A large palmar tubercle; an elongate one at the base of the internal digit. Length of head and body 1 in. 10 l. Anterior extremity 10 l. Hinder extremities 2 in. 9 l.

Color of superior surfaces chestnut brown; the sides rather darker, delicately marbled next to the pure white abdomen.

A brown band on the extremity of each canthus rostralis reaching the labial commissure; another beneath the anterior part of the orbit. Lips marbled with white and brownish. A narrow brown band above and behind the tympanum. Some light-bordered brown spots on the anterior face of the femur

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and posterior face of the tibia. A light line on the posterior face of each femur.

Habitat.—Near Turbo, New Granada. Mus. Smithsonian, (No. 4347.) Acad., Philadelphia.

The fewness of the dermal plicæ, the less prominence of the muzzle, and the want of spots on the back, separate this species from the *fuscus*. In *tæniatus* there are no folds, and the vomerine teeth are in fasciculi.

Pseudacris feriarum. *Heloeetes feriarum* Baird, Proc. Acad. Nat. Sci. Phila. 1854, p. 61.

The differences between *Pseudacris Fitz* and *Heloeetes* Baird, do not seem obvious. The present species was described from specimens found near Carlisle, Penna. I have found it abundant near Gloucester, New Jersey, and in the valley of Trough Creek, in the southern part of Huntingdon Co., Pa.

Phrynocerus testudiniceps.

Top of the head plane, the profile of the muzzle descending from the nasal process of the frontal bone at an obtuse angle. Space between the orbits slightly concave, wider than the diameter of the orbit. Temporal ridge not prominent. Dermo-ossification roofing over the temporal fossæ, as in Spix's figure of *Rana scutata*, but not enclosing the tympanum posteriorly or inferiorly. Its posterior border is nuchal, continuous, concave; it is further behind the orbit than the end of the muzzle is anterior to the latter. Tympanum vertically oval, longest diameter equal to the length of the third phalanx of the third anterior digit. Vomerine teeth in separate transverse series anterior to the inner margin of the internal nares. Anterior digits free; posterior fully webbed, except the extent of the last two phalanges of the median.

Skin (in a stuffed specimen) without folds, but with obtuse warts. Length of head and body 7 in. Head 1 in. 9 l. Tarsus and longest toe 3 in. 9 l. Breadth of jaws on the gular region, 2 in. 9 l.

Above bright yellowish and brownish green, marbled with black. Sides and inferior surfaces of extremities without marbling. Subanal region blackish, spotted with yellow. Belly and gular region whitish, a few black vermiculations on the latter.

Habitat.—Panama. Mus. Academy, Philadelphia. Lieut. Fields.

*Phrynocerus** appears to be a name applicable to the Ranid genus, which differs from *Ceratophrys*, in wanting a dorsal dermo-osseous shield. Whether the *P. testudiniceps* truly belongs to it, is yet uncertain. It is remarkable in the relatively small head, plane profile, and anterior position of orbits.

Bufo hæmatiticus.

Form slender. No bony ridges on the superior surface of the head. Muzzle short, high, angular; canthus rostralis a sharply-defined right angle, continuous with a fold on the eyelid, the paratoid gland, and the side nearly to the groin. Nostrils latero-vertical. Mouth large, its commissure directed obliquely downward. Tongue elongate, oval, extensively free. Ostia pharyngea smaller than internal nares. Tympanic disc vertical, elliptic, one-fourth the extent of the eye. Paratoid gland lateral, smooth, elongate, angular externally. Anterior extremities slender, reaching beyond the posterior face of the femur. Palmar tubercles few, one large, oval, median. Hinder extremities slender; heel reaching to the orbit. Sole smooth; three metatarsal tubercles all slightly developed, especially the median. Palmure of the toes slight. Skin everywhere smooth, except a few granulations on the occiput. Length of head and body 1 in. 6 l. Hinder extremities 1 in. 10 l.

Above fawn brown, tinged with pink. Sides of the head and body, beneath the lateral fold, red-brown, brighter posteriorly. A pale spot anterior to and beneath the eye. Two black, white-bordered spots on the interscapular region, arranged *en chevron*; two similar sacral spots. Small spots on the femur,

*Bibron, Tschudi, *Classif. der Batrachier*, p. 44.

and larger ones near the middle of the tibiæ, black, white-bordered. Extremities shaded with pink. Belly and gular region pinkish brown. Digits tipped with pink.

Var. lachrymans. Skin minutely glandular above, lateral fold strong, extending to the groin. Above pink, without dorsal spots. Spots on the tibiæ not white-bordered. A pink spot beneath and in front of the eye. Gular region yellowish.

Habitat.—Region of the Truando, New Granada. Mus. Smithsonian, (No. 4344.) Acad. Philada.

This curious toad is further removed from the *Bufo vulgaris* than the types of many genera are from each other, but it is difficult to seize upon special characters upon which to base a generic diagnosis, without further investigation. Its general form is similar to that of *B. gracilis* Gird. It is in some degree allied to *Otilophus margaritifer*, but, besides wanting the cranial crests, the spines of the dorsal vertebræ are not developed in the same manner.

Bufo politus.

Head without any osseous ridges; canthus rostralis none, profile of muzzle gradually descending nearly to the lip. Emargination of the latter broad. Nostrils transverse, vertical. Skin of the whole body smooth, shining, without rugosities or spines; abdomen areolated, most coarsely posteriorly. Extremities stout, toes fully webbed, soles smooth, without tubercles except that formed by the first cuneiform bone, which is very prominent, oblique, conic, yellow, not brown tipped. A tarsal ridge, no fold. Fingers free; palm smooth, a large indistinct median callosity; a tubercle at the base of the thumb. Tympanum one-fourth the size of the eye, narrowed above; paratoid immediately above it, oval, moderate. A series of flat glands on each side of the back symmetrically arranged. Glands also on the superior surfaces of the humerus, antebrachium, femur and tibia: three on the last remarkably large. Length of muzzle to sternum 7 l.; sternum to vent 1 in. 10 l.: anterior extremity 1 in. 10 l.; posterior extremity 3 in. Above olive brown, the glands bordered with deep brown. Inner faces of the extremities straw colored with large brown spots. Beneath bright yellow with variously inosculating black bands. Palms and soles slate color.

This curious toad resembles the *B. leschenaultii* D. and B., from Guiana, in some respects, but differs in many points—as the round canthus rostrales, palmated toes, and color. It may be related to *B. trifolium* Tsch., but the characters of that species are little known. *B. politus* has been taken near Greytown, Nicaragua, by Dr. Caldwell (coll. No. 191) and sent to the Museum of the Smithsonian Institution, (No. 5600.)

Fifty-nine species of toads of the genus *Bufo* have been described, including those of the present article.

Bufo coniferus.

Muzzle prominent, its superior outline only sloping from the concavity of the ridge of the canthus rostralis. This is very prominent, and forms two parallel ridges on the upper surface of the muzzle. It unites with the supraorbital ridge a distance anterior to the orbit, from which angle a strong ridge descends in front of the eye. Supraorbital ridges perfectly straight, a little longer than their distance apart anteriorly. They diverge slightly posteriorly, where each sends off a strong ridge two-thirds its length, slightly directed inward. A strong postorbital ridge, from which a short prominent supratympanic takes its origin. Tympanum distinct, half the size of the eye. Eustachian ostia as large as posterior nares. Tongue very elongate, widened and rounded posteriorly, free for one-third its length. Anterior extremity slender, the distal end of antebrachium reaching the femur at the groin. Palm smooth, one large flat median metacarpal tubercle; one narrow elongate on inner border of the base of the

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internal digit. Fourth digit longer than second. Hinder extremity elongate, no tarsal fold; the digital web extensive, very repand: sole smooth. Two large flat oval metatarsal tubercles, the internal marginal. Skin of under surfaces granular, spinulose on the thorax. Extremities with acute tubercles above. Dorsal region with obtuse tubercles. Numerous elongate conic warts on the sides, largest on a fold from the paratoid gland to the groin; such are also found beneath it anteriorly, and upon the angle of the jaws. The paratoid gland is lateral and very small,—not more than half the extent of the upper eyelid—and is studded with conic warts. Above and behind it is a deep depression. Length of head and body three inches; breadth across gular region 1 in. 1 line. Length of posterior extremity (along anterior face,) 4 inches. Above brownish gray with a few large dark-brown spots, which do not interrupt a median line. Extremities dark spotted: a light band between the eyes, and one from the eye to the angle of the mouth.

Habitat.—Turbo region, New Granada. Mus. Smithsonian, (No. 4335.) Discovered by Mr. Arthur Schott, of Lieut. Michler's Expedition.

This species is allied to various others of the section of the genus characterized by the presence of an occipital process to the supraorbital ridge; which embraces in America, *Bufones lentiginosus*, *ocellatus*, *nebulifer*, *dorbignyi*, *veraguensis*, and perhaps *sternosignatus*. It nearly approaches the *veraguensis* *Schmidt*, but differs, first, in the distinctness of the tympanum and large ostia pharyngea; second, in the very small paratoid gland; third, in the absence of ridge from lower margin of eye towards paratoid; fourth, in the less freedom of the tongue. In *nebulifer* the front is more declive, the canthus rostrales less concave, the paratoids larger, the conical warts absent, the soles and palms tuberculous.

April 1st, 1862.

Mr. LEA, President, in the Chair.

Thirty-three members present.

A paper was presented for publication entitled

Synopsis of the North American Forms of Colymbidæ, and Podocypidæ, by Elliott Coues, which was referred to a Committee.

Mr. Warner made some remarks on the resemblance existing between organic forms and certain figures produced by optical, acoustic and electrical experiments; also, on the relations existing between these forms and figures and certain mathematical lines mentioned in a pamphlet on organic morphology, published by him.

April 8th, 1862.

Vice-President BRIDGES in the Chair.

Twenty-three members present.

A paper was presented for publication entitled

Descriptions of certain species of diurnal Lepidoptera, etc., by Wm. H. Edwards, which was referred to a Committee.

Dr. Slack called the attention of the members to a colored cast of the head of a gorilla, which he characterized as a new species under the name of *Gorilla* 1862.]

Fig. 40, does not give a recognizable outline of typical *Pal. rufa*, of the size of the figure.

Fig. 43, page 27, refers to a species of shell found in the Ohio Canal at Columbus, Ohio. Other shells of a similar form at maturity, from other localities have been confounded with this as *Pal. obesa*; but later investigations referring to the embryonic young and other specimens of various sizes would warrant the conclusion that they were distinct. This shell stands related on one hand to *integra* and *ponderosa*, and on the other to *Pal. regularis*, Lea. The young shells nearly but not quite resemble Mr. Lea's types of *regularis*.

Fig. 44. *Pal. genicula*, is more nearly allied to *integra* than to any other known form.

Mr. Binney has given a figure of the lingual dentition of specimens of *Pal. integra* on page 29. It is to be regretted that minute comparisons were not made between those of *integra* with the teeth of *rufa* from the specimens of the two species which were furnished him by the writer for that purpose.

Mr. Binney is also unfortunate in his treatment of *Pal. coarctata*, Lea. It certainly cannot short of doing violence to the subject be made to embrace *Pal. exilis*, Anth., to which *P. compressa* is here submitted as a synonym.

ERRATA AND ADDENDA.

- Page 71, line 9 from bottom, for "chryostictus" read *chrysostictus*.
 73, line 34, for *Ialtris* read *Jaltris*.
 75, line 7 from bottom, for *Ophiomorphus* read *Opheomorphus*.
 76, note 3d, for 210 read 180.
 77, line 12, add loreal oblong.
 77, line 28, for "Haliophis" read *Alsophis*.
 78, line 13, for "epinephalus" read *epinephelus*.
 154, line 11, add after *Halophila*, Gird., (?=*Platymantis*, Gthr.)
 154, line 12, add *plicifera*.
 184, line 5 from bottom, add Tympanic orifice distinct.
 189, line 34, for 1 in. 9 l. read 2 in. 9 l.
 249, line 6, for *Carphoptis Harpesti* read *Carphophis harpesti*.
 337, line 3 from bottom, for *Homeroselaps* read *Homoroselaps*.
 337, note, for Falvin read Salvin.
 340, line 5, add, although the same parts may usually very early attain completion, thus becoming of great systematic value.
 340, line 4 from bottom, add, from Ooroomiah.
 340, line 3 from bottom, add Umvoti Zulu Country.
 341, line 30, add, from Umvoti Zulu Country.
 344, line 8, add, from Ooroomiah.
 346, before TESTUDINATA insert CROCODILLA. *Jacare latirostris*, Gray.
 Dum. Bibr. iii. p. 86, Buenos Ayres.
 350, line 14, add Perhaps the curiyú of Azara, i. 226.
 350, line 26, add as shown by Dr. J. E. Gray.
 353, line 5, for *podicipinus* read *podicipitinus*.
 353, line 29, for *variabilis* read *intermedius*.
 356, line 6 from bottom, and
 357, line 21, for Von Martins read Von Martens.
 358, between lines 40 and 41, add *stermosignatus* ex Gthr.
 358, line 46, after *Phryne* add Fitz.
 359, note, line 9, add perhaps not different from *H. baudinii*.

The Reports of the Recording Secretary and Curators were read as follows :

[Dec.