

Descriptions of new species of Reptiles, collected by the U. S. Exploring Expedition under the command of Capt. CHARLES WILKES, U. S. N.

First part.—Including the species from the Western coast of America.

By SPENCER F. BAIRD and CHARLES GIRARD.

AMBLYSTOMA TENEBROSUM, B. and G. The single specimen of this species brought home by the Expedition is five inches and a half in length, of which the tapering and most compressed tail occupies two and a quarter. The head is subelliptical, and longer than broad. The limbs are proportionally stout; the third finger is the longest. The color (as preserved in alcohol) is uniformly chesnut brown, marbled with a much deeper (nearly black) brown.

This species is related to *A. macrodactylum*, Baird, but differs from it in the structure of the hind feet, in which the fourth finger is the longest; also in the vomerine band of teeth, which, in *A. macrodactylum* forms a curve convex forwards, on the middle region of the palate, while in *A. tenebrosus*, the convexity of the same curve is directed backwards.

From Oregon.

RANA AURORA, B. and G. The general aspect of this species differs greatly from that of all its congeners in North America. The length of the body and head together is three inches and a half, the head forming nearly one third of this length. The head itself is pyramidal, pointed, the nostrils situated midway between the anterior rim of the eye and the tip of the snout. Eyes of medium size, anterior limbs short; fingers rather long and slender. The body is orange red, with here and there black irregular patches.

From Puget Sound.

RANA DRAYTONII, B. and G. This species resembles very much the preceding in its external appearance. It differs, however, in having a truncated snout, the nostrils consequently nearer to its tip than to the eyes. The eyes themselves and tympanum are proportionally larger than in *R. aurora*, the limbs more developed and the tongue much narrower. The ground color is olivaceous green, maculated with black on the upper region of the body and limbs, whilst underneath the hue is unicolor, except sometimes under the head, breast and hind legs, where the brown and white mingle in circular dots.

Specimens were collected at San Francisco, California, and on Columbia River by Mr. Drayton himself, to whom we take pleasure in dedicating this species.

HYLA REGILLA, B. and G. This is a species of medium size; the largest individual observed measuring one inch and a half from the nose to the posterior extremity of the body, the head itself occupying about half of this length. The hind legs are long and slender, the web extending only to half the length of the longest toe; fingers comparatively long. The general color is green above, turning to orange yellow along the sides of the head, abdomen and legs. Two oblong, brownish black spots exist on the occiput, from which two vittæ (one pair) of the same black color extend along the dorsal region; a similar band passes from the tip of the nose, across the eye and tympanum, and along the abdomen, when it is interrupted and forms a series of black and irregular small spots. In the immature state, green is the prevailing color; a few black spots being present along the whitish abdomen.

Specimens of this species were collected on Sacramento River, in Oregon and Puget Sound. Drawings from life were made on the spot by Mr. Drayton.

BUFO BOREAS, B. and G. Upper surface of head flat, nearly even, the orbits alone being raised above it. Snout truncated. Parotids of medium size and oblong. Tympanum comparatively small. Body tuberculous or warty. Hind feet webbed to nearly the tip of the toes. The color is brownish green above, dirty white below, with blackish brown patches spread all over. There is a dorsal, narrow and yellowish stripe, extending posteriorly from behind the eyes along the whole length of the body.

Specimens were obtained on Columbia River and Puget Sound. The body of the largest one measures a little over four inches.

SCELOPORUS GRACILIS, B. and G. A pretty little species, calling to mind *Sc. graciosus* described and figured in Stansbury's Report on the great Salt Lake of Utah. It is slenderer, however, and possesses more elongated limbs and tail. The fingers and toes are likewise very slender. The head is gently conical in front; the plates which cover its upper surface resemble somewhat those in *Sc. graciosus*, although presenting good specific differences as will be shown by the figures. The scales are proportionally small and slightly carinated; larger on the tail. There are from twelve to fourteen distinct femoral pores right and left.

Above, the color is brown with a lateral and narrow yellowish stripe extending on either side from the eye to the tail, and margined by a series of elongated black dashes. On the sides of the body there is a double series of black crescents, convex backwards. The inferior part of the body is light and unicolor in the female, whilst the male is provided on the sides of the abdomen with a deep blue elongated area.

Inhabits Oregon.

SCELOPORUS OCCIDENTALIS, B. and G. This species has the general appearance and shape of *Sc. undulatus*, from which we distinguish it by marked differences in the cephalic plates. The dorsal scales are more strongly carinated and their posterior point more acute, thus giving to the animal a rougher aspect. The posterior margin of the scales on the lower surface of the head and sides is on the other hand much less indented, especially in advance of the hind legs.

Inhabits California, and probably Oregon, although less numerous in the latter country where it is replaced by *Sc. gracilis* and the following species.

SCELOPORUS FRONTALIS, B. and G. The most striking character of this species consists in the rounded shape of the snout, a feature attracting immediate notice.

The occipital, vertical and frontal plates resemble more those in *Sc. undulatus*, than in *Sc. occidentalis*, but the arrangement of the supraciliaries is more like that in *Sc. occidentalis* than in *Sc. undulatus*. The scales are slightly carinated; hence a general smooth appearance which contrasts somewhat strikingly with that of *Sc. occidentalis*. The dorsal scales are nearly of the same size as in *Sc. occidentalis*, but at the origin of the tail are sensibly larger. The tail of the unique specimen before us, is broken off at about an inch from the vent.

Caught in going up Puget Sound.

ELGARIA PRINCIPIS, B. and G. Twelve longitudinal rows of smooth abdominal scales, trapezoidal on the belly. Fourteen similar rows of carinated scales on the upper part of the body, forming forty-five transversal series from immediately behind the meatus to the origin of the tail. On the tail itself the scales are the largest, smooth underneath and slightly carinated above. The body and limbs are of slender appearance. The species appears not to attain a very large size; the largest individual seen measures about nine inches from the nose to the tip of the tail.

Of the cephalic plates the vertical one is the most prominent; the shape of the frontal plates readily distinguishes this species from *E. scincicauda*.

Color uniform olivaceous brown above and below; three series (either double or single) of black spots all along the upper region from the head to the tail.

From Oregon and Puget Sound.

EDGARIA FORMOSA, B. and G. Sixteen longitudinal rows of strongly carinated scales on the upper part of the body, forming about fifty transversal series from the meatus to the origin of the tail. Abdominal scales twelve rowed. Tail very long, conical, and tapering. Color yellowish green, with numerous irregular, narrow, transverse bands of brownish black tipped posteriorly with white.

This species resembles *Gerrhonotus multicaudatus* of Blainville, (*Elgaria multicaudata*) in the slender appearance of its body and limbs; the latter how-

ever assume still more this character in *E. multicarinata*, the scales of which are considerably larger than the species here described.

From California.

ELGARIA GRANDIS, B. and G. Fourteen longitudinal rows of carinated scales on the upper part of the body; the carina on the sides is but slightly apparent. Fifty transversal series from the meatus to the origin of the tail. Tail itself one and a half times as large as the body, conical and tapering. Twelve rows of abdominal scales, subquadrangular in shape. Color olivaceous brown, with irregular, transverse and narrow bands of brownish black tipped posteriorly with white.

This species is intimately related to the preceding, from which it differs in the structure of the fronto-nasal plates and the shape of the scales generally. The limbs are also shorter.

Inhabits Oregon.

TROPIDONOTUS ORDINOIDES, B. and G. Is distinguished from *T. infernalis*, (*Coluber infernalis*, Bl.), to which it bears the closest resemblance, by a smaller and more slender head and likewise a smaller eye. There are two anterior orbitals, whilst *T. infernalis* has but one. The scales constituting the lateral row on either side of the abdomen are larger and not keeled. The scales on the upper part of the tail are likewise smooth. The general color is yellowish green with a dorsal yellow line; sometimes also there exists a lateral band of yellowish or whitish yellow, between which and the dorsal line, are two longitudinal rows of polymorphic black spots recalling to mind *T. ordinatus*.

From Puget Sound.

WENONA (Nov. gen.) Head conical, rather small and continuous with the body. Vertical plate about as broad as it is long; between it and the rostral plate are two or three pairs of frontals. Occipitals and supraorbitals rather small and nearly of equal size. Eyes very small, no loreal plate; one anterior orbital, large; the post orbitals are not to be distinguished from the temporal scales. Body cylindrical, covered with small lozenge-shaped and smooth scales. Abdominal shields narrow, one rowed under the tail behind the vent, as well as on the abdomen. Tail very short, slightly tapering towards the tip.

This genus is related to *Tortrix*, and will probably include the *T. Bottæ* of Blainville.

WENONA ISABELLA, B. and G. Vertical plates broader than long. Two pairs of frontal ones. A small plate between the post-frontal pair and the vertical. Length about sixteen inches, of which about two belong to the tail. Of a uniform deep isabel color, lighter on the belly.

From Puget Sound.

WENONA PLUMBEA, B. and G. Vertical plate broader than long. Three pairs of frontal plates; the anterior pair extending on the side of the snout in advance of the nostrils as in the preceding species. The second pair extends likewise down and occupies the place of the loreal, which may sometimes appear as an independent plate. Lower jaw much shorter than the upper one. A double row of plates along the upper jaw; length about eighteen inches. The tail two and a half inches and slightly tapering. Shield under the tail narrower and more elongated than in the preceding species. Of a uniform bluish lead color above, whitish beneath.

From Puget Sound.

CALAMARIA TENUIS, B. and G. General form slender; about eight inches in length from the tip of the snout to the end of the tail. Head somewhat detached from the body. Tail short and conical, one inch and a quarter in length. Occipital plates elongated, elliptical in form; vertical one subpentagonal. Two pairs of frontals, an odd and elliptical small plate in advance of the vertical, between the posterior frontals. Eyes proportionally large. Scales smooth and subelliptical in form. Color of a uniform brown, lighter beneath.

From Puget Sound.

CROTALUS LUCIFER, B. and G. Head subcircular or elliptical, nearly one inch and a quarter in length, covered on the vertex with very small and polygonal scales, elliptical and slightly carinated on the occipital region. One large supra orbital scutella obliquely striated. Eyes proportionally small, ten large anterior orbital plates; the upper one, which is the longest, is polygonal, whilst the lower one is triangular. The rostral plate is rather small, pointed above, higher than broad and pentagonal in form. The general color is reddish brown above, deeper along the dorsal line than on the sides, yellowish beneath. For two-thirds of the length there exists on the back a series of subcircular white rings lined internally with a narrow, black line. There are on the sides a series of irregular blotches which extend to the belly. The posterior third of the body is alternately semi-annulated above with black and yellow, the yellow, however, being much narrower than the black.

From Oregon and California.

EMYS MARMORATA, B. and G. The shape of the shell seen from above is regularly elliptical, slightly concave anteriorly, with a small notch behind. It is rather depressed and provided with a slight dorsal keel. Ventral shield rounded in front, openly concave behind. The tail is very slender and tapering. The posterior nails are stouter than the anterior ones and very much arched. The color is yellowish brown marbled with black.

The largest specimen under examination measures four inches in length from the tip of the snout to the end of the tail; the shell itself being only two inches and three-eighths in length and a little over two inches in width.

From Puget Sound.

The Committee on Dr. Hallowell's descriptions of new Reptiles, reported in favor of publication in the Proceedings.

Descriptions of new Species of Reptiles inhabiting North America.

BY EDWARD HALLOWELL, M. D.

TROPIDONOTUS RHOMBIFER.

Sp. Char. Head elongated, depressed, slightly swollen at the temples; a series of dark colored rhomboid spots upon the back, presenting the form of triangles, their apices posteriorly and anteriorly touching each other; a row of dark colored transverse bars upon the sides, uniting with the lateral inferior extremities of the rhomboid spots upon the back; a series of dark colored bands upon the tail; abdomen and under part of tail more or less maculated; scuta very strongly carinated: 25 rows of carinated scales; abdominal scuta 142; sub-caudal 70.

Dimensions. Length of head $1\frac{1}{2}$ inches (Fr.); greatest breadth posteriorly 10 lines; length of body 2 ft.; of tail $6\frac{1}{2}$ inches; total length 2 ft. 8 inches.

Habitat. Arkansas river and its tributaries, near the northern boundary of the Creek Nation; found abundantly on the borders of streams. Dr. Woodhouse observed one with many young on one of the sand banks of the Arkansas river.

TROPIDONOTUS TRANSVERSUS.

Sp. Char. Head large, swollen at the temples, convex posteriorly, flattened between the orbits, depressed in front; a series of subquadrate dark colored blotches, thirty-six or thirty-seven in number, along the back; a transverse row of oblong bars along the sides, their upper margins alternating with the inferior margins of the dorsal blotches; scales strongly carinated, 23 rows; abdominal scuta 144; sub-caudal 78.

Dimensions. Length of head 12 lines; greatest breadth 7; length of body 1 ft. (Fr.) 5 inches 7 lines; length of tail 6 inches; total length 2 ft.

Habitat. Creek boundary, found near the banks of the Arkansas and its tributaries.

Remarks. In *Tropidonotus taxis pilotus* the bars upon the back are much wider apart than in the above species, and it has but two posterior ocular plates; the arrangement of the temporal plates is also different; the frontal plate is much larger, and it has thirty-one rows of scales. *Tropidonotus taxis pilotus* is remarkable for its great size, being perhaps larger than any of our known water serpents; transversus is a much smaller animal. The markings upon the back and sides correspond in some degree with Say's description of *Coluber calligaster*, but the scales in *C. calligaster* are smooth. The latter animal is most probably the one well known as *Col. eximius*.

PHRYNOSOMA PLANICEPS.

Sp. Char. Head more compressed, longer and broader than in *P. cornutum*; nostrils within the supraciliary ridge; upper jaw bordered posteriorly by a row of pointed spines; central spine of the crown separated from the two adjacent spines by a wide interval; front part of head furrowed in the centre; scales of chin of nearly equal size; abdominal scales smooth or indistinctly carinated; tail longer than in *cornutum*, and less suddenly tapering to a point; ground color of animal light yellow or ash color; (brown mingled with yellow in *cornutum*.)

Dimensions. Length of head 9 lines; greatest vertical measurement 7 lines; breadth posteriorly, including spines, 1 inch 2 lines; length of body to vent 3 inches; length of tail 1 inch 7 lines; length of humerus 7 lines; of fore arm $6\frac{1}{2}$; of hand to extremity of longest finger, including nail, $7\frac{1}{2}$ lines; length of thigh 9 lines; of tibia 9 lines; of foot to extremity of longest toe nail $9\frac{1}{2}$ lines; total length 5 inches 4 lines.

Habitat. Western Texas, near the Rio Grande.

SCELOPORUS MARMORATUS.

Sp. Char. Four plates behind the rostral and between the nostrils, the two first more or less linear; six plates upon the frontal region; behind these, five plates surrounding one which is pentagonal; posterior to these, midway between the supraciliary ridges, a single large hexagonal plate (intraorbital;); snout rather pointed, more narrow than in *delicatissimus*; body slender; scales bipunctate posteriorly.

Dimensions. Length of head $6\frac{1}{2}$ lines; greatest breadth 4 lines; length of neck and body to vent 1 inch 5 lines; length of tail 2 inches $10\frac{1}{2}$ lines; length of humerus 3 lines; of fore arm 3 lines; length of hand to extremity of longest finger 4 lines; length of thigh 5 lines; of tibia 5 lines; of foot to extremity of longest toe 7 lines; circumference of body 14 lines; total length 4 inches 10 lines.

Habitat. San Antonio, Texas.

SCELOPORUS DELICATISSIMUS.

Sp. Char. Four plates behind the rostral and between the nostrils; the two first much smaller than the latter; nine plates upon the frontal region, in two rows (four in front and five posteriorly;); behind these five plates without the central pentagonal one above described; snout somewhat obtuse; body more slender than that of *marmoratus*; scales bipunctate posteriorly.

Dimensions. Length of head 6 lines; greatest breadth 4 lines; length of neck and body to vent 1 inch 5 lines; length of tail 3 inches 2 lines; length of humerus 3 lines; of fore arm 3 lines; of hand to extremity of longest finger 4 lines; of thigh 4 lines; of tibia 5 lines; of foot to extremity of longest toe $7\frac{1}{2}$ lines; total length 5 inches 1 line.

Habitat. San Antonio, Texas.

PSAMMOPHIS FLAVI-GULARIS.

Sp. Char. Head long, superior and inferior marginal outline of cranial portion slightly convex; temples depressed; body robust; color light brown or fuscous above; chin, throat, abdomen, and under part of tail yellow; 17 rows of scales; abdominal scuta 130; sub-caudal 97.

Dimensions of largest specimen. Length of head 1 inch $6\frac{1}{2}$ lines; greatest breadth 9 lines; length of body 3 ft. 5 in. 7 lines; of tail 9 inches (mutilated); greatest circumference 3 inches 2 lines.

Remarks. The animal above described differs from the *Psammophis flagelliformis*, in being more robust, and in its coloration; all the specimens brought by Dr. Woodhouse being of a light brown or olive color above, and of a yellow straw color beneath. The specimen of *flagelliformis* in the collection of the Academy corresponds with the description of Prof. Holbrook, who makes the following observations in regard to its color; "The superior surface of the head and neck and nearly one half of the body, is raven black, gradually becoming green on approaching the tail, which is of a very light brown or tawny color; the scales on the tail are rendered conspicuous by their dark margins. The inferior surface of the neck and anterior part of the abdomen is bluish slate color, the posterior part white clouded with brown; some parts of the abdomen white and shining, as well as the inferior surface of the tail. This snake, however, varies in color or rather in shade. Bartram has seen them of a cream color, clay colored, and sometimes almost white, but always raven black near the head." The *Psammophis flagelliformis* appears to be rare, Prof. Holbrook having seen but one specimen during a seven years' search; and Major Le Conte, who resided a long time in Georgia, informs me that he also has seen but one. The present species, according to Dr. Woodhouse, is very abundant where he discovered it—namely, in the sandy region reaching from the frontiers of Texas to the Creek Territory, and designated by a strip of timber extending across it. The specimen under consideration appears also to differ from *flagelliformis* in the form of the scales, the number of rows of which is the same in both species. In *flagelliformis* they are more narrow and elongated, resembling the scales of *Dendrophis*; in *flavi-gularis* they are broader, and many of them distinctly hexagonal. The tail is two and a half inches shorter than in *flagelliformis*, but the body of *flagelliformis* is eight inches longer. Schlegel observes that the serpents belonging to this genus may be considered as holding a middle place between the terrestrial serpents and those which inhabit trees; he describes eight species, none of which belong to the United States. The present species, however, is known to ascend trees with great agility, reaching their summits with ease when attacked.

ELGARIA, Gray.

ELGARIA MARGINATA.

Sp. Char.—Head and upper part of body and tail olive colored; a few minute points along the middle line of the back; nine or ten transverse bars of black along the sides; the posterior margin bordered with white; under surface greenish olive, immaculate.

Dimensions. Length of head $4\frac{3}{4}$ lines; greatest breadth 2 lines; length of neck and body to vent 1 inch; length of tail 1 inch (mutilated); length of anterior extremities to end of the longest of the five fingers $4\frac{1}{2}$ lines; length of posterior extremities to end of the longest of the five toes $6\frac{1}{4}$ lines.

Habitat. New Mexico.

HOMALOSAURUS, Hallowell.

Gen. Char. Head depressed, covered above with polygonal scales; nostrils superior; occipital plate distinct; temples not swollen; marginal plates of the upper jaw imbricate; upper surface of neck, body, and tail covered with granulations; abdomen and under surface of the tail with smooth quadrangular scales; external openings to the ears; throat folded; femoral pores; tail but little longer than the body; body and extremities slender;

HOMALOSAURUS VENTRALIS.

Sp. Char. Head silvery white, with a tinge of yellow; body above ash-colored, thickly maculated with small white spots irregularly disposed; transverse dark colored bars upon the posterior extremities and base of tail; abdo-

men silvery white, with two longitudinal blue colored blotches having two oblique bars of black running across them; two small blue spots upon the under surface of tail.

Dimensions.—Length of head $7\frac{1}{2}$ lines; length of neck and body to anus 2 inches $2\frac{1}{2}$ lines; of tail in the specimen examined, which appears to have been mutilated and restored, 2 inches 3 lines; body 1 inch 5 lines in circumference; length of arm 6 lines; of fore arm $5\frac{1}{2}$ lines; of hand to extremity of longest nail $7\frac{3}{4}$ lines; of feet to extremity of longest toe 1 inch 2 lines; total length of body 5 inches 1 line.

Habitat. New Mexico.

Remarks. This animal approaches *Crotaphytus*, *Holbrook*, but the nostrils are superior instead of being lateral as in the latter genus. The head of *Crotaphytus* is covered with tubercles, and the occipital plate does not exist, or is small and ill-defined. The forearm is also shorter and much more robust, and the longest fingers are of nearly equal length; in *Homalosaurus* the fourth finger is considerably longer than the third. The temples are much less swollen than in *Crotaphytus*, which has but a single row of plates along the border of the lower jaw. The nostrils in *Holbrookia* are situated as in *Homalosaurus*; and the plates along the margin of both the upper and under jaw have the same configuration and arrangement; the occipital plate also is very distinct, which, as well as most of the plates upon the upper part of the head, is smooth; a considerable number of granulations, however, are observed above the supraciliary ridge at its anterior and posterior part, chiefly in the former position; but in *Holbrookia* there are no external ears, the ear lying immediately beneath the skin, which covers it. Both *Holbrookia* and *Crotaphytus* have femoral pores, but no anal ones, of which also *Crotaphytus* is destitute.

CROTALUS LECONTEI.

Sp. Char. Head quadrangular, broader behind than in front, much flattened above; a few small plates in front; the rest of the upper surface of the head, except over the orbit, covered with scales; a series of about thirty subquadrate brownish blotches along the back, and ten or twelve transverse bands of the same color; brownish bands upon the tail; subquadrate blotches along the back, margined with light yellow; ground color light yellow or straw-color; scales strongly carinated; abdominal scuta 174; sub-caudal 27.

Dimensions. Length of head 14 lines; greatest breadth 11 lines; length of body 2 ft. 9 in. 9 lines; length of tail, exclusive of rattles, 2 inches 6 lines; length 2 ft. 6 inches 5 lines.

Habitat. Cross Timbers.

Remarks. My friend Dr. Le Conte informs me that he found near the Colorado, about seven hundred miles from the last mentioned locality, a species of *Crotalus* which was very abundant in that region, over four feet in length, and which appears to be the same as the one above described. He took the following notes of it upon the spot: "*Crotalus*—cinereous; black with a series of subrhomboidal spots margined with dark brown, and exterior to this a line of white scales; sides with a few darker cinereous spots; beneath pale ochraceous; neck and under part of head white; tail white, with four black rings,* becoming irregular beneath. Length $4\frac{1}{2}$ feet; greatest circumference $5\frac{1}{2}$ inches; 185 transverse scales beneath the body, 28 caudal; fourteen scales in the oblique rows from spine to side in middle and on neck; nine posteriorly and on tail. Colorado, March, 1851." The dorsal spots become indistinct behind. Sandy deserts.

* In a young specimen brought by Dr. Woodhouse these four black rings are very distinct.

PITYOPHIS,* Holbrook.

PITYOPHIS AFFINIS.

Sp. Char. Scales much larger upon the sides than upon the back, where they are comparatively small; a series of brownish or black subquadrate blotches upon the back; a row of much smaller blotches on each side; transverse bands of jet black upon the tail; tail short; abdomen and tail thickly maculated with black; thirty-one rows of carinated scales; abdominal scuta 221; sub-caudal 64.

Dimensions. Length of head 1 inch 2 lines; greatest breadth 8 lines; length of body 2 ft. 5 inches; of tail 5 inches 5 lines; greatest circumference 2 inches $2\frac{1}{2}$ lines.

Another specimen was received of the same species as the above, but which presents a remarkable deviation in the form and arrangement of the plates upon the head, which is no doubt abnormal. Thus there are seven plates upon the head, instead of six, as in Pityophis; these are arranged in three rows two plates in the front, two in the middle and three in the posterior; on each side of the middle row is a small quadrangular plate lying immediately above the loreal, constituting as it were a superior loreal; there is but one large ant-orbital and four posterior orbital on the right side, and three on the left; there are nine superior labials; abdominal scuta 227; sub-caudal 71.

Habitat. New Mexico.

LEPTOPHIS TÆNITA.

Sp. Char. Head much flattened, olive colored with yellow markings; ground color of body above olive, with two lateral longitudinal yellowish vittæ, extending from the occiput to the tail, each middle scale marked with a longitudinal line of black; two lines of black on each side, passing through the middle of two inferior rows of scales from the occiput to a short distance beyond the tail; abdomen immaculate, except toward the neck, where there are a number of small black spots; abdominal scuta 199; sub-caudal 130; 14 rows of longitudinal smooth scales.

Dimensions. Length of head $9\frac{1}{4}$ lines; greatest breadth 5 lines; length of body 1 ft. 7 in. 5 lines; of tail 9 inches; circumference 1 inch 1 line; total length 2 ft. 5 inches $2\frac{1}{4}$ lines; abdominal scuta 199; sub-caudal 140.

Habitat. New Mexico.

BUFO DORSALIS.

Sp. Char. Above dark brown, with numerous irregular lines of yellow; a vertical line of yellow continuous with one which is less distinct upon the head; transverse blotches of black upon the thighs and fore arms; under surface of the animal ochraceous.

Dimensions. Length of head 8 lines; greatest breadth 9 lines; length of head and body 3 inches; length of arm $8\frac{1}{2}$ lines; of fore arm 7 lines; of hand to extremity of longest finger 10 lines; of leg 14 lines; of tarsus 9 lines; of foot 1 inch four lines to extremity of longest toe.

Habitat. New Mexico.

Remarks. This animal differs widely from the Bufo cognatus and Americanus, but resembles the lentiginosus, which Prof. Holbrook observes is found, without doubt, all along the shores of the Gulf of Mexico. It differs from it, however, in the elevation of the ridges upon the head, which in lentiginosus are highly developed, giving to the upper part of the head a canaliculated appearance, a condition that does not exist in this species.

The reptiles above described were collected by my friend Dr. Woodhouse, who was attached to the expedition under command of Capt. L. Sitgreaves, of the corps of Topographical Engineers, for the purpose of exploring the

*The genus Pityophis is characterized by its projecting snout and the presence of four posterior frontal plates in a transverse row, instead of two, as in the ordinary Colubers and Tropidonotes. These characters, with its peculiar physiognomy, cause it to be readily recognised by one familiar with our reptiles.

rivers Zuni and Great and Little Colorado of the West. Too much praise could not be awarded to Dr. Woodhouse, for the zeal and intelligent industry he has manifested in the performance of his arduous duties as physician and naturalist to the Expedition.

When the reptiles brought from Oregon and California by Mr. Townsend, and those of the Exploring Expedition, shall have been carefully studied, much will have been done toward the attainment of a knowledge of the geographical distribution of our reptiles, to which the admirable work of Prof. Holbrook has so greatly contributed. To him we owe nearly all the knowledge we possess with certainty of North American Herpetology, having brought into order and system what was before uncertain and confused, and in clear and classical language determined their characters with precision; thus greatly facilitating the labors of all future inquirers.

ANOTA, Hallowell.

Gen. Char. Head small, covered above with polygonal plates; a row of pointed spines posteriorly; nostrils within the supraciliary ridge: supraciliary ridge but slightly developed, terminating posteriorly in a small pointed spine; chin covered with smooth granulations of unequal size; a row of pointed scales on each side; two gular folds; *no external openings for the ears*; extremities slender; upper surface of body smooth, the numerous pointed species of the ordinary Phrynosomas not existing; no fringe along the lateral margins of the abdomen; body compressed, oval, tail nearly as long as the body; femoral pores very distinct.

ANOTA M'CALLII.

Sp. Char. Margin of upper jaw denticulated posteriorly; the two posterior of the rows of spines along the margin of the under jaw small; the two anterior to these quite large; the two middle spines of the row upon the occiput much longer than the rest, and incurvated; intermediate spine very small; body light ash color above, with a narrow dorsal line of black extending from the occiput to the root of the tail; two oblong dark colored blotches upon each side of the neck; two rows on each side of the dorsal line, of dark colored subcircular spots, two in a row, the external larger than the internal; ground color of upper surface of tail and extremities same as that of the upper surface of the body; under surface of body and extremities silvery white, immaculate; twenty distinct femoral pores on each side.

Dimensions. Length of head 7 lines; greatest breadth, exclusive of spines, 8 lines; length of longest spine $5\frac{1}{4}$ lines; of the next to it $2\frac{1}{2}$; length of arm 7 lines; of fore arm 5 lines; of hand, to extremity of longest finger, 6 lines; length of thigh 7 lines; of tibia 7 lines; of foot to extremity of longest toe, $7\frac{1}{2}$ lines; length of neck and body to vent 2 inches $4\frac{1}{2}$ lines; length of tail 1 inch $8\frac{1}{2}$ lines; total length 4 inches 5 lines.

Habitat. Great Desert of the Colorado, between Vallicita and Camp Yuma, about 160 miles east of San Diego.

Remarks. The animal above described is a Phrynosoma, the ears of which are concealed by the integument. It was caught by Col. George A. M'Call, of the United States Army, during a recent journey through California and Oregon, and presented by him to the Academy, with two young specimens of Phrynosoma coronatum. The great length of its middle posterior spines, its contracted neck and singularly shaped body and tail, give to it a very odd appearance, differing remarkably from that of any of the known Phrynosomata.

Descriptions of New Species of Reptiles from Oregon.

By EDWARD HALLOWELL, M. D.

TROPIDONOTUS CONCINNUS.

Sp. Char. Head slightly swollen at the temples, depressed; canthus rostralis grooved; a longitudinal yellow line running along the median line of the back, including one entire row and one half of each of the adjoining rows of

scales; about sixty oblong transverse golden colored spots on each side; ground color raven black. Abdominal scuta 156; sub-caudal 78.

Description. The head is of moderate size, depressed above; the temples are somewhat swollen; the plates upon the upper part of the head, nine in number, do not differ materially from the plates of the *Tropidonoti* in general; the canthus rostralis, or that portion of the side of the head situated between the eye and the extremity of the snout, is distinctly, but not so deeply grooved as in *Psammophis*; the nostril is situated between two nasal plates, the anterior larger than the posterior; there is a small quadrilateral frenal plate; there is one ant-ocular, and three posterior oculars; a very small part of the ant-ocular plate is seen upon the surface of the head; the eye is of moderate size, projecting; there is a large temporal plate immediately behind the oculars, and posterior to it are four others; seven plates margin the upper jaw, of which the fifth and the sixth are the largest; neck contracted; body of moderate length, thicker in the middle; tail about one-fourth the length of the body. There are seventeen rows of carinated scales.

Color. Head light chesnut above, deeper in front; margin of upper jaw, for two thirds of its extent, light olive; ground color of the body and tail above and upon the sides, raven black; a yellow band, including one row and the half of each adjoining row of scales, extends from the occiput to the tail, along the middle line of the back; it is continued upon the tail, but there becomes more narrow; upon each side of the body, just above the inferior row of scales, is a row of about sixty transverse oblong golden colored spots; one and sometimes two of the intermediate scales is perfectly black; the spots themselves cover about three rows of scales. Abdominal scuta 156; sub-caudal 78.

Dimensions. Length of head 1 inch; greatest breadth 6 lines: length of body 2 ft. 3 inches length of tail 5 inches 10 lines; greatest circumference 2 inches five lines; total length 2 ft. 9 inches 10 lines.

Habitat. Oregon Territory. A specimen in the Museum of the Academy, presented by Dr. Shumard. The most beautiful of the North American serpents hitherto discovered.

HYLA SCAPULARIS.

Sp. Char. Head small; body small and slender, olive green above, with numerous irregular bluish blotches; a bluish vitta running from the eye over the shoulder; total length one and a half inches (Fr.)

Description. The head is short and small, depressed; the snout somewhat rounded; the nostrils are small and circular, looking upward and outward, about a line apart, situated immediately below the ridge running from the extremity of the snout to the anterior canthus of the eye; they are nearer the extremity of the snout than the eye; mouth quite large; the tongue is heart-shaped, quite free behind, notched upon its posterior border; there are two series of palatine teeth between the nostrils, and separated from each other by a narrow intermediate space; the eyes are round and project considerably; the tympanum is small and circular; the body is flattened, rather slender, much contracted posteriorly; extremities slender; the upper surface of the body and extremities present numerous small granulations; abdomen and under surface of extremities much granulated; the granulations upon the abdomen vary in size, and are closely in juxtaposition; chin and throat granulated.

Color. Ground color above greenish olive, presenting numerous irregular bluish blotches upon the surface; several deeper colored blotches upon the sides; a bluish vitta, about two-thirds of a line in breadth, extends from the posterior part of the eye along the sides of the neck over the shoulder, a short distance beyond which it terminates; upper surface of extremities marked with bluish spots.

Dimensions. Length of head 5 lines; greatest breadth 5 lines; length of body 1 inch; length of humerus 4 lines; of fore arm $3\frac{1}{2}$ lines; of hand to extremity of longest finger 5 lines; length of thigh 7 lines; of leg 8 lines; of foot to extremity of longest toe $7\frac{1}{2}$ lines; total length 1 inch 5 lines.

Habitat. Oregon Territory. Presented to the Academy by Dr. Shumard.

The Committee on the following paper by Mr. Cassin, reported in favor of publication in the Proceedings :

Descriptions of new species of Birds, specimens of which are in the collection of the Academy of Natural Sciences of Philadelphia.

By JOHN CASSIN.

1. *Ammodromus ruficeps*, nobis.

Form. Rather slender ; wings short, with the third, fourth and fifth quills nearly equal and longest ; tail rather long, with the feathers narrow ; legs long.

Dimensions. Total length of skin from tip of bill to end of tail about $5\frac{3}{4}$ inches, wing $2\frac{1}{4}$, tail $2\frac{3}{4}$ inches.

Colors. A conspicuous black line on each side of the throat from the base of the lower mandible. Head above bright reddish chestnut which is also the prevailing color of the back, but with the feathers of the latter broadly edged with ashy. Rump and upper tail coverts ash-gray, tinged with the chestnut color of the back.

Spot on the nares white, running into an ashy superciliary line, ear coverts and below ashy, succeeded by a white line from the lower mandible, which is again succeeded by the black line from its base.

Throat white tinged with dull brownish ashy, running into deeper shades of the same colors on the other inferior parts, deepest on the breast and with yellowish on the flanks and under tail coverts. Wings edged with pale yellow at the flexure, wing coverts and quills fuscous edged with cinereous and reddish. Tail fuscous, tinged and edged with reddish, the two middle feathers reddish brown.

Bill and tarsi light colored.

Hab. Calaveras river, California, discovered by A. L. Heermann, M. D.

Obs. Four specimens of this bird were brought by Dr. Heermann in the fine collection made by him in California. It does not resemble any other species sufficiently to render necessary any designation of comparative characters, and may be easily recognized by its distinct narrow lines of black on the sides of the neck, running from the base of the lower mandible.

2. *Emberiza rostrata*, nobis.

Form. Short and rather heavy, somewhat resembling *Peuceea Bachmanii* (Aud.) but with the bill and wings longer, the tail shorter, and hardly of the same genus. Somewhat resembles and is generically allied to *Emberiza Bairdii*, (Aud.), and is about the same size, but has the bill much longer, the tarsi and feet stouter, and the claws stronger and much less curved. Bill lengthened and strong. Wings, with the first, second and third quills longest and nearly equal. Tail rather short, emarginate.

Dimensions. Total length of skin from tip of bill to end of tail about $5\frac{1}{2}$ inches, wing $2\frac{3}{4}$, tail 2 inches.

Colors. Entire plumage above dull brownish and cinereous, every feather longitudinally marked with the former and tipped and edged with the latter, the brown stripes being most strongly marked on the head and back. Narrow, superciliary lines nearly uniting in front. Throat and entire under parts, white, with longitudinal stripes and arrow heads of brown on the breast and flanks ; these stripes forming two lines on each side from the lower mandible and enclosing a stripe of white. Abdomen and under tail coverts dull white.

Wings and tail brown, edged with paler shades of the same color, nearly white on the outer webs of the external tail feathers, deeper and tinged with rufous on the wing coverts and exposed edges of the secondaries. Bill and feet light colored, the former brownish above, (in skin.)

Hab. Sea shore at San Diego, California, discovered by A. L. Heermann, M. D.

Obs. A plain plumaged bird, of which there are several specimens in Dr. Heermann's collection. It is unlike any other finch that I have ever seen, and

may be recognized by its lengthened and strong bill, which is even stronger than that of *Peuceea Bachmanii*. In the general character of its form it approaches *E. Bairdii*, but is colored differently, is more robust and has the bill much larger.

3. *Spermestes nigriceps*, nobis.

Form. Small, with the bill rather large; wing with the second quill slightly longest; tail short, but wide and with the feathers broad.

Dimensions. Total length of skin from tip of bill to end of tail about $3\frac{1}{4}$ inches, wing $1\frac{3}{4}$, tail $1\frac{1}{2}$ inches.

Colors. ♂. Head entirely black, which color is extended to the breast and sides of the body, on the latter (the sides) the black plumage is tipped with white. Middle of the abdominal region and under tail coverts white.

Back and wing coverts bright reddish chestnut, primary quills black with regularly disposed minute spots of white on their outer webs, exposed portion of secondaries reddish chestnut, rump black with minute white spots, tail black.

Bill and feet light colored (in skin.)

♀, or ♂ juv. Entire plumage above brownish tinged with chestnut on the back, below soiled yellowish or pale whitish brown, with a few black feathers on the throat; primaries black edged with white; tail brownish black.

Hab. Zanzibar.

Obs. Three specimens of this pretty species belong to the Rivoli collection, and are marked as from Zanzibar. It is similar to no other species of *Spermestes* with which I am acquainted, but is marked with white spots on the wings like *S. poensis*, (Frazer).

4. *Spermestes fuscans*, nobis.

Form. Small but robust, and with the bill very strong, wing with the first, second and third quills nearly equal, tail rather long, with the central feathers longest.

Dimensions. Total length of skin from tip of bill to end of tail about $3\frac{3}{4}$ inches, wing 2, tail 2 inches.

Colors. Entire plumage dark chocolate brown, deeper on the throat and around the base of the bill. Inner webs of quills paler and nearly white. Bill horn color.

Hab. Borneo.

Obs. I have not succeeded in finding a description of this little bird, though specimens in the collection of the Academy have been labelled in Europe, "*F. nigerrima*," and others "*F. aterrima*." It is not nearly related to any species known to me, and may be distinguished from all others by its plain uniform plumage.

5. *Ephialtes elegans*, nobis.

Form. A typical species, bill rather small, wings with the third and fourth quills longest and nearly equal, tail rather short.

Dimensions. Total length of skin from tip of bill to end of tail about $8\frac{1}{2}$ to 9 inches, wing $6\frac{3}{4}$, tail $3\frac{1}{2}$ inches.

Colors. Feathers of the ear tufts bright yellowish rufous, every feather marked longitudinally and with irregular transverse bands, and minute points of black, which color is almost confined to the outer webs. Face whitish, every feather with irregular lines and points of brown.

Entire plumage above pale umber brown, every feather with an obscure longitudinal stripe of brownish black and with very numerous irregular narrow lines and points of the same color. Plumage of the neck behind with white spots obscurely indicating a collar.

Inferior surface of the body handsomely mottled with white, light fulvous and brownish black; the former being the ground color and every feather longitudinally striped, and with numerous narrow transverse lines and points of the latter, these stripes most strongly marked on the breast, and least distinct on the abdomen and inferior tail-coverts. Flanks light fulvous; tarsi reddish, with irregular lines and spots of brown. Wings and tail umber brown, the former with

square spots of reddish white on their outer webs, and the latter with numerous irregular lines, and narrow bands of reddish and brown.

Hab. Northern Asia, Japan? "En Mer, côtes du Japon, lat. 29° 47' N. long. 126° 13' 30" E."

Obs. This is one of the handsomest of the small species of owls, and bears some resemblance, rather remote, however, and on a small scale, to the large Horned Owls. It is somewhat like *E. semitorques*, (Temm.) but wants the white on the throat and breast, and is smaller and differently colored, and has the toes bare. It resembles also to some extent both *L. lettia*, (Hodg.) and *E. lempiji*, (Horsf.) but is larger than either, and otherwise different. The brown stripes and lines on all parts of the plumage are unusually delicate.

Two specimens are in the collection of the Academy, the more adult of which was obtained by Dr. Wilson from Mr. J. P. Verreaux, of Paris, by whom it was designated as probably an undescribed species. It bears a label indicating the locality as above.

6. *Ephialtes Hendersonii*, nobis.

Form. Resembling *E. capensis* (Smith) and *E. senegalensis* (Sw.) but smaller than either, and has the bill shorter and weaker; wing with the third quill longest, but only slightly exceeding the fourth: tail short.

Dimensions. Total length of skin from tip of bill to end of tail 6½ inches, wing 5, tail 2¼ inches.

Colors. Generally very similar to those of *E. capensis* (Smith) and *E. senegalensis* (Sw.), but darker and with the fine lines and points of brown throughout the plumage much more numerous and distinct. Entire plumage above cinereous, mixed on the neck, back and rump with bright fulvous, every feather longitudinally striped and with numerous very irregular transverse lines and points of brownish black most distinct on the head and back. Frontal feathers nearly white, tufts and face very pale cinereous, striped longitudinally, and minutely lined with dark brown. Plumage below variegated with white and brown, with a tinge of fulvous, every feather having stripes and minute lines and points, as on the back, but less numerous, with the white predominating and nearly pure on the lower abdomen and under tail coverts.

Quills brown with quadrangular spots of white on the outer webs. Tail pale cinereous with irregular transverse bars of brown and exhibiting a different style of coloring from either of the species above mentioned. Tarsi nearly white, obscurely spotted with brown.

Sexes similar.

Hab. Angola. "Came on board U. S. brig Perry off Novo Redondo."—Dr. Henderson's label.

Obs. It is not without some feeling of reluctance that I add another to the several nearly allied and little understood species resembling *E. scops*, (Linn.) Of these there are several which are clearly distinct and well marked, and the bird at present described is one of this character. My reluctance has arisen from the knowledge, that from the descriptions heretofore published, it is quite impossible for naturalists to identify them, or to ascertain in what manner one differs from another; and nothing short of actually examining the original specimens in European collections, which was done by Dr. Wilson in 1851, can afford the necessary information. From his notes and from specimens which he procured during his visit to Europe, and from others previously in the collection of the Academy, I have the gratification of entirely coinciding with him in the opinion that the following are distinct, but some of them nearly related species; *Ephialtes scops*, (Linn.) from which *E. pennata*, (Hodg.) cannot be distinguished; *E. capensis*, (Smith,) *E. senegalensis*, (Sw.), *E. sunia*, (Hodg.), of which I am acquainted with both young and adult, and *E. Hendersonii*, Cassin: and of another group also resembling *E. scops* to some extent, the following appear to be different: *E. lempiji* (Horsf.) which is *J. noctula*, Temm., *E. javanicus* (Less.) *E. lettia* (Hodg.), *E. spilocephalus* (Blyth,) and *E. mantis* (Temm.,) which is *S. rufescens*, (Horsf.) Of all these species, specimens and mostly *suites* are now in the collection of this Academy, and I hope to give, at an early day, the

result of an attempt to arrange them, and to reconcile their synonymes, in a second edition of my catalogue of *Strigidae* in our collection.

Of the interesting little bird at present described, two specimens, male and female, are in a collection made principally on the coasts of Angola and Benguela, during a recent voyage of the U. S. brig Perry, and presented to the Academy by A. A. Henderson, M. D., Surgeon U. S. Navy, who was attached to that vessel as a medical officer. I have taken the liberty of dedicating it to Dr. Henderson as a slight testimonial to his profound and varied scientific acquirements, and as a memento of our long-continued and pleasant friendship.

7. *Larus Heermanni*, nobis.

Form. Bill rather long and slender, wings very long, extending beyond the tail, first primary slightly longest; tail truncate or slightly emarginate.

Dimensions. Total length of skin from tip of bill to end of tail about $17\frac{1}{2}$ inches, wing $13\frac{1}{2}$, tail $5\frac{1}{2}$, bill from the angle of the mouth to the tip $2\frac{1}{2}$ inches.

Colors. Bill red, both mandibles tipped with black; feet and legs dark; head white, which color gradually fades into an ashy lead color, enveloping the entire body above and below; darker above and on the wings, and paler beneath. Secondaries tipped with white, which forms an oblique bar of white on the wing.

Superior coverts of the tail pale cinereous, nearly white. Quills and tail brownish black, the latter tipped with white. Shafts of the two first primaries white on the inferior surface of the wing.

Young. Rather smaller, total length about 16 inches, wing 13, tail 5, bill from the angle of the mouth 2 inches. Entire plumage brown, dark on the head and paler on the under surface of the body, quills and tail feathers brownish black, the latter narrowly edged at the tip with white.

Hab. Coast of California at San Diego, discovered by A. L. Heermann, M.D.

Obs. This beautiful gull appears to belong to a group of species comprising *Larus Belcheri*, Vigors, *L. erythrorhynchus*, Gould, and others, all of which inhabit the shores of the Pacific ocean. It is most nearly related to *L. Belcheri*, but is not so large, and has the head pure white, which is not the case in that species. In the description of the latter (in Zool. Jour. iv. p. 328,) the rump is described as white; in the present bird the rump is dark ashy, but the superior coverts of the tail nearly white, and in the young bird they are dark brown.

I have dedicated this handsome species to my friend Dr. Heermann, as a token of acknowledgment due to his accomplishment as a naturalist, and his great perseverance and success as a scientific traveller.

8. *Mergus americanus*, nobis. Wilson's Am. Orn. viii. pl. 68. Aud. B. of Am. pl. 331.

Obs. I propose this name for the common bird which has hitherto been regarded as identical with the European species well known as *Mergus merganser*, Linn. It is, however, specifically quite distinct. In the American bird the prolonged feathers of the head are almost restricted to the occiput and neck behind, but in that of Europe they commence almost at the base of the bill, and are erectile and crest-like. On the large wing coverts in the American species there is always an exposed and conspicuous bar of black, which, in the European species, is entirely concealed by the lesser coverts. This character is sufficient for the purpose of the practical recognition of the two species in all the specimens that I have ever examined, and may be observed on comparing any plates of the two species that I have seen, but especially Wilson Am. Orn. viii. pl. 68; Aud. B. of Am. pl. 331; Selby, Ill. pl. 57; Gould B. of Eur. v. pl. 39; and Korner Skandinaviska Foglar pl. 57.

9. *Anser parvipes*, nobis.

Form. Generally resembling *A. canadensis*, Linn., but not so large, and with the bill and feet much smaller, the latter being not much more than half the size of that species. Upper mandible not so strongly serrated on its edges, tarsi slender, tail rather fully developed. Possibly a *Bernicla*.

Dimensions. Total length of skin from tip of bill to end of tail about 28 inches, wing 15, tail 6 inches.

Colors. Much like those of *Anser canadensis*, *Bernicla Hutchinsii* and *B. leucoparica*. Large space on the throat and sides of the head white, head above and neck black, back and wings ashy brown, with the feathers having paler tips and edges, rump and tail black, upper tail coverts white; plumage beneath ashy white, with a silky yellowish tinge, and many feathers having darker subterminal stripes; ventral region and under tails coverts white.

Hab. Vera Cruz, Mexico.

Obs. One specimen of this singular bird has been several years in the collection of the Academy, having been presented by its eminent member Marmaduke Burrough, M. D., and collected by him during his residence at Vera Cruz. It resembles the common *Anser canadensis* in general appearance, but may at once be distinguished by the smaller size of the tarsi and feet, as well as its comparatively small and weaker bill. It is much larger than either *Bernicla Hutchinsii* or *Bernicla leucoparica* both of which are in the collection of the Academy.

The Committee to which was referred Mr. Cassin's "Catalogue of the Halcyonidae in the collection of the Academy," reported in favor of publication. (☞ See end of the present No.)

ELECTION.

Dr. Dinwiddie B. Phillips, U. S. Navy, was elected a *Member* of the Academy.