CHAPTER IV.

REPORT

UPON

THE COLLECTIONS OF BATRACHIANS AND REPTILES

MADE IN PORTIONS OF

NEVADA, UTAH, CALIFORNIA, COLORADO, NEW MEXICO, AND ARIZONA,

DURING

THE YEARS 1871, 1872, 1873, AND 1874,

BY

DR. H. C. YARROW.

CHAPTER IV.

The collections of Batrachians and Reptiles upon which this report is based were made in the years 1871, 1872, 1873, and 1874, by the different naturalists of the expedition in California, Arizona, Nevada, New Mexico, Utah, and Colorado.

But a small number of new species has been discovered, but many secured of great rarity and value, and of much interest as increasing our knowledge of the geographical distribution of the reptilian fauna of Western North America.

The collection of 1871 was made principally in Arizona and Nevada by Mr. F. Bischoff, with the assistance of Dr. W. J. Hoffman and others of the party. Owing to Mr. Bischoff's sudden disappearance in Chicago, and the loss of his note books by fire, it is impossible to give more than a mere list of his specimens, which may possibly prove of interest as chronicling the occurrence of some species very rare and valuable.

The collection of 1872, while it embraces but five new species, is particularly rich in numbers, and affords good types of the characteristic reptiles of the localities visited.

It is a matter of some interest, as an established fact, that, as birds were found to be more numerous in the proximity of settlements, the same is true of serpents; very few, except the *Crotalus*, being found upon the barren plains, although occasionally an individual was encountered straggling along apparently in pursuit of food, or a more desirable dwelling place. The neighborhood of Provo and Utah Lake afforded nearly all the species enumerated in the list, and an almost entire absence of venomous serpents was noted at this place, although on the "benches", at the base of the Wahsatch Mountains, the *Crotalus* is met with sparingly. The beautiful *Eutænia vagrans*, rightly called from its wide range, is exceedingly abundant, and *Pityophis sayi* var. *bellona* equally so. *Bascanium* var. *flaviventre*, called

"Blue Chaser" by the settlers, and greatly dreaded, for what reason we were unable to ascertain, is quite common on marshy ground near the lake, and *Bascanium laterale* is also of frequent occurrence, although not as numerous as the preceding varieties. A singular fact was noticed in regard to the serpents of this region, and the same observation will equally apply to the lizards, viz: the extraordinary mimicry of color, depending in a great measure upon the hue and tint of the surrounding objects; those specimens seen upon the grassy meadows of the marshes being brilliant in color, assimilating closely to the general tint of the herbage, while those found upon alkaline plains were lighter, approaching the neutral tint of the ground and sage brush. This fact was particularly noticeable in those serpents and lizards found near red sandstone deposits, the normal colors being so much altered and resembling the tint of the rock to such an extent as to lead to grave doubts of the species under observation. In the course of a single day's ride, we have noticed the little *Phrynosoma*, or "Horned Toad", of the same species, bearing three different solid body tints in as many different localities: on the plain the prevailing color being greenish gray; on a stretch of white alkaline flat nearly white; and on red sandstone rocks so nearly red as to almost escape notice. The most peculiar circumstance of this mimicry is, that after removal from the localities where found, the normal colors invariably return in twenty-four or forty-eight hours. This statement is not merely conjecture, as the experiment was tried with a number of *Phrynosoma* of different tints, and found to be as represented.

As already mentioned in the preliminary report, the rattle of the *Crotalus* was frequently mistaken for the noise made by the Cicadas, although after a short experience they were readily distinguishable by the difference of rhythm; that made by the Cicada being shorter and more uneven. The rattling of this serpent was frequently heard without any apparent cause of provocation, and may have been a sexual call for aught we know. In one instance, a large rattlesnake was discovered beneath an "aparejo", or pack saddle, coiled for a blow, but it had given not the slightest indication of its presence by rattling.

It is thought, with good reason, that the *Crotalus* is rapidly decreasing in numbers on the western plains, or else that stories as to their former

number are the grossest exaggerations, as very few were met with during the expedition of 1872 (although in 1873 many were found along the Gila in Arizona); probably not more than twenty individuals being observed during a ride of over two thousand miles. Our experience also goes to show that the rattlesnake is naturally timid and retiring instead of aggressive, as efforts were frequently made to provoke them to strike without success, they invariably gliding away if permitted. The collection of lizards is rich not only in numbers but species, over one hundred specimens being secured, embracing some twelve species, among which are three new ones belonging to the genus *Sceloporus*. The collection of *Batrachia* is also numerous, and contains some interesting individuals new to the localities visited as well as new species.

The collection of 1873 was made chiefly in Arizona, New Mexico, and Colorado, and from its size and value reflects great credit upon those engaged in securing it. Some of the specimens secured are extremely rare, and many new facts in regard to distribution have been evolved from a study of the material.

During the season's work, it may be interesting to mention the finding of *Crotalus lucifer*, the Black Rattlesnake of Southern California and Arizona, as far north as the White Mountains of Arizona, in which locality it abounds, and *Heterodon nasicus*, the "Hog-nosed Sand Viper", as far south as Mineral Springs, Arizona. The coloration of this species of *Heterodon*, peculiar to the West, is much deeper and more brilliant than its eastern congener. This serpent, which is entirely harmless, curiously enough (for there are no facts to warrant the belief) is esteemed as venomous, and greatly dreaded by settlers, who ruthlessly destroy it when occasion offers. This belief doubtless has originated from the fact of the presence of two fangs in the posterior part of the upper jaw, which, however, have no poison sacs attached. From the general appearance of this reptile, with its narrow, contracted neck, flat, broad head, stumpy tail, and peculiar teeth, we may readily infer the cause of the dislike exhibited by the settlers. *Eutænia vagrans* was everywhere found exhibiting the same diversity of coloration and markings as heretofore, and the same remark will apply equally well to *Pityophis sayi* var. *bellona*.

A curious fact in regard to the distribution of the lizards is that, while in 1872 *Crotaphytus wislizenii* was found to be very abundant in Utah and Nevada, *C. collaris* being extremely scarce; in 1873 in Colorado, New Mexico, and Arizona, the latter was the characteristic Saurian of the localities mentioned, *C. wislizenii* being seldom seen.

The *Phrynosoma*, or "Horned Toads", were very numerous; and some of the specimens of *P. douglassii* collected exhibit exaggerated examples of specific markings, very different from the more northern forms. Among those secured are two fine examples of *P. planiceps*, so called by Hallowell many years ago, but since that time lost sight of.

A very beautiful lizard, new to science and the fauna, was discovered through the exertion of Mr. H. W. Henshaw in Southern Arizona, to which Professor Cope has assigned the name *Sceloporus jarrovii*, and which probably belongs exclusively to the Sonoran fauna; and two other new species belonging to the same family have also been discovered.

The *Batrachia* are well represented in the collection; many species having been obtained, as well as some new to science. The occurrence of *Chorophilus triseriatus*, at Pagosa, in Colorado, is interesting; this being the first time it has been discovered so far west.

The observations of this year, it may be mentioned, fully confirm those of Dr. Elliott Coues, U. S. A., to whom American Herpetologists are greatly indebted for his interesting researches in this region, and to whom we owe our sincere thanks for the very interesting and valuable chapter which follows this report, the result of personal observation while stationed in Arizona, and which is given for the reason that a lengthened stay in a portion of the Territory visited by this expedition enabled him to furnish biographies of the species observed by our collectors, who, in their rapid marches, could do but little besides collecting specimens. This chapter enumerates some species not observed by the expedition.

In 1874, owing to the fact that two special Natural History parties were organized to operate in most favorable localities for Herpetological work, a very large collection was made of interest and value. In addition to these parties, the services of Mr. C. E. Aiken as collector were made

available, and his collections, as well as those of others, have added largely to the number of specimens secured.

The first party, in charge of Dr. J. T. Rothrock, operated in New Mexico and Arizona, proceeding as far south as old Fort Crittenden, near the Mexican boundary line; the second, in charge of the writer, in New Mexico and Colorado; and Mr. Aiken's work was for the most part performed in the same regions.

Of serpents, the most characteristic of Arizona and New Mexico were found to be the different species of *Crotalidæ*,—*Eutænia cyrtopsis*, *E. marciana*, *E. ornata*, and *Heterodon nasicus*. In Southern Arizona, Mr. Henshaw was fortunate enough to discover a serpent for which Prof. E. D. Cope has erected a new genus, calling it *Chilopoma rufipunctatum*. In Rock Creek Cañon, Arizona, an extremely rare turtle was secured, *Cinosternum henrici*, LeConte, which was taken upon the hook of a fishing line. Of lizards, the usual variety of species was obtained, no new ones being discovered.

In Colorado, serpents were not so numerous, although lizards and frogs abounded; *Eutænia vagrans*, *Pityophis sayi* var. *bellona*, and *Bascanium flaviventre* being common. At the Hot Springs, Pagosa, Colo., *P. sayi* var. *bellona* was unusually numerous; hundreds having their dens in the holes of the lime concretion formed by the water of these springs. Three individuals were captured, over six feet in length.

In the identifications of the species, and for the descriptions of new ones, we are under great obligations to Prof. E. D. Cope, who has not only assisted in this regard, but kindly criticised and revised the manuscript of this report, and permitted the use of his new Check-List of North American Batrachia and Reptilia, shortly to be published by the Smithsonian Institution. It will be found that the nomenclature of the report is mostly the same as adopted by this gentleman. We are also under obligations to Prof. S. F. Baird for certain facilities afforded at the National Museum, and to Mr. G. Brown Goode for many favors. No inconsiderable amount of assistance has also been received from some of the members of the expedition in the presentation of specimens; and it is a source of great pleasure to be able to note the hearty coöperation and kindness of these gentlemen in assisting the zoölogical section of this survey.

BATRACHIA.

URODELA.

Fam. AMBLYSTOMIDAE.

Genus AMBLYSTOMA, Tschudi.

AMBLYSTOMA MAVORTIUM, Bd.

a. MAVORTIUM.

Amblystoma mavortium, Bd., Jour. Acad. Nat. Sci. Phila., 2d ser., i, 1849, 284, 292 (New Mexico).—Hallow., Jour. Acad. Nat. Sci. Phila., iii, 1858, 352.—Bd., P. R. R. Rep., x, 1859, Gunnison's & Beckwith's Route, Reptiles, 20.—*Id.*, P. R. R. Rep., xii, 1862, pt. ii, 306.—Cope, Proc. Acad. Nat. Sci. Phila., 1867, 184.—Marsh, Am. Jour. Sci. & Arts, xlvi, Nov., 1868.—Cope, Am. Jour. Sci. & Arts, i, Feb., 1871.—Allen, Proc. Bost. Soc. Nat. Hist., xvii, 1874, 70.—Cope, Check-List N. A. Batrach. & Rept., 1875, 25.

Amblystoma proserpine, Baird. & Girard, Proc. Acad. Nat. Sci. Phila., 1852, 173.—Hallow., Jour. Acad. Nat. Sci. Phila., iii, 1858, 354.—Bd., U. S. & Mex. Bound. Surv., pt. ii, 1859, Reptiles, 29, pl. xxxv, figs. 7–14.

Amblystoma maculatum, Hallow., Proc. Acad. Nat. Sci. Phila., 1857, 215.—*Id.*, Jour. Acad. Nat. Sci. Phila., iii, 1858, 355.

Desmiostoma maculatum, Sager, Penins. Jour. Med., 1858, 428.

Camarataxis maculata, Hallow., Proc. Acad. Nat. Sci. Phila., 1852, 209.—Cope, Proc. Acad. Nat. Sci. Phila., 1859, 123.

Amblystoma nebulosum, Hallow., Sitgreave's Exp. Zuñi & Col. Riv., 1853, 143, pl. 20.—*Id.*, Jour. Acad. Nat. Sci. Phila., iii, 1858, 352.

Amblystoma? nebulosum, Hallow., Proc. Acad. Nat. Sci. Phila., 1866, 300.

b. CALIFORNIENSE.

Siredon lichenoides, Bd., Stans. Rep. Exp. Great Salt Lake, 1852, 336, pl. i.

Amblystoma californiense, Gray, Proc. Zoöl. Soc. Lond., 1853, 11, pl. 7 (Monterey).—Hallow., Jour. Acad. Nat. Sci. Phila., iii, 1858, 355.

Hab.—United States in the Central, Sonoran, and Pacific Districts.

These interesting tailed *Batrachia* are quite common in the semi-stagnant pools and lakes of the Western States and Territories, and a glance at the list given will show that forty-three specimens were collected, not only in the adult state, but the larval; the list also shows the localities where collected.

The principal point of interest regarding them is the fact that within a few, years the larva and adult of these animals were referred to distinct genera and species, and so described under the names of *Siredon lichenoides* and *Amblystoma mavortium;* but Professor Duméril, in 1865, having secured a number of living specimens from the Southern Rocky Mountains, instituted a series of experiments, and proved beyond a doubt that they were one and the same species.

Professor Cope also, by a study of a large number of specimens of different ages, confirmed the statements of Duméril and Professor Marsh, and in the American Journal of Science and Arts, vol. xlvi, November, 1868, published a paper to the same effect.

It is but fair to Professor Baird to state that he knew and believed in such a theory much earlier than any of these gentlemen. The following paper* by Professor Cope, being of great interest, is here reproduced:

"The late observations by various writers on the metamorphoses of *Amblystoma*, especially those of Mr. Tegetmeier, indicate that some of the principal facts in the history of the subject have been overlooked by all of them.

"In the first place, no one has seen any metamorphosis of true *Siredon*,—*Siredon mexicanus*, Shaw (*S. pisciformis*, *S. axolotl*, and *S. maculatus* Auctorum—which inhabits the lakes of Mexico, and of which the Smithsonian collections contain numerous specimens. Whether it undergoes a metamorphosis is entirely unknown to naturalists; though I would express the belief that it will be found to do so occasionally under suitable circumstances. No *Amblystomæ* have been brought from Mexico south of Tamaulipas and Chihuahua by any of the various naturalists collecting for the Government surveys.

"In the next place, Professor Baird was aware of the metamorphosis of all the North American species of Siredons many years before the observation of it in the Jardin des Plantes; although at first he named one of them *Siredon lichenoides*, treating it as a mature animal. He regarded these creatures as larvæ in his essay on the North American Salamanders, published in Philadelphia in 1847.

*From the American Journal of Science and Arts, vol. i, February, 1871, 89.

"Thirdly, the important observation of Duméril * established the fact that the Siredons reproduced as such; and his account of the subsequent loss of larval characters by the offspring is the first of a positive character which we possess on that point.

"After this, in 1867,† the writer recorded the various stages of metamorphosis in different structures, to be observed in reproducing individuals of two species of *Amblystoma*, viz,—*A. tigrinum* and *A mavortium*. These embraced various *Siredon* characters of the dental, branchial, and dermal organs, and of coloration. It was suggested that the metamorphoses observed by Duméril were those of *A. mavortium*, which was confirmed by an examination of specimens sent to the writer, by Professor Duméril, ‡ a year afterward. At the same time, the periods of metamorphosis of eight other species of the genus were stated; and the Mexican *axolotl* was regarded as an *Amblystoma*, whether undergoing metamorphosis or not, owing to the irregularity of its occurrence in the most nearly allied species *A. mavortium*, or from its *Siredon* stage, *S. lichenoides*, Baird.

"In 1868, Professor Marsh, of Yale College, observed the metamorphosis of the *A. mavortium*, confirming the conclusions of previous writers. Since that time, the changes have been observed by Dr. Tegetmeier and others.

"The only point remaining to be determined is whether Siredons (*i. e.*, *Amblystoma mexicanum*) undergo a metamorphosis or not. Among our numerous specimens, I can find none that exhibit any tendency toward the change.

"I might add here that I have had for a time in a winter fernery, a large New Jersey specimen of *Amblystoma tigrinum* a foot in length. It is nocturnal in its habits, and remains during the day in its burrow. This extends through the long diameter of its prison, and has three outlets, which it keeps open. From one of them, as evening approaches, it projects its head, and watches with attention what is transpiring in the room.

"In the same case are specimens of the common *Plethodon cinereus* of

* Bulletin Société d'Acclimatation, 1865, ii, 348.

† Proceedings of the Academy of Natural Sciences of Philadelphia, 166.

‡ Origin of Genera, 1868, 47.

both varieties. During this, as in former years, I observe that this species is nocturnal, and is a great climber. They will climb the rachis of a most slender fern or spear of grass, and lie in a coil on the end of a tall frond or other narrow support which may be sufficient to bear their weight at a height of a foot or eighteen inches above the ground. They climb a plate of glass with great ease by adhering closely to its smooth surface with their moist abdomen. When disturbed on some high perch among the herbage, they leap away by a sudden unbending of the coiled body, in the manner of some caterpillars."

No.	Locality.	Date.	Collector.
45 A*	South Park, Colo	June, 1873	Dr. J. T. Rothrock.
14	Denver, Colo	do	Do.
14, 1 A	do	do	Do.
34 A	South Park, Colo	do	Do.
4 P 2	Nutria, N. Mex	July, 1873	Dr. C. G. Newberry.
572	do	July 22, 1873	H. W. Henshaw.
501 X	Pescao, N. Mex	Aug., 1873	Do.
501 A	do	do	Do.
501 B	do	do	Do.
501 C	do	do	Do.
70	White Mountains, Ariz	do	Do.
654	Fort Defiance, N. Mex	do	Dr. O. Loew.
197 F	San Luis Valley, Colo	Sept., 1873	Dr. J. T. Rothrock.
197 B	do	do	Do.
A 1098	Southern Arizona	Aug., 1874	Jas. M. Rutter.

* Thirty specimens.

ANURA.

BUFONIFORMIA.

Fam. BUFONIDAE.

Genus BUFO, Laurenti.

BUFO LENTIGINOSUS, Shaw, subspecies FRONTOSUS, Cope.

Bufo frontosus, Cope, Proc. Acad. Nat. Sci. Phila., 1866, 301.
Bufo lentiginosus, Shaw, subspecies *frontosus*, Cope, Check-List N. A. Batrach. & Rept., 1875, 29.

Hab.—Sonoran Region.

Abundant in Eastern Utah, Nevada, Colorado, New Mexico, and Arizona, but, singularly enough, had not been seen until discovered by Dr. E. Coues, U. S. A., in New Mexico. Specimens were procured of all ages and sizes during the expeditions of 1872, 1873, and 1874.

Is most closely allied to *B. americanus*, but differs in having shorter and more elevated cranium, longer and larger hind limbs, and more acuminate parotoid glands. The specimen No. O differs from the type in having the tympanum one-half size of eye, the tarsus reaching to the end of the muzzle.

No.	Locality.	Date.	Collector.
A 1	Eastern Utah	Aug., 1872	H. W. Henshaw.
A 2	do	do	Do.
A 3	do	do	Do.
A 4	do	do	Do.
A 5	do	do	Do.
A 6	do	do	Do.
O	Camp Apache, Ariz	Aug., 1873	Do.
D D	Twin Lakes, Colo	do	Dr. J. T. Rothrock.
O X	do	do	Do.
A 1174	Camp Apache, Ariz	July, 1874	Jas. M. Rutter.
52 C	Nutria, N. Mex	do	H. W. Henshaw.
51	Colorado Springs, Colo	do	John Yarrow.
278	Pueblo, Colo	do	C. E. Aiken.

BUFO LENTIGINOSUS, Shaw, subspecies COGNATUS, Say.

Bufo cognatus, Say, Long's Exped. Rocky Mts., ii, 1823, 90.—Holbrook, N. A. Herp., iv, pl. 5.—De Kay, Nat. Hist. N. Y., pt. i, 1842, 68.—Bd., U. S. & Mex. Bound. Surv. Rept., 1859, pt. ii, Rept., 27.

Bufo lentiginosus, Shaw, subspecies *cognatus*, Say, Cope, Check-List N. A. Batrach. & Rept., 1875, 29.

Hab.—Texan District, Colorado and Arizona.

In some specimens, there are dark, oblique blotches on each side of the middle line of the back; metatarsal shovels a little larger.

Specimen No. 402 has the tympanum one-fifth the size of the eye.

Very abundant in Colorado; less so in Arizona.

No.	Locality.	Date.	Collector.
402	Fort Garland, Colo	June, 1873	H. W. Henshaw.
407	do	do	Do.
410	do	do	Do.
410 A	do	do	Do.
410 B	do	do	Do.
115	Ralston, Ariz	Oct., 1873	Dr. C. G. Newberry.
C 1285	Camp Crittenden, Ariz	Sept., 1874	H. W. Henshaw.

BUFO LENTIGINOSUS WOODHOUSEI, Girard.

Bufo dorsalis, Hallow., Proc. Acad, Nat. Sci. Phila., vi, 1852, 181 (not of Spix).

Bufo woodhousei, Girard, Proc. Acad. Nat. Sci. Phila., vii, May, 1854, 86.—Bd., U. S. & Mex. Bound. Surv., ii, 1859, Reptiles, 27.

Bufo lentiginosus (subspecies) *woodhousei*, Cope, Check-List N. A. Batrach. & Rept., 1875.

Hab.—Sonoran Region.

Is lighter than preceding species; the tubercles brown-tipped; a light vertebral band; metatarsal shovels a little smaller. Apparently numerous in New Mexico.

No.	Locality.	Date.	Collector.
39	Santa Fé, N. Mex	July, 1874	Dr. J. T. Rothrock and H. W. Henshaw.
55	Between Pueblo and Fort Garland, Colo	do	Dr. H. C. Yarrow.
55 A	do	do	Do.
L 91	New Mexico	Aug., 1874	Dr. O. Loew.
L 56	do	do	Do.
153	Plaza del Alcalde, N. Mex	do	Dr. H. C. Yarrow.
153 A	do	do	Do.
C 1285 B	Camp Crittenden, Ariz	Sept., 1874	H. W. Henshaw.

BUFO PICTUS, Cope, *sp. nov.*

PLATE XXV, FIGS. 4, 5.

Palmar and solar tubercles well developed, the larger or inner one of the latter not bearing a cutting edge. Cranium plane above; the muzzle produced, rather narrowed, and vertically truncate. Membranum tympani very small, externally invisible; ostia pharyngea exceedingly minute. Tongue large, oval, extensively free. Parotoids superior, broadly oval in form. Upper surfaces covered with large tubercles; inferior surfaces areolate. Limbs stout, especially the tarsus, which bears a longitudinal fold. The heel reaches to the middle of the parotoid gland, and the toes are only webbed at the base.

Color above brown; all the tubercles pink with a black border; a light vertebral band; below yellowish, closely spotted with brown blotches.

Length to vent	0.026
Length to axilla	0.012
Length of fore limb	0.015
Length of fore foot	0.007
Length of hind limb	0.030
Length of hind foot	0.017

From the collections of 1872.

I have long been familiar with this small and brightly-colored species, and have generally supposed it to be the young of the *B. microscaphus*, Cope. The reception of larger specimens enables me to learn that it differs from that species in many respects, among which may be mentioned the general reduction of the auditory apparatus. The species in this point and in style of coloration resembles the *Ollotis cærulescens*, Cope, from Costa Rica.

The plate exhibits a view of the dorsum and abdomen of the species.

BUFO MICROSCAPHUS, Cope.

Bufo microscaphus, COPE, Proc. Acad. Nat. Sci. Phila., 1866, 301.—*Id.*, Check-List N. A. Batrach. & Rept., 1875, 29.

HAB.—Sonoran Region.

Common near Utah Lake, Utah, and in Colorado and Arizona, but not as numerous as preceding species. Also discovered by Dr. E. Coues, U. S. A., in Arizona.

No.	Locality.	Date.	Collector.
Q 1	Provo, Utah	July, 1872	Dr. H. C. Yarrow and H. W. Henshaw.
Q 2	..... do	.... do	Do.
Q 3	..... do	.... do	Do.
Q 4	..... do	.... do	Do.
35	Southern Arizona	—, 1873	Dr. J. T. Rothrock.
45	South Park, Colo	June, 1873	Do.
X	Southern Arizona	.... do	Do.

BUFO PUNCTATUS, Baird & Girard.

Bufo punctatus, Baird & Girard, Proc. Acad. Nat. Sci. Phila., vi, Oct., 1852, 173.—Bd., U. S. & Mex. Bound. Surv., pt. ii, Rept. 1859, 25.—Cope, Check-List N. A. Batrach. & Rept., 1875, 29.

Hab.—Sonoran and Lower Californian Regions.

The figure of this species in the United States and Mexican Boundary Survey, unlike that of the other toads, is very defective, not representing the most marked characters well, and adding two pairs of dorsal glands which do not exist.

Discovered in Texas by J. H. Clark. Apparently not common in regions visited, as but a single specimen was found in Arizona in 1871, and one other (No. C 1285 A) at Camp Crittenden, Ariz., in 1874, by H. W. Henshaw.

ARCIFERA.

Fam. HYLIDAE.

Genus CHOROPHILUS, Bd.

CHOROPHILUS TRISERIATUS subspecies TRISERIATUS, Wied.

Hyla triseriata, Pr. von Wied., Reise in Nord-America, 18—, p. —.

Chorophilus triseriatus subspecies *triseriatus*, Cope, Check-List N. A. Batrach. & Rept., 1875, 30.

Hab.—North America except Pacific and Sonoran Regions.

The occurrence of this species so far to the westward is noteworthy, as it has never been before seen in the localities mentioned. Apparently numerous.

No.	Locality.	Date.	Collector.
393 A	Fort Garland, Colo	June, 1873	H. W. Henshaw.
104	Fairplay, Colo	July, 1873	Dr. J. T. Rothrock.
104 A	..... do	.... do	Do.
104 B	..... do	.... do	Do.
104 C	..... do	.... do	Do.
364 B	Pagosa, Colo	Sept., 1874	C. E. Aiken and Dr. H. C. Yarrow.
271 G	..... do	.... do	Dr. H. C. Yarrow.

Genus HYLA, Laurenti.

HYLA EXIMIA, Bd.

Hyla eximia, Bd., Proc. Acad. Nat. Sci. Phila., vii, April, 1854, 61.—*Id.*, U. S. & Mex. Bound. Surv., ii, Rept., 1859, 29.—Cope, Check-List N. A. Batrach. & Rept., 1875, 30.

Hab.—Sonoran Region.

Like the preceding, somewhat uncommon; one specimen secured (No. 52 B) is characterized by the absence of the scapular bars generally observed in the species.

No.	Locality.	Date.	Collector.
52 B	Nutria, N. Mex	July, 1873	H. W. Henshaw.
A 110, 5	Santa Fé, N. Mex	June, 1874	Do.
B 52 B	Nutria, N. Mex	July, 1874	Do.

HYLA ARENICOLOR, Cope.

Hyla affinis, Bd., Proc. Acad. Nat. Sci. Phila., 1854, 61.—*Id.*, U. S. & Mex. Bound. Surv., Rept., ii, 1859, 29, (not of Spix.)

Hyla arenicolor, Cope, Jour. Acad. Nat. Sci. Phila., 1866, 84.—*Id.*, Proc. Acad. Nat. Sci. Phila., 301.—*Id.*, Check-List N. A. Batrach. & Rept., 1875, 31.

Hab.—Sonoran Region.

Uncommon in localities visited; the specimens noted below being the only ones seen.

No.	Locality.	Date.	Collector.
(?)	Utah	—, 1872	Dr. H. C. Yarrow.
R 1, 4	Santa Fé, N. Mex	June, 1873	Dr. O. Loew.

Fam. SCAPHIOPIDAE.

Genus SPEA, Cope.

SPEA STAGNALIS, Cope, *sp. nov.*

Plate XXV, Figs. 6, 7. 8.

Head wide; muzzle projecting beyond mouth; nostrils terminal. Loreal region oblique; top of head slighly convex or plane in profile. Membranum tympani invisible externally; ostia pharyngea exceedingly minute, much smaller than the choanæ. Vomerine teeth between the nares either anteriorly or posteriorly. Tongue round, extensively free, entire. No pectoral nor tibial glands; parotoids flat and thin. Tarsal shovel large; web of hind foot reaching middle of longest toe; the leg extended brings the heel to the middle of the parotoid gland.

Color light-brown, with a few dark speckles; a spot on canthus rostralis.

The very minute size of the ostia pharyngea of this species distinguishes it from the other Speas, and constitutes an approach to the rudimental condition of the auditory apparatus seen in the genus *Pelobates*.

"I found this species in temporary pools of rain water on the Eocene plateau of Northwest New Mexico, thirty miles from the nearest spring, and forty miles or more from running water. It is usually found in such localities, where it passes through its metamorphoses with great rapidity. As in other species of the group, the tadpoles reach a rather large size before the changes are completed. After these are effected, the frog remains in the pools as long as possible, swimming rather feebly from place to place when disturbed. As in other Batrachians inhabiting similar situations (*e. g.*, *Spea bombifrons*, *Amblystoma mavortium*), their existence is entirely dependent on the temporary pools remaining after rains, and their metamorphosis is necessarily rapid, and subject to many vicissitudes."—(Cope.)

The plate exhibits views of dorsum, abdomen, and mouth.

No.	Locality.	Date.	Collector.
(?)	——, Utah	——, 1872	Dr. H. C. Yarrow.
39	Santa Fé, N. Mex	July, 1874	Dr. J. T. Rothrock and H. W. Henshaw.
236 D	Alto dos Utas, N. Mex	Sept., 1874	E. D. Cope.

Genus SCAPHIOPUS, Holbrook.

SCAPHIOPUS COUCHII, Bd.

Scaphiopus couchii, Bd., U. S. & Mex. Bound. Surv., ii, 1859, Rept., 28.—Cope, Proc. Acad. Nat. Sci. Phila., vii, 1863, 52.—Bd., Proc. Acad. Nat. Sci. Phila., vii, April, 1864, 62.—Cope, Check-List N. A. Batrach. & Rept., 1875, 32.

Hab.—Sonoran Region.

Rather uncommon in Utah.

No.	Locality.	Date.	Collector.
109	Provo, Utah	July, 1872	Dr. H. C. Yarrow and H. W. Henshaw.
109 *a*	..... do	.... do	Do.

SCAPHIOPUS COUCHII var. VARIUS, Cope.

Scaphiopus varius, Cope, Proc. Acad. Nat. Sci. Phila., vii, 1863, 52.

Hab.—Lower California; Utah.

Described from a specimen taken at Cape Saint Lucas, Lower California. Is with the preceding species uncommon in Utah; but one specimen being secured at Provo.

RANIFORMIA.

Fam. RANIDAE.

Genus RANA, Linn.

RANA HALECINA, Kalm, subspecies BERLANDIERI, Baird.

Rana pipiens, Gmel., Syst. Nat., 13th ed., 1788, 1052 (not of authors generally).

Rana halecina, Kalm, Daudin, Hist. Nat. Rept., viii, 1803, 122.—Holbrook, N. A. Herp., i, 89; iv, 1842, 91.—Bd., P. R. R. Rep., x, 1859, 45.—Storer, Mass. Rept., 2d ed., 1839, 237.—Coop. & Suckl., Nat. Hist. Wash. Terr., 1860, 304.—Hayd., Trans. Am. Phil. Soc., xii, 1862, 177.—Cope, Proc. Acad. Nat. Sci. Phila., 1866, 301.—Allen, Proc. Bost. Soc. Nat. Hist., xvii, 1874, 70 (and of authors generally).—Cope, Check-List N. A. Batrach. & Rept., 1875, 32.

Rana utricularis, Harlan, Am. Jour. Sci., x, 1825, 60.—*Id.*, Med. & Phys. Res., 112–224.

Shad Frog, Bartram's Travels, 274.

Subspecies BERLANDIERI, Baird.

Rana berlandieri, Bd., U. S. & Mex. Bound. Surv., ii, Reptiles, 1859, 27, pl. xxxvi, figs. 7–10.

Rana halecina, KALM, subspecies *berlandieri*, BAIRD.—COPE, Check-List N. A. Batrach. & Rept., 1875, 32.

HAB.—Entire Interior of North America; Mexico.

Tolerably common in New Mexico; also found in Utah in 1872.

This species is quite common and widely distributed, living in the vicinity of marshy ground. The specimen marked 445 in the collection of 1873 shows a very large and unusual development of size.

No.	Locality.	Date.	Collector.
P	Provo, Utah	July, 1872	Dr. H. C. Yarrow and H. W. Henshaw.
P 1	do	do	Do.
P 2	do	do	Do.
P 3	do	do	Do.
D	Ephraim City, Utah	Aug., 1872	H. W. Henshaw.
D 1	do	do	Do.
D 2	do	do	Do.
D 3	do	do	Do.
D 4	do	do	Do.
D 5	do	do	Do.
D 6	do	do	Do.
(?)	Provo, Utah	do	Dr. H. C. Yarrow.
T	Beaver, Utah	Sept., 1872	Dr. H. C. Yarrow and H. W. Henshaw.
14 A B	Denver, Colo.	June, 1873	Dr. J. T. Rothrock.
14 A B C	do	do	Do.
197 E	San Luis Valley, Colo	do	Do.
455	Nutria, N. Mex	July, 1873	H. W. Henshaw.
455 A	do	do	Do.
197 D	San Luis Valley, Colo	do	Do.
14 A	Denver, Colo.	Sept., 1873	Dr. J. T. Rothrock.
(?)	San Luis Valley, Colo	do	Do.
L 5 A	Abiquiu, N. Mex	Aug., 1874	Dr. O. Loew.
137	Taos, N. Mex	do	W. G. Shedd.
153	do	do	Dr. H. C. Yarrow.
153 A	do	do	Do.
153 B	do	do	Do.
153 C	do	do	Do.
157	do	do	Do.
157 A	do	do	Do.
153 D	Plaza del Alcalde, N. Mex	do	Do.
382	San Juan River, N. Mex	Sept, 1874	Lieut. R. Birnie.
L 63	Santa Fé, N. Mex	do	Dr. O. Loew.

RANA SEPTENTRIONALIS, Baird.

Rana septentrionalis, Bd., Proc. Acad. Nat. Sci. Phila., 1854, 61 (*R. sinuata*, Bd.).

Hab.—Canada to Montana and Utah.

Very numerous in the vicinity of Provo, Utah, which, as far as known, is its most southern and western limit.

No.	Locality.	Date.	Collector.
F 1	Provo, Utah	July, 1872	Dr. H. C. Yarrow.
F 2	do	do	H. W. Henshaw.
F 3	do	do	Do.

RANA ONCA, Cope, *sp. nov.*

Plate XXV, Figs. 1, 2, 3.

Head oval; muzzle sloping to the lip. Diameter of tympanic membrane equal distance between nares and between nostril and orbit, and three-fourths the diameter of the orbit or the distance from nares to margin of lip in front. Vomerine teeth in fasciculi behind the line connecting the posterior borders of the choanæ. A dermal fold on each side of the back, and a short one behind the angle of the mouth, with some scattered warts on the sides; skin otherwise entirely smooth. Toes obtuse, with wide webs reaching to the base of the penultimate phalange. One long metatarsal tubercle; no fold on the tarsus; a dermal border on outer toe. The heel extends beyond the end of the muzzle.

Light-brown above; below yellow. Three rows of rather distant, solid, small, black spots between the dorsal folds; two or three rows on each side; none of the spots yellow-bordered. Head unspotted; no band on the lip. A brown, vertical band on the front of the humerus. Scattered spots on tibia and femur; clouded spots on the posterior face of the femur. Size of *Rana clamata*.

This frog, of which a female specimen was obtained, combines characteristics of different groups; its coloration resembles somewhat that of the eastern or typical form of *Rana halecina*, but the full palmation of the hind

foot is that of *R. montezumæ* and *R. catesbiana.* It is also quite similar to the variety of *R. temporaria* from California, called *R. draytonii* by Baird and Girard, and *R. longipes* by Hallowell. The feet are shorter, the hind foot being twice as long as the head to the posterior border of the tympanum, while in *R. t. draytonii* it is 2.5 times as long. The *R. onca* lacks the black cheek-patch of the *R. temporaria.*

Specimen secured in 1872 in Utah by Dr. H. C. Yarrow.

The plate affords view of dorsum and mouth of this species.

OPHIDIA.

SOLENOGLYPHA.

Fam. CROTALIDAE

Genus CROTALUS, Linn.

CROTALUS ADAMANTEUS, Beauvois, subspecies ATROX, Baird & Girard.

Crotalus atrox, Baird & Girard, Cat. N. A. Rept., pt. i, Serp., 1853, 5–156.—Bd. P. R. R. Rep., x, 1859, 39.—*Id.*, U. S. & Mex. Bound. Surv., ii, Rept., 1859, 14.

Caudisona atrox, Cope, Mitchell's Res., 1861, 121.—*Id.*, Proc. Acad. Nat. Sci. Phila., 1866, 309.

Crotalus adamanteus, subspecies *atrox*, Cope, Check-List N. A. Batrach. & Rept., 1875, 33.

Hab.—Indian Territory and Texas to Sonora and Southern and Lower California.

Rather uncommon.

No.	Locality.	Date.	Collector.
446	Fort Wingate, N. Mex	July 26, 1873	H. W. Henshaw.

CROTALUS LUCIFER, Baird & Girard.

Crotalus lucifer, Baird & Girard, Proc. Acad. Nat. Sci. Phila., vi, 1852, 171.—*Id.*, Cat. N. A. Rept., pt. i, Serp., 1853, 6.—Girard, Herp., U. S. Exp. Exped., 1858, 187.—Bd., P. R. R. Rep., x, 1859, 10.—Coop. & Suckl., Nat. Hist. Wash. Terr., 1860, 1860, 295.—Cope, Check-List N. A. Batrach. & Rept., 1875, 33.

Caudisona lucifer, COPE, App. Mitchell's Res., 1861, 121.—*Id.*, Proc. Acad. Nat. Sci. Phila., 1866, 307–309.

HAB.—Pacific Subregion; mountains of Arizona.

Stated by Professor Cope to be numerous at some points in Arizona. During the expedition but one was seen, and Arizona is its most eastern range. In California it is very common.

No.	Locality.	Date.	Collector.
574	White Mountains, Ariz.....	Aug. 10, 1873	H. W. Henshaw.

CROTALUS CONFLUENTUS, Say.

Crotalus confluentus, SAY, Long's Exped. Rocky Mts., ii, 1823, 48.—BAIRD & GIRARD, Cat. N. A. Rept., pt. i, Serp., 1853, 8.—BD., P. R. R. Rep., x, 1859, 40.—*Id.* U. S. & Mex. Bound. Surv., ii, Rept., 1859, 14.—COOP. & SUCKL., Nat. Hist. Wash. Terr., 1860, 295.—COPE, Check-List N. A. Batrach. & Rept., 1875, 33.

Caudisona confluenta, COPE, App. Mitchell's Res., 1861, 122.—*Id.*, Proc. Acad. Nat. Sci. Phila., 1866, 307.—ALLEN, Proc. Bost. Soc. Nat. Hist., xvii, 1874, 307–309.

Crotalus lecontei, HALLOW., Proc. Acad. Nat. Sci. Phila., vi, 1851, 180.—*Id.*, Sitgreave's Exp. Zuñi & Col. Riv., 1853, 139.—*Id.*, P. R. R. Rep., x, 1859, 18.—HEERM., P. R. R. Rep., x, 1859, 25.

Caudisona lecontei, COPE, App. Mitchell's Res., 1861, 121.—HAYD., Trans. Am. Phil. Soc., xii, 1862, 177.

Caudisona confluenta var. *lecontei*, COPE, Proc. Acad. Nat. Sci. Phila., 1866, 307.

Crotalus cinereous (sic), LEC. *apud* HALLOW., Sitgreave's Exp. Zuñi & Col. Riv., 1853, 140.

NOTE.—De Kay in Nat. Hist. State of N. Y., 1842, pt. iii, 55, gives *C. durissus*, Linn., as a synonym, marked with an interrogation point.

HAB.—Central and Sonoran Regions, entering Texan District of the Austro-riparian.

This species is upon the western plains and mountains the most numerous of the *Crotalidæ*. It exhibits in a marked degree the mimicry of coloration so often seen in reptiles, varying from deep-brown to bright-gray. Specimen P 3 is a variety with the muzzle scutella much like *C. scutulatus*, Kenn.; No. 2 resembles it also, but in a less marked degree.

No.	Locality.	Date.	Collector.
59	Provo, Utah	July, 1872	Dr. H. C. Yarrow and H. W. Henshaw.
213	Snake Valley, Nev	Aug., 1872	Dr. H. C. Yarrow.
D	Antelope Springs, Nev	do	Do.
188	Rush Lake, Utah	do	H. W. Henshaw.
401	Deseret City, Utah	Oct., 1872	Dr. H. C. Yarrow.
P	Arizona	Nov., 1872	Francis Klett.
13	San Mateo, N. Mex.	July 6, 1873	Dr. C. G. Newberry.
2	Fort Wingate, N. Mex	July, 1873	Do.
240	Camp Apache, Ariz	Aug., 1873	Do.
P 3	Arizona	do	H. W. Henshaw.
P P P 4	Southern Arizona	——, 1873	Do.

CROTALUS MOLOSSUS, Baird & Girard.

Crotalus molossus, Baird & Girard, Cat. N. A. Rept., pt. i, Serp., 1853,10.—Bd., U. S. & Mex. Bound. Surv., ii, Rept., 1859, 14, pl. 11.—Cope, Check-List N. A. Batrach. & Rept., 1875, 33.

Crotalus ornatus, Hallow., Proc. Acad. Nat. Sci. Phila., vii, 1854, 192.—*Id.*, P. R. R. Rep., x, 1859, 23.

Caudisona molossus, Mitchell's Res., 1861, 124.—Cope, Proc. Acad. Nat. Sci. Phila., 1866, 307-308.

Hab.—Sonoran Region, entering Texas District.

Apparently as rare as the preceding species. Attains a large size.

No.	Locality.	Date.	Collector.
P P P 1	Southern Arizona	——, 1873	H. W. Henshaw.

Genus CAUDISONA, Laurenti.

CAUDISONA EDWARDSII, Baird & Girard.

Crotalophorus edwardsii, Baird & Girard, Cat. N. A. Rept., pt. i, Serp., 1853, 15.—Bd., U. S. & Mex. Bound. Surv., ii, Reptiles, 1859, 15.

Caudisona edwardsii, Cope, Check-List N. A. Batrach. & Rept., 1875, 34.

Hab.—Sonoran District.

This beautiful species has been met with but in one instance by the collectors of the expedition.

No.	Locality.	Date.	Collector.
1307	Southern Arizona	Sept., 1874	H. W. Henshaw.

While in Arizona, Dr. Coues discovered a new and beautiful species of *Crotalus* (Plate xxii), which Professor Cope has described, and named *Crotalus pyrrhus*. It is the most brilliantly colored of its genus, and is allied to *C. mitchellii*. This serpent was not seen by the survey.

Through the investigation of this genus by Professor Cope, we are now acquainted with eighteen species in all belonging to it, although one or two still remain to be identified. From his paper on the subject, a list is given as follows; but this list has since been reduced according to his new Check-List of N. A. Batrachia and Reptilia, published by the Smithsonian Institution.

The intensity of the distribution of these serpents is the region of Lower California, Upper Sonora, and Arizona, which has seven peculiar species, and three which enter from the neighboring districts. As the literature on this genus is much scattered, it is deemed advisable to give a synopsis according to Professor Cope.

"The genus divides itself into two natural sections:

"I. *Top of muzzle covered by three pairs of symmetrical shields in contact; nasals distinct:*

"*a. Rattle acuminate:*

"*C. durissus*, Linn.—Scales in 29 rows; 4 rows scales below orbit: yellow, with two brown longitudinal bands on anterior part of body, remainder with black rhombs embracing yellow centers.—Sonora and Mexico, to Vera Cruz.

"*C. terrificus*, Laurenti.—4 rows of scales below orbit: brown, with two darker bands above anteriorly, and a series of large, darker dorsal rhombs, with yellow outlines.—Brazil, Mexico.

"*C. basiliscus*, Cope.—2 and 3 rows of scales below eye; rows on body 29; labials 14: yellow-brown, with large adjacent chestnut; red-yellow bordered dorsal rhombs, alternating with chestnut spots; no longitudinal bands anteriorly.—Western Mexico.

"*aa. Rattle parallelogrammic:*

"*C. molossus*, Baird and Girard.—29 rows of scales; 18 labials, separated by 5 rows from orbit: brownish sulphur above, with small, transverse, reddish, dorsal rhombs, the angles produced as lateral bands; no longitudinal bands on neck; tail black.—Arizona and New Mexico.

"II. *Nasal plates distinct; muzzle with small plates or numerous scales above:*

"*a. Muzzle with 2 marginal shields above each canthus rostralis:*

"*b. An elevated, narrow, cuneiform rostral:**

"*C. polystictus*, Cope.—Scales 27 rows; superior labials 14, separated from orbit by 2 rows: gray-brown, with 7 longitudinal rows of brown spots; top of head variegated.—Mexico.

"*C. triseriatus*, Wagler.—Scales 23 rows; 2 pairs of large scales on top of muzzle; 6 rows between orbits: yellowish, with a dorsal series of subround brown spots.—Mexico.

"*C. confluentus*, Say.—Scales 25–7? (—9) rows; labials 15 to 18, separated from orbit by 4 rows; 6 to 10 rows between superciliaries: yellow line from superciliaries above angle of mouth; a median dorsal row of brown spots, emarginate before and behind, with alternating lateral series.—Central and Southwest North America.

"*C. lucifer*, Baird and Girard.—Scales 25–7; labials 15–16, with 4 rows above them: numerous subround, blackish, dorsal spots, separated by narrow yellow lines; a light band from supercilia above angle of mouth.—Pacific Region of North America, Arizona.

"*C. scutulatus*, Kennicott.—Scales 25 rows; superior labials 16; 3 or 4 rows interorbital scales, bounded in front by two shields: yellow stripe from eyebrow above rictus oris: yellowish brown, with a dorsal series of truncate, brown, yellow edged rhombs; tail black ringed.—Arizona.

"NOTE.—Mr. Henshaw informs me he killed several serpents

* Professor Cope states that the former division of the species based on the acuminate or parallelogrammic form of the rattle must be abandoned, as several of them with acuminate rattle exhibit a parallelogrammic one when they reach a large size.

in Southern Arizona, which was probably this species, but he was unable to preserve them; the rattle and tail showing them to belong to this division of the genus.

"*C. atrox*, Baird and Girard.—Scales 25–7 rows; labials 15; muzzle with small scales above: yellowish, with a dorsal series of completely yellow edged, brown rhombs; yellow band from supercilian above angle of mouth; tail black ringed.—Texas and Sonora.

"*C. adamanteus*, Beauvois.—Scales 27 rows; labials 15–16; muzzle above with small scales, acuminate: brown, with three series of brown, yellow edged, complete rhombs, the median larger, only separated by their yellow margins; a yellow line from supercilian to angle of mouth.—Florida and Georgia.

"*C. horridus*, Linn.—Scales 23–5, all carinate; labials 12–14; 2 rows between them and the orbit: light line from superciliary plate to angle of mouth; two series of dorsal rhombs, confluent except on the anterior part of the body, forming transverse zigzag blotches; tail black.—Eastern District of North America.

"*bb. One equilateral broad or depressed rostral:*

"*C. enyo*, Cope.—Scales 23 rows; superior labials 13; superciliaries separated by 6 rows; scales on muzzle small: above yellow, with a median series of small transverse rhombs, which are prolonged into vertical lateral black bars; former median and longitudinal on neck; light line to above canthus oris.—Lower California.

"*C. tigris*, Kennicott.—Scales 21–3 rows, numerous smooth plates on top of muzzle, rostral lower; labials 14, separated by 2 rows from orbit; superciliary space wide: yellowish ash, with small dorsal blotches on anterior one-third, and cross bands on posterior two-thirds of body.—Deserts of Gila and Colorado.

"*aa. Upper margin of canthus rostralis, with small scales like the others:*

"*d. Prenasal in contact with rostral; superciliary prolonged into a horn:*

"*C. cerastes*, Hallowell.—2 elongate preorbitals; rostral broad

as high; rattle parallelogrammic; scales 21–3; labials 11–13: light yellowish, with several series small brown spots, median largest.—Deserts of the Gila and Colorado, Arizona.

"NOTE.—Lieutenant Wheeler informs me that during his boat trip up the Colorado in September, 1871, very many serpents presumably of this species were seen on the rocky and sandy banks of the river.

"The Indian guides and porters moved among them apparently fearless of their bite, as at the time they were shedding their skin, and blind. They were also seen in Arizona, and are called 'side-winders' by the settlers, owing to their peculiar lateral progressive motion.

"*dd. Prenasal separated from rostral by scales; superciliary not prolonged:*

"*C. mitchellii*, Cope.—Rostral broad as long; scales 25 rows; labials 16, separated from orbits by 3 rows; 2 elongate preorbitals; 1 loreal: yellowish-gray, with indistinct quadrate dorsal spots, separated by yellow, and becoming cross bands on posterior fourth; rattle parallelogrammic.—Lower California.

"*C. pyrrhus*, Cope.—Rostral broad as long; head very obtuse, rounded; scales 25 rows, 7 between superciliaries, 3 below orbit; labials 14; 2 very small preorbitals, and 4 loreals: pale vermilion, varied with yellow on the sides of the belly, with numerous large reddish-bay, transverse hexagons, which become transverse bands on posterior two-thirds of length, yellow below; rattle subacuminate.—Arizona.

"The *C. lepida* of Kennicott is the type of a genus formerly defined under the name of *Aploaspsis*, and characterized by the presence of a single large nasal shield, which is pierced by a small central nostril.

"I. *Muzzle with numerous smooth plates above:*

"*A. lepida*, Kennicott.—Rostral broad, low; scales of top of muzzle and vertex large, smooth; upper preorbital very small; loreals 3; labials 12, separated by one row from orbit; no postocular band.—Rio Grande, Texas.

"The following table shows how these are distributed:

"Regio Neotropica		5
"S. R. Brasiliana		2
"S. R. Mexicana		4
"Regio Nearctica	13	
"S. R. Sonoriana		10
"S. R. Californiana		1
"S. R. Media		3
"S. R. Orientalis		2
		18

Since this synopsis was published, Professor Cope, as already stated, has restudied the genera and species of this group, and made important changes, reducing the number of species from 18 to 15; some of the species formerly considered by him as valid being now characterized as subspecies. From his check-list, shortly to be published by the Smithsonian Institution, which he has kindly furnished me, I am enabled to give the following list of species:

CROTALIDAE.

Aploaspis lepida, KENNICOTT.
Crotalus pyrrhus, COPE.
Crotalus mitchellii, COPE.
Crotalus cerastes, HALLOW.
Crotalus tigris, KENNICOTT.
Crotalus enyo, COPE.
Crotalus horridus, LINN.
Crotalus adamanteus, BEAUV., subspecies *adamanteus*, BEAUV.
Crotalus adamanteus, BEAUV., subspecies *atrox*, BAIRD & GIRARD.
Crotalus adamanteus, BEAUV., subspecies *scutulatus*, KENNICOTT.
Crotalus lucifer, BAIRD & GIRARD.
Crotalus polystictus, COPE.
Crotalus confluentus, SAY.
Crotalus molossus, BAIRD & GIRARD.
Caudisona rava, COPE.
Caudisona miliaria, LINN.
Caudisona edwardsii, BAIRD & GIRARD.
Caudisona tergemina, SAY.

ASINEA.

FAM. COLUBRIDAE.

Genus CONTIA, Baird & Girard.

CONTIA ISOZONA, Cope.

PLATE XVIII, FIGS. 1, and 1, *a*.

Contia isozona, COPE, Proc. Acad. Nat. Sci. Phila., 1866, 304.—*Id.*, Check-List N. A. Batrach. & Rept., 1875, 36.

HAB.—Utah, Nevada, Arizona.

Two specimens of this beautiful species were procured in Nevada in 1871. The description was based upon specimens procured in Arizona by Dr. E. Coues, U. S. A. It has also been taken in Kane County, Utah.

Genus OPHIBOLUS, Baird & Girard.

OPHIBOLUS DOLIATUS, Linn., subspecies ANNULATUS, Kenn.

Lampropeltis annulata, KENN., Proc. Acad. Nat. Sci. Phila., 1860, 329.—COPE, Proc. Acad. Nat. Sci. Phila., 1860, 257.
Ophibolus doliatus, subspecies *annulatus*, COPE, Check-List N. A. Batrach. & Rept., 1875, 36.

HAB.—Kansas, Arkansas, Texas, Arizona.

Tolerably common in Arizona.

No.	Locality.	Date.	Collector.
P 2	Camp Apache, Ariz	July, 1873	H. W. Henshaw.
P 3	do	do	Do.

OPHIBOLUS PYRRHOMELAS, Cope.

PLATE XIX, FIGS. 1, 1, *a*, and 2.

Ophibolus pyrrhomelanus, COPE, Proc. Acad. Nat. Sci. Phila., 1866, 305.
Ophibolus pyrrhomelas, COPE, Check-List N. A. Batrach. & Rept., 1875, 37.

HAB.—Arizona and California.

This species was discovered in Arizona by Dr. E. Coues, U. S. A., and in 1871 several specimens were secured by this expedition, from which it is

inferred to be tolerably common. Is closely allied to the succeeding species. From an examination of the plate, it will be seen that two individuals of the same species vary greatly in coloration and markings.

OPHIBOLUS GETULUS, Linn., subspecies BOYLII, Baird & Girard.

Ophibolus boylii, Baird & Girard, Cat. N. A. Rept., pt. i, Serp., 1853, 82.—Bd. P. R. R. Rep., x, 1859, 2.—*Id.*, U. S. & Mex. Bound. Surv., ii, Rept., 1859, 20.—Cope, Proc. Acad. Nat. Sci. Phila., 1866, 315.

Lampropeltis boylii, Cope, Proc. Acad. Nat. Sci. Phila., 1860, 255.

Coronella baltcata, Hallow., Proc. Acad. Nat. Sci. Phila., 1853, 236.—*Id.*, P. R. R. Rep., x, 1859, 14.

Ophibolus getulus, Linn., subspecies *boylii*, Cope, Check-List N. A. Batrach. & Rept., 1875, 37.

Hab.—Pacific and Sonoran Regions.

This species is tolerably common in the more southern localities visited.

No.	Locality.	Date.	Collector.
54 A B	Southern Arizona	Oct., 1873	Dr. C. G. Newberry.

Genus DIADOPHIS, Baird & Girard.

DIADOPHIS PULCHELLUS, Baird & Girard.

Diadophus pulchellus, Baird & Girard, Cat. N. A. Rept., pt. i, Serp., 1853, 115.—Bd. P. R. R. Rep., x, 1857, 11.

Hab.—Arizona.

A single specimen only secured in 1873, which has 17 rows of dorsal scales on the back instead of 15; no brown stripes on back.

Not abundant in regions visited.

No.	Locality.	Date.	Collector.
605	Camp Apache, Ariz	Aug. 25, 1873	H. W. Henshaw.

Genus PHIMOTHYRA, Cope (Salvadora).

PHIMOTHYRA GRAHAMIAE, Baird & Girard.

Salvadora grahamiæ, Baird & Girard, Cat. N. A. Rept., pt. i, Serp., 1853, 104, 161.—Bd., U. S. & Mex. Bound. Surv., ii, Rept., 1859, 21.

Phimothyra grahamiæ, Cope, Proc. Acad. Nat. Sci. Phila., 1866, 310.—*Id.*, Check-List N. A. Batrach. & Rept., 1875, 38.

Hab.—Lower Californian and Sonoran Regions to Utah & Texas.

This species is very closely allied to *P. hexalepis*,* Cope, from Arizona, discovered by Dr. Coues, but has a larger tail, four times in length instead of three, besides other specific differences.

Is not common.

No.	Locality.	Date.	Collector.
R 4	Southeastern Arizona.....	Oct., 1873	H. W. Henshaw.

Genus CYCLOPHIS, Günther.

CYCLOPHIS VERNALIS, De Kay.

Coluber vernalis, De Kay, MSS.—Harlan, Jour. Acad. Nat. Sci. Phila., v, 1827, 361.—*Id.*, Med. & Phys. Res., 1835, 124.—Storer, Mass. Rept., 1839, 224.—Holbrook, N. A. Herp., iii, 1842, 79, pl. xvii.—De Kay, N. Y. Fauna, Reptiles, 1842, 40, pl. xi, f. 22.—Thomp., Hist. Verm., 1842, 117.

Chlorosoma vernalis, Baird & Girard, Cat. N. A. Rept. pt. i, Serp., 1853, 108.

Herpetodryas vernalis, Hallow., Proc. Acad. Nat. Sci. Phila., viii, Oct., 1856, 243.—Tenney, Nat. Hist., 1866, 304.

Cyclophis vernalis, Cope, Check-List N. A. Batrach. & Rept., 1875, 38.

Hab.—Eastern and Austroriparian Regions; rare in the latter.

The specimen indicated below is the only one collected by the expedition, and is the first indication of the existence of the species in the Rocky Mountain region.

No.	Locality.	Date.	Collector.
Q L 5	Abiquiu, N. Mex.....	Aug., 1874	Dr. O. Loew.

Genus PITYOPHIS, Holbrook.

PITYOPHIS SAYI, Schlegel, subspecies MEXICANUS, Duméril & Bibron.

Pityophis mexicanus, Duméril & Bibron, Exp. Gén., vii, 236.

Pityophis sayi Schlegel, subspecies *mexicanus*, Duméril & Bibron, Cope, Check-List N. A. Batrach. & Rept., 1875, 39.

Hab.—Sonoran and Central Regions, entering the Texan District.

Quite abundant, showing same diversity of coloration as following spe-

* *Phimothyra grahamiæ*, subspecies *hexalepis*, Cope, Check-List N. A. Batrach. & Rept., 1873, 38.

Phimothyra hexalepis, Proc. Acad. Nat. Sci. Phila., 1866, 305.

cies. The specimen marked Y Y Y has had the tail broken, and it is capped by a horny segment.

No.	Locality.	Date.	Collector.
63	Oak Orchard, Ariz	Aug., 1873	Dr. C. G. Newberry.
Y Y Y	San Ildefonso, N. Mex	Sept., 1874	Dr. H. C. Yarrow.

PITYOPHIS SAYI, Schlegel, subspecies BELLONA, Baird & Girard.

a. SAYI.

Coluber melanoleucus var. *sayi*, Harlan, Jour. Acad. Nat. Sci. Phila., v, 1827, 360.—*Id.*, Med. & Phys. Res., 1835, 123.

Coluber sayi, Schlegel, Ess. Physiog. Serp., 1837, 157 (not *Coronella sayi*, Holbrook, nor *Coluber sayi*, Harlan, which are *Ophibolus*).—Baird & Girard, Cat. N. A. Rept., pt. i, Serp., 1853, 151.

Pityophis sayi, Baird & Girard, Cat. N. A. Rept., pt. i, Serp., 1853, 152 (in text).—Kennicott *apud* Coop. & Suckl., Nat. Hist. Wash. Terr., 1860, 300.—Hayd., Trans. Philo. Soc. Phila., xii, 1862, 177 (not found in the Sonoran region.)

b. BELLONA.

Churchillia bellona, Baird & Girard, Stans. Rep. Exp. Great Salt Lake, 1852, 350.

Pityophis affinis, Hallow., Proc. Acad. Nat. Sci. Phila., vi, 1852, 181.—Hallow., Sitgreave's Rep. Zuñi & Col. Riv., 1853, 130, 146.

Pituophis bellona, Baird & Girard, Cat. N. A. Rept., pt. i, Serp., 1853, 66, 157.

Pityophis bellona, Kennicott *apud* Bd., P. R. R. Rep., x, 1859, 42.—Bd., P. R. R. Rep., x, 1859, 19.—Kennicott *apud* Bd., U. S. & Mex. Bound. Surv., ii, Rept., 1859, 18.—Cope, Proc. Acad. Nat. Sci. Phila., 1866, 305.—Allen, Proc. Bost. Soc. Nat. Hist., xvii, 1874, 69.

Pityophis sayi, Schlegel, var. *bellona*, Baird & Girard, Cope, Check-List N. A. Batrach. & Rept., 1875, 30.

Hab.—Sonoran and Pacific Subregions, with Nevada and Utah.

Abundant throughout the regions visited. A full *suite* of specimens secured, showing great diversity of coloration and variability of head shields, as alluded to by Professor Cope (Proc. Acad. Nat. Sci. Phila., 1866, 305).

No.	Locality.	Date.	Collector.
J	Provo, Utah	July, 1872	Dr. H. C. Yarrow and H. W. Henshaw.
203	Pyrmont, Nev	Aug., 1872	Dr. H. C. Yarrow.
204	..... do	..... do	Do.
E	Snake Creek, Nev	..... do	Do.
193	Rush Lake, Utah	Sept., 1872	H. W. Henshaw.
C	Fillmore, Utah	..... do	Dr. H. C. Yarrow.
C 1	..... do	..... do	Do.
A	Beaver, Utah	..... do	Dr. H. C. Yarrow and H. W. Henshaw.
C O	Fort Wingate, N. Mex	July 20, 1873	H. W. Henshaw.
E 7	Gila River, N. Mex	Aug., 1873	Dr. C. G. Newberry.
951	Fort Bayard, N. Mex	Oct. 22, 1873	H. W. Henshaw.
123	Willow Spring, Ariz	July, 1874	Dr. J. T. Rothrock.
55	Colorado Chiquito, N. Mex	..... do	H. W. Henshaw.
58	New Mexico	..... do	Do.
364	Pagosa, Colo	Sept., 1874	Dr. H. C. Yarrow and C. E. Aiken.
280	..... do	..... do	C. E. Aiken.
365	..... do	..... do	D. Mears.
W 1	..... do	..... do	Lieut. C. W. Whipple.

PITYOPHIS ELEGANS, Kennicott.

Arizona elegans, KENNICOTT, U. S. & Mex. Bound. Surv., ii, Rept., 1859, 18.—BD., P. R. R. Rep., x, 1859, 42, pl. xiii.—KENNICOTT *apud* BD., U. S. & Mex. Bound. Surv., ii, 1859, pl. xiii.

Pityophis elegans, COPE, Check-List N. A. Batrach. & Rept., 1875, 39.

HAB.—Sonoran Region.

Not nearly so abundant as the preceding species.

No.	Locality.	Date.	Collector.
R 4 A	Southeastern Arizona	Oct., 1873	H. W. Henshaw.
1200	Southern Arizona	Oct., 1874	Do.

Genus BASCANIUM, Baird & Girard.

BASCANIUM CONSTRICTOR, Linn., subspecies VETUSTUM, Baird & Girard.

Coluber flaviventris, SAY, Long's Exped. Rocky Mts., ii, 1823, 185.

Bascanion flaviventris, BAIRD & GIRARD, Cat. N. A., Rept., pt. i, Serp., Jan., 1853, 96.—BD., U. S. & Mex. Bound. Surv., ii, Rept., 1859, 20.

Coryphodon flaviventris, HALLOW., Proc. Acad. Nat. Sci. Phila., Oct., 1856, 241.

Bascanion vestutus, BAIRD & GIRARD, Cat. N. A., Rept., pt. i, Serp., 1853, 97.—GIRARD, Herp. U. S. Exp. Exped., 1858, 127.—COOPER, P. R. R. Rep., xii, pt. ii, 1860, 301.

Bascanium constrictor, LINN., subspecies *vestutum*, BAIRD & GIRARD.—COPE, Check-List N. A. Batrach. & Rept., 1875, 40.

HAB.—Pacific Region.

The only species of the former genus *Bascanium* met with in Utah in 1872, although we were informed that *B. constrictor* had been observed. This serpent is entitled "Blue Chaser" by the settlers, and appears to be dreaded, for what reason we were unable to ascertain.

Quite common.

No.	Locality.	Date.	Collector.
31	Provo, Utah	July, 1872	Dr. H. C. Yarrow and H. W. Henshaw.
262	Pueblo, Colo	July, 1874	C. E. Aiken.
2360	Tierra Amarilla, N. Mex	Sept., 1874	Prof. E. D. Cope.

BASCANIUM FLAGELLIFORME, Catesby, subspecies TESTACEUM, Say.

Coluber testaceus, SAY, Long's Exped. Rocky Mts., ii, 1823, 48.—HARLAN, Jour. Acad. Nat. Sci. Phila., v, 1827, 348.—HOLBROOK, N. A. Herp., iii, 1842, 63.—HARLAN, Med. & Phys. Res., 1835, 113.

Masticophis testaceus, BAIRD & GIRARD, U. S. & Mex. Bound. Surv., ii, Rept., 1859, 20.—BD., P. R. R. Rep., x, 1859, 43.—COPE, Proc. Acad. Nat. Sci. Phila., 1866, 305.

Drymobius testaceus, COPE, Proc. Acad. Nat. Sci. Phila., 1860, 561.

Psammophis flavigularis, HALLOW., Proc. Acad. Nat. Sci. Phila., vi, 1852, 178.—*Id.*, Sitgreave's Exp. Zuñi & Col. Riv., 1853, 131–146.

Masticophis flavigularis, BAIRD & GIRARD, Cat. N. A. Rept., pt. i, Serp., 1853, 99, 159.

Herpetodryas flavigularis, HALLOW., P. R. R. Rep., x, 1859, 12.

Bascanium flagelliforme, CATESBY, subspecies *testaceum*, SAY, COPE, Check-List N. A. Batrach. & Rept., 1875, 40.

HAB.—Lower Californian and Sonoran Regions, with Nevada, Utah, and Texas.

Very abundant in regions visited, and particularly noticeable on account of diversity and mimicry of color, depending in a marked degree upon the character of locality where found.

No.	Locality.	Date.	Collector.
D 1	Middle Utah	Sept., 1872	H. W. Henshaw.
P	Camp Apache, Ariz	Aug., 1873	Do.
P 1	..... do	.... do	Do.
277	Pueblo, Colo	July, 1874	Dr. H. C. Yarrow.
L 7	New Mexico	Sept., 1874	Dr. O. Loew.

BASCANIUM TAENIATUM, Hallow., subspecies LATERALE, Hallow.

Leptophis tæniata, Hallow., Proc. Acad. Nat. Sci. Phila., vi, 1852, 181.—*Id.*, Sitgreave's Exp. Zuñi & Col. Riv., 1853, 133-146.

Masticophis tæniatus, Baird & Girard, Cat. N. A. Rep., pt. i, Serp., 1853, 103.—Bd., P. R. R. Rep., x, 1859, 20, pl. ii.—*Id.*, P. R. R. Rep., 1859, x,—Coop. & Suckl., Nat. Hist. Wash. Terr., 1860, 302.—Cope, Proc. Acad. Nat. Sci. Phila., 1866, 305.

Drymobius tæniatus, Cope, Proc. Acad. Nat. Sci. Phila., 1860, 561.

Masticophis schottii, Baird & Girard, Cat. N. A. Rept. pt. i, Serp., 1853, 160.—Bd., U. S. & Mex. Bound. Surv., ii, 1859, 20.—(*Leptophis lateralis*, Hallow., Proc. Acad. Nat. Sci. Phila., 1853, 237, and *Masticophis ornata*, Baird & Girard, Cat. N. A. Serp., should probably be added to this list as a synonym.)

Bascanium tæniatum, Hallow., subspecies *laterale*, Hallow., Cope, Check-List N. A. Batrach. & Rept., 1875, 40.

Hab.—Pacific and Sonoran Regions, Utah, and Nevada.

As numerous as the preceding species, and exhibiting the same peculiarities.

It should be mentioned the last two species were, until very recently, known as *Masticophis;* but Professor Cope, after a careful study of their generic characters has regarded this name as a mere synonym of *Bascanium.*

No.	Locality.	Date.	Collector.
234	Antelope Springs, Nev	Aug. 1, 1872	Dr. H. C. Yarrow.
205	Rush Lake, Utah	Sept., 1872	H. W. Henshaw.
X X X	Cave Spring, Ariz	Sept., 1873	Do.
P P P 2	Southern Arizona	Oct., 1873	Do.
52 A	Nutria, N. Mex.	July, 1874	Do.
737	Camp Grant, Ariz	Sept., 1874	Jas. M. Rutter.
H H	Southern Arizona	Oct., 1874	H. W. Henshaw.

The following genus is a new one erected by Professor Cope to receive a species of serpent found in Arizona. But a single specimen was secured.

Genus CHILOPOMA, Cope.

Teeth subequal; the last one or two on the maxillary bone a little stouter than the others, and separated from them by an interspace; not grooved. Cephalic scuta normal above; one nasal shield and one loreal, which enters the orbital border. Rostral obtuse, with prominent lateral and posterior borders. Scales keeled; anal scutum entire; subcaudal scutella divided. General form that of *Eutænia.*

The type of this genus displays a slight tendency to the form of rostral shield seen in *Phimothyra*, while the lateral head shields remind one of *Cyclophis æstivus*. It is, however, more like *Eutænia* in general characters.

CHILOPOMA RUFIPUNCTATUM, Cope, *gen. et. sp. nov.*
PLATE XX, FIG. 1.

Rostral plate turned over on the superior face of the muzzle, and with a truncate posterior border; the transverse extent three times the length. Internasals a little longer than wide; the prefrontals decurved laterally. Nasal long and rather narrow; loreal elongate and with convex superior border. Preocular higher than wide, in contact with frontal. The latter plate elongate and obtuse behind. Parietals elongate, bounding the entire superior postocular behind. Postoculars three; temporals 1–3–3. Eight superior labials, the last very small; the fourth and fifth bounding the orbit below. Nine inferior labials; genecials elongate, the pairs subequal. The head is an elongate oval, narrowed anteriorly, and quite distinct from the neck. The tail is one-fourth the total length. Scales in twenty-one longitudinal rows, all strongly keeled, excepting the first and second on each side; all poreless. Gastrosteges 177; urosteges, entire 4, divided 83.

General color above light-brown, olive-shaded on the head. The anterior half of the body is marked with six rows of small, alternating bright rufous or orange spots, each of which occupies one, and sometimes an adjoining scale. They stand on the first and second, the fifth, and on the eighth rows respectively. On the posterior third of the length, they are wanting, and are indistinct posterior to the middle of the length. The lower surfaces are pale brownish-gray; the base of each gastrostege with blackish markings. Labial plates light; head without spots. There is an inferior preocular higher than long on one side of this specimen.

Total length, .257; to rictus oris, .010; to vent, .195. Diameter of eye, .003; of interocular space, .0035.

This species was found by Mr. H. W. Henshaw in Southern Arizona in 1874.

No.	Locality.	Date.	Collector.
1097	Southern Arizona	Oct., 1874	H. W. Henshaw.

Genus EUTAENIA, Baird and Girard.

A number of changes in the arrangement and nomenclature of the species of this genus have been made by Professor Cope, according to his new check-list; and, for the purpose of comparison, the new arrangement is here given with his permission, as well as his new synopsis.

Synopsis.

I. Lateral stripe on third and fourth rows of scales; rows 19:

A. Scales little or not spotted:

* Dorsal band complete, light-colored:

Tail more than 0.35 of total length; sides pale below lateral line; to $3\frac{1}{4}$ ..... *E. saurita.*

Tail less than 0.33 in length; black lateral band bordered by two rows of black scales ..... *E. faireyi.*

Tail $3\frac{1}{2}$ times or more in total length; light below last line, *E. proxima.*

** Dorsal band incomplete; all the scales keeled ..... *E. sackenii.*

AA. Scales above and below lateral band with quadrate black spots:

† Superior labials 7; 19 series scales ..... *E. radix.*

†† Superior labials 8; 21 rows scales:

Three rows spots on each side on scales; belly cross-lined; a black chevron on neck ..... *E. macrostemma.*

Three rows minute spots not covering scales; no black chevron; lateral band on third row of scales only ..... var. *megalops.*

II. Lateral stripe on second and third rows of scales:

† 21 rows scales; 8 superior labials; one dorsal stripe weak or wanting:

Lateral spots obsolete; no dorsal band. Yellow bands on labials; a black chevron on neck ..... *E. hammondii.*

Lateral spots large, distinct; yellow bands as above .. *E. marciana.*

Lateral spots small; no bands on head; belly variably plumbeous, *E. vagrans.*

Muzzle a little longer (type nearly black) .... subsp. *angustirostris.*

A broad dorsal band; no spots; no yellow band or chevron; sides black to orbit ..... *E. elegans.*

†† 19 rows scales; 8 superior labials:

Head short; eye large; two rows black lateral spots; a huge nuchal spot; spots below lateral band ..... *E. cyrtopsis.*

Dorsal band not bordered, bands from eye; head narrower, no bands from eye; lateral band indistinct; dorsal bordered, *E. sirtalis* subsp. *dorsalis.*

††† 19 rows scales; 7 superior labials:

Two series of spots between vertebral and lateral bands; no light band on head; belly green; lateral band little defined below, *E. sirtalis.*

No dorsal band; spots scarcely visible on scales; lateral indistinct, subsp. *ordinatus.*

a. Dorsal band:

Spots all distinct ..... subsp. *sirtalis.*

Spots obscure; space between bands uniform brown, subsp. *obscura.*

Spots large; of superior row united, forming a broad black band, subsp. *parietalis.*

Spots small; a narrow line connecting superiors as border of band ..... subsp. *dorsalis.*

Spots confluent into a dark band:

A lateral band (ac.) ..... subsp. *pickeringii.*

No lateral band ..... subsp. *pickeringii.*

Spots minute; a black band on each side dorsal, and black band on fourth and fifth lateral rows ..... subsp. *tetratænia.*

†††† Scales 17 rows:

Labials 7; two rows of spots distinct; none below the faint lateral ..... *E. cooperii.*

Black, with a broad yellow dorsal band only ..... *E. atrata.*

To assist in a proper recognition of the many species of this genus, the following synoptic table is added:

"A.—*Lateral stripe on third and fourth row of scales; dorsal rows* 19.

"* *Body very slender, elongated; tail very long.*

"*E. saurita*, B. and G.—Very slender; color above light-chocolate;

three stripes of uniform yellow; below the lateral stripes light-brown; abdomen greenish-white; average length of tail more than one-third total length.

"*E. sackenii*, Kennicott, Proc. Acad. Nat. Sci., 1859, 98.—Very slender; tail one-third total length; crown more elevated and convex anteriorly than in *E. saurita*. Olive-black above, not lighter below the greenish-yellow lateral stripe; very narrow in the third and fourth lateral rows; no dorsal stripe; abdomen uniformly greenish; resembles *E. saurita*, but has no dorsal stripe, simply a trace half an inch behind the head.

"*E. megalops*, Kennicott, Proc. Acad. Nat. Sci. Phila., 1860, 330.—Resembles *E. proxima*, but is shorter and stouter, having shorter tail, which is one-fourth the total length; eye much larger than *E. proxima;* dorsal stripe narrow, covering one and less than two half rows of scales; uniform brownish-ash, with three longitudinal stripes whitish-yellow; head olive-ash.

"*E. faireyi*, B. and G.—Stouter than *E. saurita;* head large; tail less than one-third total length; body above blackish brown, with 3 longitudinal stripes of uniform tint; abdomen greenish-white.

"*E. proxima*, B. and G., Catalogue.—Body stoutest of division; total length about three and a half times that of the tail; black above, 3 longitudinal stripes, the dorsal ochraceous, yellow, or brown; lateral greenish-white or yellow.

"** *Body stouter; tail shorter.*

"*E. flavilabris*, Cope.—Form stout; head short, rounded; occipital regions convex; labials 7–8; temporal plate small; gastrostega 138–148; tail $\frac{1}{5}$ total length. Olive-brown, unspotted; dorsal and lateral stripes yellow; black-bordered tips, chin, and a posteral crescent to near occipitals, with occipital spots golden-yellow; 2 small, black, nuchal spots.—Mexico.

"*E. sumichrastii*, Cope.—Olive-brown, with 4 series of small, black spots and a trace of 2 anteriorly; 8 superior labials, last very small; no black margin on the sixth, or posterior margin of eighth, but a strong, black band from eye across posterior margin of seventh to mouth. Sides of head white, extending upward as two areas margining each occipital; behind each a black nuchal spot, separated by a narrow, white line from its fellow,

and extending over occipital plates and half of frontal; prefrontals transverse.—Mexico.

"*** *Dorsal rows* 21 ; *form stouter.*

"*E. radix*, B. & G.—Stout and compact; head medium, superior labials seven; ground color light olive-green, with 3 longitudinal yellow stripes, and 6 series of distinct black spots; lateral stripe on third and fourth rows not well defined.

"*E. macrostemma*, Kennicott.—Frontal plate longer than occipital suture; temporal small, margining only anterior part of penultimate labial; post-genеials larger than pre-genеials; superior labials 8; loreal higher than long, olivaceous, with one row of small, black spots below, and two rows above the lateral stripe. Two small, black, nuchal spots and a short post-oral pale crescent.

"B.—*Body stouter; tail shorter; lateral stripe on second and third row of scales.*

"1 *Dorsal rows* 21.

"*E. vagrans*, B. and G.—Frontal plates shorter than common occipital suture; temporal small; superior labials 8; post-genеials equal or shorter than pre-genеials. Ashy, sometimes brown, with narrow, unmarginal stripes, and very small lateral spots in two rows.

"In addition to these species, we have, according to Baird and Girard's catalogue, the following:

"*E. angustirostris*, Kennicott, Proc. Acad. Nat. Sci. Phila., 1860, 332.—Body rather stout; tail less than one-fourth total length, and very small; head more elongated and narrow than any of this genus; snout long, narrow, and pointed; crown place above eye large; dorsal stripe narrow, very indistinct; an indistinct, dull, whitish, lateral stripe on the second and third rows; above lateral stripes dark olive-brown or black; abdomen dark ashy-olive or black.

"*E. ordinoides*, B. and G., Catalogue.—Body stouter than most species; a dorsal and two lateral stripes; on each side two series of black spots, about 80 in number; between the lower series reddish-brown, between the upper olivaceous; extensive row of dorsal scales, the larger carinated; remaining scales nearly equal; caudal carinated.

"*E. hammondii*, Kennicott, Proc. Acad. Nat. Sci. Phila., 1860, 332.—Form slender; head long and narrow posteriorly; snout long, narrow, and obtuse; no dorsal stripe; lateral stripe olive-yellow on second and third rows; back uniform dark olive-brown or blackish, without distinct spots; abdomen whitish olive, lighter anteriorly, and a dark line along the middle posteriorly.

"*E. concinna*, B. and G., Catalogue.—Body stout; head small and reddish-yellow; scales all carinated; above black, with a dorsal, light stripe, and the usual lateral stripes replaced by a series of distinct salmon-colored spots.

"*E. elegans*, B. and G., Catalogue.—Resembles *E. proxima*. Head short and broad; black above, light beneath; a broad, ochraceous, dorsal stripe, with two lateral greenish-white.

"*E. marciana*, B. and G., Catalogue.—Prominent color light-brown; a vertebral paler line, and one lateral on each side, more or less indistinct; 3 series of square black spots on each side, of about 50–60 in each series, from occiput to anus; sides of head black, with a crescentic patch of yellow posterior to the labial plates; 3 and sometimes 4 black vittæ radiating from the eye across the jaws; a double white spot with a black margin on the suture of occipital plates.

"*E. couchii*, Kennicott, vol. x, P. R. R. Rep., 10.—Body moderately stout; tail less than one-fourth total length, and very small; head very long and narrow; dorsal stripe narrow and very indistinct; an indistinct, dull, whitish, lateral stripe on second and third rows. Above dark olive-brown or black; abdomen dark ashy-olive or black.

2. 19 *dorsal rows of scales.*

"*E. phenax*, Cope, Proc. Acad. Nat. Sci. Phila., 1868, 134.—Resembles *E. sirtalis*, but is cross-banded. Head short, muzzle obtuse, eye large; above reddish-olive, crossed by 36 transverse spots, which are bright brownish-red, with a narrow black margin; no lateral stripes; abdomen strong green, unspotted.—Mexico.

"*E. scalaris*, Cope.—Form stout; temporal small, not attaining the reduced last upper labial; superior labials 7; nuchal blotches same color

as head; one series of numerous brown bars connecting the light stripes, none of which are black-edged.—Mexico.

"*E. cyrtopsis*, Kennicott.—Form slender; temporal large, margining the last 3 upper labials, none of which are reduced; superior labials 8 (7); general color brown; large nuchal blotches, and a double series of very small, lateral spots, black; latter forming continuous zigzag on stretched skin; no black margins.

"*E. ornata*, B. and G.—Form slender; tail 3 or $\frac{2}{5}$ in total; head narrow, elongate; loreal longer than high; 4 superior labials, temporal not extending beyond penultimate; above uniform, except on stretched skin, where there is a broad border to dorsal vittæ, and one lateral row of black spots separated by rufous.

"*E. infernalis*, B. and G., Catalogue.—More slender than any species of this section. Head and eye large; above black; a series of about 110 triangular, reddish-yellow spots, confluent with the indistinct lateral stripe, itself confluent with the greenish-white sides and abdomen.

"*E. pickeringii*, B. and G. Catalogue.—Body slender; black above, slate-color beneath; lateral stripe irregular, confluent with the light-colored intervals between the dark spots. This species exhibits great variation of color, principally in regard to black of abdomen.

"*E. leptocephala*, B. and G., Catalogue.—Scales on the greater portion of the tail scarcely carinated. The two exterior dorsal rows on each side unequal, but conspicuously larger than the rest, outer one not carinated; head slender, plain above; orbitals, 3 posterior, 2 anterior; above light olive-brown, with distinct, small, brown spots, 130 in a series; from head to anus beneath pale-greenish slate; little or no indication of a lateral stripe.

"*E. sirtalis*, B. and G., Catalogue.—Body among stoutest of their form; olive-brown, above the lateral stripes sometimes nearly black, beneath them greenish-white; dorsal stripe narrow, encroached upon by the spot; lateral stripes inconspicuous; two or three rows of small, indistinct spots, often not perceptible, especially the lower, about 70 from head to anus.

"*E. dorsalis*, B. and G., Catalogue.—Same size as preceding; outer row of scales emarginate; color olivaceous; dorsal stripe broad, yellow, margined with black; a row of spots above the lateral stripe.

"*E. ordinata*, B. and G., Catalogue.—Resembles *E. sirtalis*, the spotted variety; may be distinguished by the 3 regular series of tesselated, black spots on each side, their prominence, and their number about 85, not 70; olive, with 3 distinct rows of dark square spots, one on each side; lateral stripe wanting; dorsal very indistinct.

"3. *Dorsal rows* 17.

"*E. atrata*, Kennicott, part ii, vol. xii, P. R. R. Rep.—Body moderately stout; head small and narrow; eye very small; a very broad, deep, lemon-yellow, dorsal stripe covering nearly 3 rows, and distinct from head to tip of tail; the rest of the upper parts entirely deep, the black without a trace of the lateral stripe, or of light spots; abdomen uniform greenish slate; yellowish green under the head.

"*E. cooperi*, Kennicott, *loc. cit.*—Body stout, as in *E. radix*; head short, depressed anteriorly; above uniform blackish brown, without, spots or olivaceous brown, with two rows of black spots, as in *E. vagrans*, but which do not encroach upon the stripes; dorsal stripes yellowish, distinct on one or two half rows; lateral stripe usually distinct; abdomen slate color, sometimes lighter, frequently tinged with red.

EUTAENIA VAGRANS, Baird & Girard, subspecies VAGRANS, Baird & Girard.

Eutænia vagrans, Baird & Girard, Cat. N. A. Serp., 1853, 35.—Girard, Herp. U. S. Exp. Exped., 1858, 154.—Bd., P. R. R. Rep., x, 1859, 19.—Coop. & Suckl., Nat. Hist. Wash. Terr., 1860, 297.—Cope, Proc. Acad. Nat. Sci. Phila., 1866, 305–307.

Eutaenia vagrans subspecies *vagrans*, Baird & Girard, Cope, Check-List N. A. Batrach. & Rept., 1875, 41.

Hab.—Central Pacific and northern parts of Sonoran Regions.

The most abundant species inhabiting the Western States and Territories; exhibiting, also, great diversity of coloration. The differences in some of the specimens captured, such as variation in number of side spots, head shields, &c., might almost entitle them to be classed as subspecies.

The specimen in the list marked E has on the right side three postorbitals, on the left four.

No.	Locality.	Date.	Collector.
I	Provo, Utah	July, 1872	Dr. H. C. Yarrow and H. W. Henshaw.
F	do	do	Do.
K	do	do	Do.
192	Willow Spring, Utah	Aug., 1872	Do.
202	Pyrmont, Nev	do	Dr. H. C. Yarrow.
214	Snake Valley, Nev	do	Do.
F 1	Rush Lake, Utah	Sept., 1872	H. W. Henshaw.
F 2	do	do	Do.
F 3	do	do	Do.
F 4	do	do	Do.
F 5	do	do	Do.
F 6	do	do	Do.
189	do	do	Do.
189 A	do	do	Do.
189 B	do	do	Do.
187	Camp Beaver, Utah	do	Dr. H. C. Yarrow and H. W. Henshaw.
B	do	do	Do.
B 1	do	do	Do.
B 2	do	do	Do.
294	do	do	Do.
312	North Creek, Utah	do	Do.
312 A	do	do	Do.
12	Willow Springs, N. Mex	June 28, 1873	Dr. C. G. Newberry.
501 A	Pescao, N. Mex	July 24, 1873	H. W. Henshaw.
526	Camp Apache, Ariz	Aug. 14, 1873	Do.
67 jun.	Mineral Springs, Ariz	Aug., 1873	Dr. C. G. Newberry.
52 A	Nutria, N. Mex	do	H. W. Henshaw.
52 A 1	do	do	Do.
D	Twin Lakes, Colo	do	Dr. J. T. Rothrock.
B	do	do	Do.
D 1	do	do	Do.
E	do	do	Do.
C	do	do	Do.
A A	do	do	Do.
A X	do	do	Do.
197 C	San Luis Valley, Colo	Sept., 1873	Do.
197 B	do	do	Do.
1 L 4	New Mexico	Aug., 1874	Dr. O. Loew.
108	Taos, N. Mex	do	Dr. H. C. Yarrow.
102	do	do	Do.
123	do	do	Do.
112	do	do	Do.
124	do	do	Do.
117	do	do	Do.
119	do	do	Do.
A 153	do	do	Do.
127	San Ildefonso, N. Mex	do	Do.

No.	Locality.	Date.	Collector.
208	Conejos, Colo	Aug., 1874	A. Barnes.
L 47	Sierra Blanca, N. Mex	Sept., 1874	Dr. O. Loew.
207 A	Pagosa, Colo	do	C. E. Aiken.
B 1	do	do	A. Barnes.
383	San Juan River, N. Mex	do	Lieut. R. Birnie.

This species is chiefly characteristic of the Central region, but occurs in Utah and Arizona, chiefly in the mountains. In our progress southward, in the valley of the Rio Grande, the last specimens were seen at Taos on the north side of the Picoris Mountains. On the south side of that range, the *Eutænia marciana* appeared for the first time. Here also I saw the first specimens of *Crotaphytus collaris*, although it extends north of that latitude on the east side of the Sangre de Cristo Mountains. The *Cnemidophorus tessellatus* began to be abundant in the valley of Taos. The third species of *Eutænia*, the *E. ornata*, began to appear in numbers at San Ildefonso, further south. This is a particularly graceful species, with elegant coloration; the clear olive is varied on each side by alternating quadrate red spots in two rows, and the dorsal band has a black border. It does not reach so large a size as the *E. marciana*, which also exceeds the *E. vagrans*. Although these species exhibit identical scale-formulæ, they are quite distinct in life, so that no person can confuse them. And although the *E. vagrans* is rather variable, the *E. ornata* and *E. marciana* maintain their characters in the region of country where they came under observation. The *E. cyrtopsis* was not seen.

EUTAENIA ORNATA, Baird.

Eutainia parietalis, Say, Baird & Girard, Cat. N. A. Rept., pt. i, Serp., 1853, 28.
Eutænia ornata, Bd., U. S. & Mex. Bound. Surv., ii, 1859, Rept., 16.—Cope, Proc. Acad. Nat. Sci. Phila., 1866, 305–306.—Check-List N. A. Batrach. & Rept., 1875, 41.

Hab.—Valley of the Rio Grande del Norte.

This species was found tolerably common in Utah in 1872, but, curiously enough, has not since been collected by the expedition, until 1874,

when it was found to be very common in New Mexico. On dry, sandy ground, color is much fainter than in more moist localities.

No.	Locality.	Date.	Collector.
59	Provo, Utah	July, 1872	Dr. H. C. Yarrow and H. W. Henshaw.
65	do	do	Do.
(?)	do	do	Do.
(?)	do	do	Do.
G	Rush Lake, Utah	Sept., 1872	H. W. Henshaw.
L 52	Abiquiu, N. Mex	Aug., 1874	Dr. O. Loew.
1 L 52	do	do	Do.
2 L 52	do	do	Do.
3 L 52	do	do	Do.
Y Y 1	San Ildefonso, N. Mex	do	Dr. H. C. Yarrow.
176	do	do	Do.
176 A	do	do	Do.
1319	do	do	W. G. Shedd.
A 300	do	do	Dr. H. C. Yarrow.
166 D	do	do	Prof. E. D. Cope, Dr. H. C. Yarrow, and W. G. Shedd.

EUTAENIA SIRTALIS, Linn., subspecies DORSALIS, Baird & Girard.

Eutænia dorsalis, Baird & Girard, Cat. N. A. Serp., 1853, 31.—Bd., P. R. R. Rep., x, 1859, 40.

Eutænia sirtalis, Linn., subspecies *dorsalis*, Baird & Girard, Cope, Check-List N. A. Batrach. & Rept., 1875, 41.

Hab.—Entire North America.

The specimens hereinafter enumerated closely resemble *E. dorsalis*, but have eight upper labial plates, and no black borders to dorsal vittæ; the lateral vittæ indistinct. Not abundant, but two specimens being secured.

No.	Locality.	Date.	Collector.
313	Rio Grande, Colo	June, 1873	H. W. Henshaw.
313 A	do	do	Do.

EUTAENIA VAGRANS, Baird & Girard, subspecies ANGUSTIROSTRIS, Kenn.

Apparently rare; only one specimen being taken in Western Arizona in 1871 by Mr. F. Bischoff. Differs from *E. vagrans* in being uniform black

above, with only a trace of the lateral band in front, and having a red throat.

EUTAENIA MARCIANA, Baird & Girard.

Eutaenia marciana, BAIRD & GIRARD, Cat. N. A. Rept., pt. i, Serp., 1853, 36.—BD., U. S. & Mex. Bound. Surv., ii, Reptiles, 1855, 17.—COPE, Check-List N. A. Batrach. & Rept., 1875, 41.

HAB.—Arkansas, Texas, and entire Rio Grande Valley.

This beautiful species was found to be exceedingly abundant in the valley of the Rio Grande in New Mexico. When taken, it discharges from the small glands situated near the anus a secretion of a peculiarly unpleasant odor, and this fact has also been noticed in regard to all the serpents of this genus.

No.	Locality.	Date.	Collector.
Y Y	San Ildefonso, N. Mex	Aug., 1874	Dr. H. C. Yarrow.
1 L 5	Abiquiu, N. Mex	do	Dr. O. Loew.
2 L 5	do	do	Do.
3 L 5	do	do	Do.
109	Taos, N. Mex	do	Dr. H. C. Yarrow.
L 53	New Mexico	Sept., 1874	Dr. O. Loew.
362 E	Pueblo, Colo	Oct, 1874	C. E. Aiken.
362 E 1	do	do	Do.

Genus HETERODON, Beauvois.

HETERODON SIMUS, Linn., subspecies NASICUS, Baird & Girard.

Heterodon nasicus, BAIRD & GIRARD, Stans. Rep. Exp. Great Salt Lake, 1852, 352.—*Id.*, Marcy's Rep. Exp. Red Riv., 1852, 208.—*Id.*, Cat. N. A. Rept., pt. i, Serp., 1853, 61–157.—HALLOW., Sitgreave's Rep. Zuñi & Col. Riv., 1853, 147.—*Id.*, Proc. Acad. Nat. Sci. Phila., 1856, 249.—BD., P. R. R. Rep., x, 1859, 41.—*Id.*, U. S. & Mex. Bound. Surv., ii, Rept., 1859, 18.—HAYD., Trans. Am. Phil. Soc., xii, 1862, 177.—COPE, Proc. Acad. Nat. Sci. Phila., 1866, 307.—ALLEN, Proc. Bost. Soc. Nat. Hist., xvii, 1874, 69.

Heterodon simus LINN., subspecies *nasicus*, BAIRD & GIRARD, COPE, Check-List N. A. Batrach. & Rept., 1875, 43.

HAB.—Sonoran and Central Subregions and Texas.

Very common, and greatly dreaded by the settlers in the West, who call them "Sand Vipers", notwithstanding they are entirely harmless. One specimen taken of unusually large size.

No.	Locality.	Date.	Collector.
66	Denver, Colo	May 11, 1873	H. W. Henshaw.
A N 5	..... do	June 11, 1873	Dr. J. T. Rothrock.
P O 1	Mineral Springs, Ariz	Aug. 4, 1873	Dr. C. G. Newberry.
M 5	Southern Arizona	—, 1873	H. W. Henshaw.
M 5, 1	..... do	—, 1873	Do.
178	Pueblo, Colo	July, 1874	Prof. E. D. Cope.
2 L 14	New Mexico	Aug., 1874	Dr. O. Loew.
S 2	San Ildefonso, N. Mex	..... do	Prof. E. D. Cope and Dr. H. C. Yarrow.
233	Santa Clara, N. Mex	Sept., 1874	Dr. H. C. Yarrow.
L 8	Abiquiu, N. Mex	..... do	Dr. O. Loew.
H H 1	Southern Arizona	Oct., 1874	H. W. Henshaw.

LACERTILIA.

PLEURODONTA.

LEPTOGLOSSA.

Fam. SCINCIDAE.

Genus EUMECES, Wiegmann.

EUMECES OBSOLETUS, Baird & Girard.

Plestiodon obsoletum, Baird & Girard, Proc. Acad. Nat. Sci. Phila., 1852, 129.—Hallow., Sitgreave's Exp. Zuñi & Col. Riv., 1853, 111.

Plestiodon obsoletus, Bd., U. S. & Mex. Bound. Surv., ii, 1859, Rept., 25.—*Id.*, P. R. R. Rep., x, 1859, 39.

Plistodon obsoletus, Cope, Proc. Acad. Nat. Sci. Phila., 1866, 304.

Eumeces obsoletus, Cope, Check-List N. A. Batrach. & Rept., 1875, 45.

Hab.—Sonoran Region, and borders of Central and Austroriparian.

Rather uncommon in Arizona, New Mexico, Colorado, and Utah.

EUMECES GUTTULATUS, Hallow.

Lamprosaurus guttulatus, Hallow., Proc. Acad. Nat. Sci. Phila., 1852, 206.—*Id.*, Sitgreave's Exp. Zuñi & Col. Riv., 1853, 43.

Plestiodon guttulatus, Hallow., Proc. Acad. Nat. Sci. Phila., 1857, 215.—Bd., U. S. & Mex. Bound. Surv., ii, Rept., 1859, 12.—*Id.*, P. R. R. Rep., x, 1859, 18.

Plistodon guttulatus, COPE, Proc. Acad. Nat. Sci. Phila., 1866, 304.
Eumeces guttulatus, COPE, Check-List N. A. Batrach. & Rept., 1875, 45.

HAB.—Sonoran Region and Western Texas.

Tolerably common in regions visited.

No.	Locality.	Date.	Collector.
E 6 A	Gila River, Ariz	Aug., 1873	Dr. C. G. Newberry.
A 142 D	Cave Spring, Ariz	July, 1874	H. W. Henshaw.

FAM. TEIDAE.

Genus CNEMIDOPHORUS, Wiegmann.

CNEMIDOPHORUS SEX-LINEATUS, Linn.

Cnemidophorus sex-lineatus, LINN., Syst. Nat, 1766.—COPE, Check-List N. A. Batrach. & Rept., 1875, 45.
Ameiva sex-lineata, HOLBROOK, N. A. Herp., ii, 1842, 109.—DE KAY, Zoöl. N. Y., 1842, 30.
Cnemidophorus gularis, BAIRD & GIRARD, Proc. Acad. Nat. Sci. Phila., vi, 1852, 128.—*Id.*, Marcy's Rep. Red Riv., 1852, 227.—BD., U. S. & Mex. Bound. Surv., ii, Rept., 1859, 11.—*Id.*, P. R. R. Rep., x, 1859, 38.
Cnemidophorus guttatus, HALLOW., Proc. Acad. Nat. Sci. Phila., 1854, 192.—*Id.*, P. R. R. Rep., x, 1859, 23.
Cnemidophorus sex lineatus var. *gularis*, COPE, Proc. Acad. Nat. Sci. Phila., 1866, 303.

HAB.—Sonoran and Austroriparian Regions to Southeastern Virginia.

In 1871, this species was observed to be quite common in Nevada, and a number were secured. In the following year, they were also observed in Utah, and, in 1873 and 1874, were found exceedingly abundant in Arizona and New Mexico, but were hard to catch, running with the greatest celerity over the sand and rocks. It is not at all arboreal in its habits. Dr. Coues mentions that, finding it impossible to capture them in the ordinary manner, he used a small load of shot in a horse-pistol. They can readily be taken with an ordinary butterfly-net.

No.	Locality.	Date.	Collector.
5 A 1	Colorado Chiquito, Ariz	July, 1873	Dr. C. G. Newberry.
5 A 2	do	do	Do.
528	White Mountains, Ariz	Aug., 1873	H. W. Henshaw.
528 A	do	do	Do.
A 151	Camp Apache, Ariz	do	Do.
656 A	do	do	Dr. O. Loew.
1106	Santa Fé, N. Mex	June, 1874	H. W. Henshaw.
B 153	Plaza del Alcalde, N. Mex	Aug., 1874	Dr. H. C. Yarrow.
1193	Camp Bowie, Ariz	do	H. W. Henshaw.
736 A	Camp Grant, Ariz	Sept., 1874	Jas. M. Rutter.
736 B	do	do	Do.
J 3	Abiquiu to Jemez, N. Mex	do	G. Thompson.
A 1014 A	Camp Lowell, Ariz	Oct., 1874	Jas. M. Rutter.

CNEMIDOPHORUS OCTO-LINEATUS, Bd.

Cnemidophorus octo-lineatus, Bd., Proc. Acad. Nat. Sci. Phila., ii, 1858, 255.—*Id.*, U. S. & Mex. Bound. Surv. ii, Reptiles, 1859, 10.—Cope, Check List N. A. Batrach. & Rept., 1875, 45.

Hab.—Southern Sonoran Subregion.

First described from Pesquiera Grande, Nuevo Leon. Is seldom found in New Mexico. Resembles *C. inornatus*, but has eight equidistant light lines running down back.

No.	Locality.	Date.	Collector.
3 Y	San Ildefonso, N. Mex	Aug., 1874	Dr. H. C. Yarrow.

In our collection of 1874, there is a species of *Cnemidophorus* (No. B L 65) resembling *C. sex-lineatus* in every particular, but with the peculiarity of seven dorsal stripes instead of six.

DIPLOGLOSSA.

Fam. GERRHONOTIDAE.

Genus GERRHONOTUS, Wiegmann.

GERRHONOTUS NOBILIS, Baird & Girard.

Elegaria nobilis, Baird & Girard, Proc. Acad. Nat. Sci. Phila., 1852, 129.
Gerrhonotus nobilis, Bd., U. S. & Mex. Bound. Surv., ii, Rept., 1859, 2.—Cope, Check List N. A. Batrach. & Rept., 1875, 46.

Hab.—Sonoran Region.

Apparently rare in Arizona; only one specimen having been secured in 1873.

No.	Locality.	Date.	Collector.
145	Ralston, Ariz.	Nov., 1873	Dr. C. G. Newberry.

It may be mentioned, as a matter of some interest, that during the expeditions of 1871, 1872, and 1873, the lizard described as *Euphryne obesa*, a herbivorous one, by Professor Baird (Proc. Acad. Nat. Sci. Phila., 1858), was not met with, although we have probably evidence that it exists in considerable numbers in Utah and New Mexico. It is said to be abundant, according to Baird, in the cañons of Colorado, and was taken at Fort Yuma by Major Thomas, of the United States and Mexican boundary survey; but as yet we have failed to secure a specimen.

During the field season of 1872, the attention of Mr. Henshaw and myself was attracted to the occurrence of curious resinous looking deposits on the almost vertical cliffs of certain rocks in Southern Utah, many feet above the valley. A considerable portion was collected, and from its appearance we judged it to be a conglomerated mass of bat excrement.

In 1873, Dr. Oscar Loew, chemist of the expedition, discovered the same kind of deposit in a forest of juniper, within a rocky fissure, in the Territory of Colorado. He also supposed it to be the excrement of mammals; but, after a careful examination, the substance was found to be the excrement of herbivorous lizards, and as the only ones known to inhabit the region visited is the *Euphryne obesa*, Baird, it is probably from this one.

Dr. Loew's statement is here given:

"*Observations on a peculiar and unique animal excretion.*

"In Utah, Colorado, and New Mexico, there are frequently found black masses of resinous appearance, attached to rocks in positions which mammals, except bats, could not attain. These lumps vary in size from three to six inches in thickness. Distributed through the mass are always to be seen small pieces of feces, resembling greatly the dung of mice or bats, though much larger than the latter. These small masses, however, contain no ani-

mal or insect remains; being exclusively composed of vegetable matter, consisting chiefly of the cellular tissue of plants; and no traces of animal diet, like the undigested legs or wings of insects, can be detected, which fact leads to the supposition that neither bats nor mice could have made the deposit. The mass is brittle, sticky when moistened with water, swells up at a high temperature, and burns with a smoky flame. Heated in a tube, ammoniacal vapors are evolved, an empyreumatic substance is formed, and a voluminous charcoal remains.

"This substance contains—

"Hygroscopic moisture	7.25
"Organic matter	66.32
"Ash	26.43

"In one hundred parts of ashes were found—

"Sulphates, phosphates, chlorides, and carbonates of potassium and sodium	15.46
"Carbonate and phosphate of lime and magnesia, oxide of iron	66.54
"Insoluble in hydrochloric acid, principally fine sand	18.06

"NOTE.—The carbonic acid of the carbonates was produced by the incineration of the organic matter.

"As lithia had been so often found by me in soils and ashes of plants, I thought it worth while to make a spectroscopic test for it. The result was negative. The organic matter is partially soluble in water, less so in alcohol; the aqueous solution having a neutral reaction. Upon boiling it, a very disagreeable odor is evolved, resembling that of earth mold and guano; the taste of this solution is intensely bitter. A portion (*a*) was treated with a considerable quantity of boiling water, and the filtrate evaporated; the evaporated residue treated with a little alcohol, and a small portion of it was dissolved. This gave, after evaporation and treatment with nitric acid, the characteristic crystals of urea. The undissolved portion was treated with a small quantity of water, when a substance remained easily soluble in hydrochloric acid, and precipitated therefrom on the addition of an equal volume of water. The portion separated from this by the treatment with water resembled somewhat a salt of glycocholic acid. The portion of

organic matter that remained entirely insoluble by treatment with a quantity of boiling water (*a*) received an addition of nitric acid, and was then evaporated; the evaporated residue extracted with cold water, when a small quantity of a yellow substance resulted that gave, with nitrate of silver and acetate of copper, the precipitates characteristic of xanthine. The portion undissolved was soluble in ammonia, and on evaporation of this solution there remained a yellow powder, little soluble in water.

"These reactions, as well as the decomposition of the hydrochloric acid solution of the organic matter on addition of water, show the presence of guanine. The murexid reaction for uric acid was very feeble, and tyrosin and leucin were searched for in vain. If the organic matter is treated with cold, concentrated sulphuric acid, a dark, blood-red solution results, the color of which is destroyed if water is added; this and several other reactions are very characteristic of bilious secretions. We have therefore, in this case, a mixture of urinary excretion, bilious secretion, and feces; and in no animals except the *Monotremata* are these products united in the cloaca.

"The question naturally arises: by what animals are these peculiar deposits made? always in the same spots, producing a continual increase of the discharged masses into little mounds in localities where, unless furnished with wings, small mammals could not climb; as, for instance, the almost vertical rock cliffs in Southern Utah.

"At the first thought, the idea presents itself that it must be some winged animal that is the cause, perhaps bats; but considering the absence of any signs of animal diet in the masses, and on comparing it with the excrement of bats, this theory becomes untenable, and must be abandoned: not only do the two substances differ in external appearance, but also in chemical composition. The excrements of bats are full of the remains of insects, and contain nothing soluble in water; but we find nothing of the kind in the substance under discussion. Moreover, there are no herbivorous bats in North America so far known; the existing species being natives of South Africa and the East Indies.

"Prof. S. F. Baird, assistant secretary of the Smithsonian Institution, to whom these excreta have been shown, and the chemical examination communicated, supposes them to have been deposited by herbivorous lizards, of

which there are several species in the Western Territories; and from the large size of the excrement scybala, the lizard is probably *Euphryne obesa*, Baird. Notwithstanding it remains a mystery (and if we accept this theory) why these deposits should be continuously added to!"

It is hoped that more careful observation will enable us at some not far distant day to solve this interesting problem.

(Note by Dr. Yarrow.)—As already stated (if the theory be a correct one), it is very singular that no individuals of this species of lizard were discovered; but our researches may perhaps reveal their existence later. The specimens of these excreta have been deposited in the National Museum at the Smithsonian Institution.

NOTE.—It may be mentioned that Professor Cope does not accept the theory that lizards produce these masses; believing them to be the excrement of small mammals, such as *Neotoma*.

FAM. HELODERMIDÆ.

Genus HELODERMA, Wiegmann.

HELODERMA SUSPECTUM, Cope.

Heloderma horridum, BD., U. S. & Mex. Bound. Surv., ii, Rept., 1859, 2 (not of Wiegmann).—*Id.*, P. R. R. Rep., x, 1859, 38.—COPE, Proc. Acad. Nat. Sci. Phila., 1866, 303.

Heloderma suspectum, COPE, Proc. Acad. Nat. Sci. Phila., 1869, 5.—*Id.*, Check-List N. A. Batrach. & Rept., 1875, 47.

HAB.—Sonoran Region.

This reptile, called "Gila Monster" by western settlers, is not uncommon in Utah, New Mexico, and Arizona. It is believed to be very poisonous, but such is not the case; for, although it will bite fiercely when irritated, the wound is neither painful nor dangerous. Several specimens were secured in 1871, 1873, and 1874; but, with one exception, all were lost in transit to Washington.

While camped on the Rio Grande near San Ildefonso, N. Mex., in August, 1874, a large lizard, presumably of this species, visited the camp, but was not secured, owing to the fact that its sudden appearance frightened the packer, who supposed it to be an alligator. The Pueblo Indians of this place said they were quite common, and were regarded by the Mexicans as

poisonous; the poison being communicated by the breath as well as by the teeth. This has no foundation in fact.

No.	Locality.	Date.	Collector.
X 4 X	Mount Turnbull, Ariz	Sept. 19, 1873	E. Sommer.

IGUANIA.

Fam. IGUANIDAE.

Genus HOLBROOKIA, Girard.

HOLBROOKIA MACULATA, Girard, subspecies MACULATA, Girard.

Holbrookia maculata, Girard, Proc. Am. Assoc., iv, 1850–51, 201.—*Id.*, Marcy's Rep. Red Riv., 1852, 223.—*Id.*, Stans. Rep. Exp. Great Salt Lake, 1853, 342.—Bd., U. S. & Mex. Bound. Surv., ii, Rept., 1859, 8.—*Id.*, P. R. R. Rep., x, 1859, 18, 38.—Hayd., Trans. Am. Phil. Soc., xii, 1862, 177.—Cope, Proc. Acad. Nat. Sci. Phila., 1866, 313.

Holbrookia maculata, Girard, subspecies *maculata*, Girard, Cope, Check-List N. A. Batrach. & Rept., 1875, 47.

Hab.—Central and Sonoran Subregions.

Very abundant in all the regions visited; but, being much slower in their movements than most other lizards, they are easily captured.

No.	Locality.	Date.	Collector.
66 D	Denver, Colo	May, 1873	H. W. Henshaw.
211	do	June, 1873	Dr. J. T. Rothrock.
211 A	do	do	Do.
36 A	Santa Fé, N. Mex	do	Francis Klett.
R X	Camp Apache, Ariz	July, 1873	Dr. O. Loew.
52	Nutria, N. Mex	do	H. W. Henshaw.
52 A	do	do	Do.
B 7	Santa Fé, N. Mex	June, 1874	Do.
1 B 7	do	do	Do.
B 39	do	do	Dr. J. T. Rothrock and H. W. Henshaw.
142 D	Cave Spring, Ariz	July, 1874	H. W. Henshaw.
A 142 D	do	do	Do.
52 C	Colorado Springs, Colo	do	John Yarrow.
2 Y	San Ildefonso, N. Mex	Aug., 1874	Dr. H. C. Yarrow.
480	Sienega, Ariz	do	Jas. M. Rutter.
A 153	Plaza del Alcalde, N. Mex	do	Dr. H. C. Yarrow.
B 1284	Camp Crittenden, Ariz	do	Jas. M. Rutter.
A L 65	New Mexico	Sept., 1874	Dr. O. Loew.
T 3, 1	Abiquiu to Jemez, N. Mex	do	G. Thompson.
T 1	New Mexico	Oct., 1874	Do.

HOLBROOKIA MACULATA, Girard, subspecies PROPINQUA, Baird & Girard.

Holbrookia propinqua, Baird & Girard, Proc. Acad. Nat. Sci. Phila., vi, 1852, 126.—Bd., U. S. & Mex. Bound. Surv., ii, Rept., 1859, 8.—Cope, Proc. Acad. Nat. Sci. Phila., 1866, 303.

Holbrookia maculata, Girard, subspecies *propinqua*, Baird & Girard, Cope, Check-List N. A. Batrach. & Rept., 1875, 47.

Hab.—Texas, New Mexico, Colorado, and Arizona.

As abundant as the preceding.

No.	Locality.	Date.	Collector.
15 A	Colorado Chiquito, Ariz	July, 1873	Dr. C. G. Newberry.
656	Camp Apache, Ariz	Aug., 1873	Dr. O. Loew.
656 B 31	..... do	.... do	Do.
B 2	Twin Lakes, Colo.	.... do	Dr. J. T. Rothrock.

In the notes regarding the collection of 1871, I find that another representative of this genus was secured, which Professor Cope states to be probably *H. approximans*, Baird and Girard.

HOLBROOKIA TEXANA, Troschel.

Cophosaurus texanus, Troschel, Arch. für Naturg., (for 1850), (published in 1852), 389, tab. vi.

Holbrookia texana, Baird & Girard, Proc. Acad. Nat. Sci. Phila., vi, 1852, 125.—Bd., U. S. & Mex. Bound. Surv., ii, Reptiles, 1859, 8, pl. xxx.—Cope, Proc. Acad. Nat. Sci. Phila., 1866, 303.—*Id.*, Check-List N. A. Batrach. & Rept., 1875, 47.

Hab.—Sonoran Region, Western Texas.

This species is rather rare in New Mexico and Arizona; it resembles *H. maculata* somewhat, but may readily be distinguished from it by its larger size and more elongated tail, as well as by marked other specific differences. Two lateral spots represent the abdominal crescents in the female.

No.	Locality.	Date.	Collector.
151	Camp Apache, Ariz	July, 1874	H. W. Henshaw.

Genus CALLISAURUS, Blainville.

CALLISAURUS DRACONTOIDES, Blainville, subspecies VENTRALIS, Hallow.

Homalosaurus ventralis, Hallow., Proc. Acad. Nat. Sci. Phila., vi, 1852, 179.—*Id.*, Sitgreave's Exp. Zuñi & Col. Riv., 1853, 117.
Callisaurus ventralis, Bd., U. S. & Mex. Bound. Surv., ii, Rept., 1859, 8.
Callisaurus dracontoides, Blainville, subspecies, *ventralis*, Hallow., Cope, Check-List N. A. Batrach. & Rept., 1875, 47.

Hab.—Sonoran Region.

Rather uncommon; but one specimen being secured in 1871 in Arizona.

Genus CROTAPHYTUS, Holbrook.

CROTAPHYTUS COLLARIS, Say.

Agama collaris, Say, Long's Exped. Rocky Mts., ii, 1823, 252.—Harlan, Med. & Phys. Res., 1835, 142.
Crotaphytus collaris, Holbrook, N. A. Herp., ii, 1842, 79.—Baird & Girard, Marcy's Rep. Expl. Red Riv., 1853, 222.—Bd., U. S. & Mex. Bound. Surv., ii, Rept., 1859, 6.—*Id.*, P. R. R. Rep., x, 1859, 19, 38.—Cope, Proc. Acad. Nat. Sci. Phila., 1866, 302.—*Id.*, Check-List N. A. Batrach. & Rept., 1875, 47.

Hab.—Sonoran Region; Central Region to latitude 40°.

This beautiful and interesting species was secured in 1871 in Nevada, and was rather uncommon. In 1872, it was noticed only in the locality named in list of specimens, and is apparently quite scarce. Readily distinguished from *C. wislizenii* by the double band of black, bordered with white, on the sides of the neck. In addition to this, the head in *C. collaris* is wider and shorter, the back scales smaller, and those of the belly larger Femoral pores more conspicuous, and tail shorter.

In 1873, it was found to be very abundant in New Mexico and Arizona, a few being seen in Colorado; and while the allied species *C. wislizenii* is extremely numerous in the more northern Territories, it is very scarce farther south. In 1874, it was found to be in point of abundance the characteristic species of New Mexico.

No.	Locality.	Date.	Collector.
224	Dome Cañon, Nev	Aug., 1872	Dr. H. C. Yarrow.
224 A	do	do	Do.
3	Santa Fé, N. Mex	June, 1873	Dr. C. G. Newberry.
3 A	do	do	Do.
19	Aguaazul, N. Mex	July, 1873	Do.
R 1	Camp Apache, Ariz	Aug., 1873	Do.
X P 3	Colorado	do	Do.
P R	Mineral Springs, Ariz	do	Do.
506	Camp Apache, Ariz	do	Do.
R 8	do	do	Dr. O. Loew.
652	do	do	Do.
R X 1	do	do	Dr. C. G. Newberry.
1236	Santa Fé, N. Mex	July, 1874	H. W. Henshaw.
B 39	do	do	Dr. J. T. Rothrock and H. W. Henshaw.
A 7	do	do	H. W. Henshaw.
300	San Ildefonso, N. Mex	Aug., 1874	Dr. H. C. Yarrow.
84 Y	do	do	Do.
T A 1	New Mexico	Sept., 1874	G. Thompson.

CROTAPHYTUS WISLIZENII, Baird & Girard.

Crotaphytus wislizenii, Baird & Girard, Proc. Acad. Nat. Sci. Phila., 1852, 69.—*Iid.*, Stans. Rep. Exp. Great Salt Lake, 1852, 340.—Bd., U. S. & Mex. Bound. Surv., ii, 1859, Reptiles, 7.—*Id.*, P. R. R. Rep., x, 1859, Gunnison & Beckwith's Route, Reptiles, 17.—*Id.*, P. R. R. Rep., x, 1859, Whipple's Route, Reptiles, 37.—Coop. & Suckl., Nat. Hist. Wash. Terr., 1860, 294.—Cope, Proc. Acad. Nat. Sci. Phila., 1866, 303.—*Id.*, Check-List N. A. Batrach. & Rept., 1875, 48.

Crotaphytus gambeli, Baird & Girard, Proc. Acad. Nat. Sci. Phila., 1852, 126.

Crotaphytus fasciatus, Hallow., Proc. Acad. Nat. Sci. Phila., 1852, 207.—*Id.*, Sitgreave's Exp. Zuñi & Col. Riv., 1853, 115, pl. v.

Crotaphytus (Gambelia) wislizenii, Bd., U. S. & Mex. Bound. Surv., *loc. cit.* in text.

Hab.—Pacific and Sonoran Regions, Nevada, and Utah.

In 1872, found rather scarce in Utah, but numerous in Nevada; the Indians in that State using them as food. For full description of this genus, *vide* Stansbury's Report, page 339. In 1873, but few were observed; none in 1874. Is a more northern species than the preceding.

No.	Locality.	Date.	Collector.
X	Dome Cañon, Nev	Aug., 1872	Dr. H. C. Yarrow.
X 1	do	do	Do.
X 2	do	do	Do.
221	do	do	Do.
221 A	do	do	Do.
221 B	do	do	Do.
221 C	do	do	Do.
223	Antelope Springs, Nev	do	Do.
R	Snake Creek, Nev	do	Do.
R 1	do	do	Do.
R 2	do	do	Do.
R 3	do	do	Do.
265	Meadow Creek, Utah	Sept., 1872	Do.
265 A	do	do	Dr. H. C. Yarrow and H. W. Henshaw.
265 B	do	do	Do.
W	Beaver, Utah	do	Do.
W 1	do	do	Do.
W 2	do	do	Do.

CROTAPHYTUS RETICULATUS, Bd.

Crotaphytus reticulatus, BAIRD, Proc. Acad. Nat. Sci. Phila., 1858, 253.—*Id.*, U. S. & Mex. Bound. Surv., pt. ii, 1859, Reptiles, 6, 7.—COPE, Check-List N. A. Batrach. & Rept., 1875, 48.

HAB.—Western Texas and New Mexico.

This species was first described from specimens procured in Texas (Laredo and Ringgold Barracks). Is more closely allied to *C. collaris* than to *C. wislizenii*. Is thought not to be abundant, but one specimen having been secured by the collectors of the expedition.

No.	Locality.	Date.	Collector.
A 1236	Sante Fé, N. Mex.	July, 1874	H. W. Henshaw.

Genus UTA, Baird & Girard.

The genus *Uta* was established by Baird and Girard upon a number of specimens collected by Captain Stansbury during his expedition to the Great Salt Lake. It bears a close relation to both *Sceloporus* and *Holbrookia*, and is interesting for this reason. The assimilative points and dif-

ferences are very clearly described in Stansbury's report, and afford positive means of identification.

UTA ORNATA, Baird & Girard.

Uta ornata, Baird & Girard, Proc. Acad. Nat. Sci. Phila., 1852, 126.—Bd., U. S. & Mex. Bound. Surv., pt. ii, 1859, Reptiles, 7.—Cope, Check-List N. A. Batrach. & Rept., 1875, 48.

Hab.—Sonoran Region.

A single specimen obtained in 1872 in Middle Utah. In 1873 and 1874, the species was found to be quite numerous in Colorado, Arizona, and New Mexico, frequenting rocky places, and exceedingly hard to catch. Color of throat yellowish-orange, of abdomen white ranging to greenish-olive. The general coloration depends much upon the color of the rock upon which they are found.

The specimens marked XXX and XXX 1 are apparently very closely allied to *U. stansburiana*, B. & G., but vary in some points and may prove to be a new species, or a variety of the one they resemble.

No.	Locality.	Date.	Collector.
8181	Middle Utah	Sept., 1872	Dr. H. C. Yarrow.
505 A	Colorado Chiquito, Ariz	July 21, 1873	H. W. Henshaw.
D D 1	Twin Lakes, Colo	Aug., 1873	Dr. J. T. Rothrock.
D D 1 A	Mineral Springs, Ariz	—, 1873	Francis Klett.
X X X	Camp Apache, Ariz	—, 1873	H. W. Henshaw.
115	Ralston, Ariz	Sept., 1873	Dr. C. G. Newberry.
X X X 1	do	do	Do.
1018 B	San Carlos, Ariz	Oct., 1874	Jas. M. Rutter.
H L	Gila River, Ariz	—, 1874	Dr. O. Loew.
16	(?)	(?)	(?)

UTA STANSBURIANA, Baird & Girard.

Uta stansburiana, Baird & Girard, Proc. Acad. Nat. Sci. Phila., vi, 1852, 69.—*Id.*, Stans. Rep. Exp. Great Salt Lake, 1852, 345, pl. 5, figs. 4, 6.—Bd., U. S. & Mex. Bound. Surv., pt. ii, 1859, Reptiles, 7.—*Id.*, P. R. R. Rep., x, 1859, Whipple's Route, Reptiles, 37.—Cope, Check-List, N. A. Batrach. & Rept., 1875, 48.

Hab.—Pacific, Lower Californian, and Sonoran Regions; Nevada; Utah.

Common in both Utah and Nevada in 1871; but few specimens secured in subsequent years.

No.	Locality.	Date.	Collector.
Z	Dome Cañon, Nev	Aug., 1872	Dr. H. C. Yarrow.
Z 1	..... do	.... do	Do.
E 1	Fillmore, Utah	Sept., 1872	Do.
H 1	Southern Utah	Oct., 1872	Do.
2 S 2	San Ildefonso, N. Mex	Aug., 1874	Prof. E. D. Cope.
241 B	..... do	.... do	Dr. H. C. Yarrow.
234 D	Ticrra Amarilla, N. Mex	Sept., 1874	W. G. Shedd.
141 B	Cave Spring, Ariz.	Oct., 1874	H. W. Henshaw.

UTA SYMMETRICA, Baird.

Uta symmetrica, Bd., Proc. Acad. Nat. Sci. Phila., 1858, 253.—*Id.*, U. S. & Mex. Bound. Surv., pt. ii, 1859, Reptiles, 7.—Cope, Proc. Acad. Nat. Sci. Phila., 1866, 303.

Hab.—Sonoran Subregion.

Abundant in Arizona, and particularly noticeable for mimicry of color dependent upon localities where found.

No.	Locality.	Date.	Collector.
526 A	Camp Apache, Ariz	Aug. 8, 1873	H. W. Henshaw.
P P 3	Southern Arizona	..... do	Do.

Genus SCELOPORUS, Wiegmann.

SCELOPORUS JARROVII, Cope, *sp. nov.*

Plate XXIII, Figs. 2, 2*b*, 2*c*, 2*d*.

Sceloporus jarrovii, Cope, Check-List N. A. Batrach. & Rept., 1875, 48 (no description).

The following description of this beautiful and interesting species is by Prof. E. D. Cope, to whom the specimens were submitted for examination.

"Scales of moderate size, gradually increasing in size from the ventral to the dorsal region, very weakly keeled, and not mucronate above, entire below, except on the pectoral and gular regions, where they bear an apical notch. Thirty transverse series between the interscapular and middle sacral regions. Scales of the superior faces of the limbs keeled. The large transverse supraorbital shields separated from the frontals by one, and from the superciliaries by two, series of scales. Six internasals, five pre-

frontals, two frontals, and on each side posteriorly one fronto-parietal and two parietals. Interparietal large, broad as long. Three longitudinal rows of superior labials; one triangular loreal. Temporals small, keeled; two very large auriculars. Two series of infralabials, the inferior ones short, transverse. Fifteen femoral pores. A short deep sinus on the side of the neck, descending forward. The heel extends to a little beyond the elbow, and the fingers to the groin.

	Millim.
"Total length	177
"Length to vent	89
"Length to posterior border of meatus auditorius	155
"Width of head at border of meatus auditorius	14
"Width of head at nostrils	$2\frac{1}{2}$
"Width of frontal bone	$3\frac{1}{4}$
"Length of hind limb	$51\frac{2}{3}$
"Length of hind foot	$21\frac{1}{2}$
"Length of fore limb	39
"Length of fore foot	14

"The ground color above is a bluish-black, which becomes more distinctly blue on the limbs and sides, extending in a patch over the gular region and along the sides of the abdomen. The chin, middle of abdomen, and tail, median line below, shade from a bluish-green in front to a yellow on the last region. Each scale of the upper surface of the body is marked by a light spot, which was some brilliant shade, probably yellow, in life. Behind the interscapular region and on the tail, they are light-blue; top of head and neck bluish-black, the latter inclosed in a rectangular area, bounded by a light band from each squamosal region. Sides of neck with a broad black collar, bluish-black; the collar with a light posterior border above; the dark color extending over the shoulder, the sides of the head, and the throat.

"A light band above the upper labials, and a parallel one below the inferior labials.

"A very handsome species, allied to the *S. torquatus*, *S. ornatus*, &c., resembling in a slight degree *S. formosus*, but is quite distinct, as the following diagnosis will show.

"The distinctive characters of these species are as follows:

"*S. jarrovii.*—Parietals, 2; scales in vertebral line from occiput to opposite groin, 39. Dorsal scale, all with yellow centers; two light bands on side of neck, the upper from the eye and continuous with the anterior border of the collar, the lower commencing at the muzzle; nape black.

"*S. ornatus.*—Parietal single; scales to opposite groin, 50; above black, with two or more longitudinal rows of irregular light spots; no bands on side of neck; nape spotted.

"Dedicated to Dr. H. C. Yarrow, the surgeon and zoölogist of the expedition for 'Explorations west of the one-hundredth meridian.'"

Is scarce in Arizona; but three specimens being secured.

The plate gives figures of head, vent, and femoral pores and scales of the back.

No.	Locality.	Date.	Collector.
P P P 5	Southern Arizona	—, 1873	H. W. Henshaw.
P P P 5 A	..... do	—, 1873	Do.
1199	..... do	Oct., 1874	Do.

SCELOPORUS TRISTICHUS, Cope, *sp. nov.*

Scales of the head smooth; supraorbitals in only three rows; a median series of transverse plates bounded by a row of small ones internally and externally; frontal divided transversely; interparietal wide as long; parietals undivided; scales in forty rows from head to base of tail, well keeled, and strongly mucronate, a little larger than the lateral, which about equal the ventral; four preauricular free scales; a granular patch behind lateral fold of the neck; when the short hind legs are extended forward, the end of the external toe reaches the axilla; femoral pores sixteen.

Color above olive-brown, with a pale lateral band on each side, separated by seven rows of scales. This space is crossed by undulating black cross bands, which are interrupted in the middle, and pale-bordered behind; a brown band from the eye to the middle of the side, where it is broken into spots; legs and feet black-speckled; blue of the sides well separated below; a subround blackish-blue spot on each side the throat.

This species is about the size of the *S. consobrinus*, which it also resembles in color; but it is quite peculiar in having only three series of supraorbital scales, or only two posteriorly, from the failure of the outer row.

No.	Locality.	Date.	Collector.
4137	Taos, N. Mex	Aug., 1874	W. G. Shedd.

SCELOPORUS SMARAGDINUS, Cope, *sp. nov.*

PLATE XXIV, FIG. 2.

Cephalic plates smooth, the frontal transversely divided, and the supraorbitals in four rows; the latter consist of one series of transverse scuta, separated from the frontal by a complete row of small scales; a row of similar small scales bounds the sharp supraoculars within, and incloses with the large scuta three or two scales of intermediate size; interparietal broad as long; parietal small, subtriangular; scales of back, sides, and tail subequal, strongly keeled, and mucronate; the first named in forty-one rows from head to base of tail in four specimens; abdominal scales smaller, notched. When the hind limb is extended, the longest toe reaches to the orbit. Femoral pores fourteen; five free scuta in front of tympanum. Total length, $0^{m}.200$; length to vent, $0^{m}.085$.

Color bright-green, crossed above by dark blotches, interrupted on the middle line, each half convex backward; blue of sides well separated below; the entire middle portion of the throat blackish-blue.

This species bears much relation in special points to the *S. consobrinus*, B. & G., as in the number of supraorbital and dorsal scales. The outer two supraorbital series are not of equal size, the inner being larger, as in *S. ornatus*, B. & G. The coloration is quite characteristic, and the size exceeds that of any of the *S. consobrinus*.

No.	Locality.	Date.	Collector.
(?)	Beaver, Utah	——, 1872	Dr. H. C. Yarrow.
223	Nevada	——, 1872	Do.
(?)	Dome Cañon, Utah	——, 1872	Do.
(?)	(?)	(?)	(?)

SCELOPORUS POINSETTII, Baird & Girard.

Sceloporus poinsettii, Baird & Girard, Proc. Acad. Nat. Sci. Phila., 1852, 126.—Bd., U. S. & Mex. Bound. Surv., pt. ii, 1859, Reptiles, 5, pl. 29, figs. 1–3.—Cope, Check-List N. A. Batrach. & Rept., 1875, 48.

Hab.—Sonoran Region.

Rather uncommon in Southern Arizona; but three specimens being secured.

No.	Locality.	Date.	Collector.
E 6	Gila River, Ariz	Sept., 1873	Dr. C. G. Newberry.
H 1	Southern Arizona	Oct., 1873	H. W. Henshaw.
H 2	..... do	.... do	Do.

SCELOPORUS UNDULATUS, Harlan, subspecies UNDULATUS, Harlan.

Lacerata undulata, Daudin, Hist. Nat. des Rept., iii, 384.

Stellis undulatus, Latreille, Hist. Rept., ii, 1802, 40.

Lacerta hyacinthina et fasciata, Green, Proc. Acad. Nat. Sci. Phila., i, 349.

Uromastyx, Merrem., 57.

Agama undulata, Harlan, Med. & Phys. Res., 1853, 140.

Tropidolepis undulatus, Cuvier *apud* Griffith, ix, 126.—Holbrook, N. A. Herp., iii, 51, pl. viii, and ii, 73, pl. 9, 2d ed., 1842.—De Kay, Zoöl. N. Y., 1842, 31.—Tenney, Man. Zoöl., 1866, 296.

Sceloporus undulatus, Gravenhorst, Nov. Acta, xviii, 768.—Wiegmann, Isis, 1828, 369.—Bd., P. R. R. Rep., x, 1859, Whipple's Route, Reptiles, 37.

Sceloporus undulatus, Harlan, subspecies *undulatus*, Harlan, Cope, Check-List N. A. Batrach. & Rept., 1875, 48.

Hab.—North America, except Sonoran and Lower Californian Regions.

Found abundant in Nevada; less so in Utah in 1872. Scarce in the more Southern Territories.

A close examination of the specimens captured reveals no points of difference between the eastern and western varieties, excepting a deeper coloration of the lines and bands in the western form. Inhabiting for the most part rocky ground.

No.	Locality.	Date.	Collector.
N	Dome Cañon, Nev	Aug., 1872	Dr. H. C. Yarrow.
N 1	..... do	.... do	Do.
N 2	..... do	.... do	Do.
205	Pyrmont, Nev	.... do	Do.
205 A	..... do	.... do	Do.
205 B	..... do	.... do	Do.
S	Beaver, Utah	Sept., 1872	Do.

SCELOPORUS CONSOBRINUS, Baird & Girard.

Sceloporus consobrinus, BAIRD & GIRARD, Marcy's Exped. Red. Riv., 1853, 224, pl. 10, figs. 5–12.—BD., P. R. R. Rep., x, 1859, Whipple's Route, Reptiles, 37.—*Id.*, U. S. & Mex. Bound. Surv., pt. ii, Reptiles, 5.—HAYD., Trans. Am. Phil. Soc., xii, 1862, 303.—COPE, Proc. Acad. Nat. Sci. Phila., 1866, 303.—ALLEN, Proc. Bost. Soc. Nat. Hist., xvii, 1874, 69.—COPE, Check-List N. A. Batrach. & Rept., 1875, 49.

HAB.—Sonoran and Central Regions, Oregon, and Texas.

Exceedingly abundant throughout regions visited.

In addition to the specimens noted in the list, Professor Cope informs me of a variety found in our collection much like the typical form in squamation, but quite distinct in colors. The sides are very dark, and the dorsal region is yellowish in a broad band from the nape of the neck to the ramp. Professor Cope, in his report upon the reptiles collected by the United States Geological Survey of Territories in Montana, page 468, gives four distinct varieties of *S. consobrinus*, to which list this new variety should be added.

No.	Locality.	Date.	Collector.
O	Fairfield, Utah	Aug., 1872	Dr. H. C. Yarrow.
O 1	do	do	Do.
.....	Eastern Nevada	do	Do.
C	Cove Creek, Utah	Sept., 1872	Do.
445	Fort Wingate, N. Mex	July, 1873	H. W. Henshaw
500	Pescao, N. Mex	do	Do.
500 A	Southern Arizona	do	Do.
R 30	Fort Wingate, N. Mex	Aug., 1873	T. V. Brown.
656 B 2	Camp Apache, Ariz	do	H. W. Henshaw.
626	Southern Arizona	——, 1873	Do.
5 A 2	do	——, 1873	Do.
P P P 6	Camp Apache, Ariz	——, 1873	Do.
7	Santa Fé, N. Mex	June, 1874	Do.
7 A	do	do	Do.
A 248	Pagosa, Colo	Sept., 1874	C. E. Aiken.
398	San Juan River, N. Mex	do	Lieut. R. Birnie.
A T 1	New Mexico	do	G. Thompson.
2 L 8	do	do	Dr. O. Loew.

SCELOPORUS SPINOSUS, Wiegmann.

Sceloporus spinosis, WIEGMANN, Isis, 1828, 369.
Tropidolepis spinosus, GRAY, Syn. Nat. Rept. Griff., An. King., ix, 1831, 43.

Sceloporus spinosus, WIEGMANN, Herp. Mex., 1834, 50, pl. vii.—BD., U. S. & Mex. Bound. Surv., pt. ii, 1859, Rept., 5.—*Id.*, P. R. R. Rep., x, 1853–54, Whipple's Route, 38.—COPE, Check-List N. A. Batrach. & Rept., 1875, 49.

HAB.—Arizona and Texas.

Specimens secured in Arizona in 1871. Is not common.

SCELOPORUS CLARKII, Baird & Girard, subspecies CLARKII, Baird & Girard.

PLATE XXIII, FIGS. 1, 1*a*.

Sceloporus clarkii, BAIRD & GIRARD, Proc. Acad. Nat. Sci. Phila., 1852, 127.—BD., U. S. & Mex. Bound. Surv., pt. ii, 1859, Reptiles, 5.

Sceloporus magister, HALLOW., Proc. Acad. Nat. Sci. Phila., vii, 1854, 93.—COPE, Proc. Acad. Nat. Sci. Phila., 1854, 93.

HAB.—Sonoran and South Pacific Regions.

In addition to the typical *S. clarkii*, obtained by the expedition in 1873, a variety was also collected, which has been described by Professor Cope as follows:

"Scales of the back large, keeled, and mucronate in twenty-eight transverse rows from head shields to rump, and six longitudinal rows at the latter point. Edges without or with one or two serræ near the apex. Abdominal scales smaller; lateral intermediate; the former mostly entire; the gulars with one or two shallow notches. Head shields smooth, large; supraorbitals in one row only of transverse shields, separated only anteriorly from the frontals by a row of narrow scales. Eight internasals, six of them in a median row of three pairs; five prefrontals, one broad and median; two frontals; two fronto-parietals, each joined by a single parietal on each side; an interparietal as broad as long. Auricular scales not different from those in front of them. Hind leg extended, bringing the end of the outer toe to the humerus. Twelve femoral pores on each side.

"Total length, 0^{m}.166; length to vent, 0^{m}.080; to auricular meatus, 0^{m}.019; to orbit, 0^{m}.008; width between supercilia, 0^{m}.012.

"Five or six blackish undulating cross-bands on an iron-gray ground; behind, on an angle of each bar, on each side, is a yellow scale, thus making two rows of small yellow spots. Below straw color; throat brown, banded lengthwise, with blue between. Sides with blue shades."

The plate affords view of the entire animal, and a profile of the head.

No.	Locality.	Date.	Collector.
R 66	Southeastern Arizona	Oct., 1873	E. J. Sommer.
R 67	do	do	Do.
1315	do	(?)	G. M. Keasbey.
176	Rock Cañon, Ariz	Sept., 1874	Jas. M. Rutter.
176 A	do	do	Do.
H 1284	Camp Crittenden, Ariz	Oct., 1874	Do.
508	Santa Rita Mountains, Ariz	do	H. W. Henshaw.

SCELOPORUS GRATIOSUS, Baird & Girard.

Sceloporus graciosus, BAIRD & GIRARD, Proc. Acad. Nat. Sci. Phila., 1852, 69.—*Id.*, Stans. Rep. Exp. Great Salt Lake, 1853, 346, pl. 5, figs. 1–3.—BD., P. R. R. Rep., x, 1859, Gunnison and Beckwith's Route, Reptiles, 17.—*Id.*, *ib.*, Williamson and Abbott's Route, Reptiles, 9.—COOP. & SUCKL., Nat. Hist. Wash. Terr., 1860, 294.—HAYD., Trans. Am. Phil. Soc. Phila., xii, 1862, 177.—COPE, Proc. Acad. Nat. Sci. Phila., 1866, 303.

Some of the specimens have five rows of supraorbital scales as in the type, but with larger scales, there being 45 and 46 instead of 50 from head to tail. Secured by the expedition in Nevada in 1871, in Utah in 1872, and at Abiquiu, N. Mex., in 1874.

No.	Locality.	Date.	Collector.
(?)	Dome Cañon, Utah	—, 1872	Dr. H. C. Yarrow.
L B 5	Abiquiu, N. Mex	Sept., 1874	Dr. O. Loew.

SCELOPORUS GRACILIS, Baird & Girard.

Sceloporus gracilis, BAIRD & GIRARD, Proc. Acad. Nat. Sci. Phila., 1852, 175.—*Id.*, U. S. Exp. Exped., 1858, 386, pl. 20, figs. 1–9.

For description of this interesting lizard, *vide* Stansbury's Report of Expedition to the Great Salt Lake, page 346. It is chronicled as inhabiting the valley of the Great Salt Lake, but was not met with by our party in the locality noted, being seen only on the western border of the House range of mountains, which form the western limit of the valley in extreme Eastern Nevada.

No.	Locality.	Date.	Collector.
Y	Dome Cañon, Nev	Aug., 1872	Dr. H. C. Yarrow.
223	Antelope Springs, Nev	do	Do.

Genus PHRYNOSOMA, Wiegmann.

The collection of Horned Lizards, vulgarly known as "Horned Toads", is very numerous, embracing nearly every species as yet chronicled from the regions visited. Of the *Phrynosoma*, according to Prof. Charles Girard, we may assume that six distinct species exist, for the diagnostic characters of which *vide* Stansbury's Report of Expedition to the Great Salt Lake, page 359; but Professor Cope, in his new check-list, has proposed certain modifications of Girard's diagnoses, and the following list shows the number of species he at present admits;

Phrynosoma modestum, GIRARD.
Phrynosoma platyrhinum, GIRARD.
Phrynosoma macealli, HALLOW.
Phrynosoma regale, GIRARD.
Phrynosoma planiceps, HALLOW.
Phrynosoma cornutum, HARLAN.
Phrynosoma hernandezii, GIRARD.
Phrynosoma douglasii, BELL, subspecies *ornatissimum*, GIRARD.
Phrynosoma douglasii, BELL, subspecies *douglasii*, BELL.
Phrynosoma blainvillei, GRAY.
Phrynosoma coronatum, BLAINVILLE.

PHRYNOSOMA MODESTUM, Girard.

Phrynosoma modestum, GIRARD, Stans. Rep. Exp. Great Salt Lake, 1853, 361, 365, pl. 6, figs. 4–8.—COPE, Proc. Acad. Nat. Sci. Phila., 1866, 302.—*Id.*, Check-List N. A. Batrach. & Rept., 1875, 49.

Doliosaurus modestus, BD., U. S. & Mex. Bound. Surv., pt. ii, 1859, Reptiles, 10.—*Id.*, P. R. R. Rep., x, 1859, Whipple's Route, Reptiles, 38.—GIRARD, Herp. U. S. Exp. Exped. 1858, 409.

HAB.—Sonoran Region.

Rather uncommon in Utah and Arizona; but few being seen.

PHRYNOSOMA PLATYRHINUM, Girard.

Phynosoma platyrhinus, GIRARD, Stans. Rep. Exp. Great Salt Lake, 1853, 361–363, pl. vii, figs. 1–5.—COPE, Proc. Acad. Nat. Sci. Phila., 1866, 302.

Doliosaurus platyrhinus, GIRARD, Herp. U. S. Exp. Exped., 1858, 407.—BD., P. R. R. Rep., x, 1859, Gunnison & Beckwith's Route, Reptiles, 18.

Phrynosoma platyrhinum, COPE, Check-List N. A. Batrach. & Rept., 1875, 49.

HAB.—Utah, Nevada, Arizona, and New Mexico.

Very numerous; abounding everywhere in Utah and Nevada; none secured in more southern localities, although they doubtless are found as far

south as Arizona. Some of the specimens enumerated in the following list assimilate closely to *P. modestum*, Girard, and are hardly distinguishable, while a great variety of coloration exists.

No.	Locality.	Date.	Collector.
221	Dome Cañon, Nev	Aug., 1872	Dr. H. C. Yarrow.
208	Sacramento, Nev	do	Do.
208 A	do	do	Do.
199	Faust's Station, Utah	do	Do.
8	do	do	Do.
8 A	Fairfield, Utah	do	Do.
237	Deseret City, Utah	Sept., 1872	Do.
237 A	do	do	Do.
237 B	do	do	Do.
237 C	do	do	Do.
222	Rush Pond, Utah	do	Do.
222 A	do	do	Dr. H. C. Yarrow and H. W. Henshaw.
U	Beaver, Utah	do	Do.
U 1	do	do	Do.
U 2	do	do	Do.
U 3	do	do	Do.
U 4	do	do	Do.
U 5	do	do	Do.

PHRYNOSOMA REGALE, Girard.

Phrynosoma regale, GIRARD, Herp. U. S. Exp. Exped., 1858, 406.—BD., U. S. & Mex Bound. Surv., pt. ii, Reptiles, 1859, 9, pl. xxviii, figs. 1–3.—COPE, Check-List N. A. Batrach. & Rept., 1875, 49.

HAB.—Deserts of Gila and Colorado.

This large and magnificent species was first chronicled from the valleys of the Gila and Colorado Rivers, where it was taken by Mr. A. Schott; it is by no means abundant.

No.	Locality.	Date.	Collector.
A 1098	Camp Lowell, Ariz	Oct., 1874	Jas. M. Rutter.
B 1098	do	do	Do.
C 1098	do	do	Do.

PHRYNOSOMA PLANICEPS, Hallow.

PLATE XXIV, FIG. 1.

Phrynosoma planiceps, HALLOW., Proc. Acad. Nat. Sci. Phila., 1852, 178.—COPE, Check-List N. A. Batrach. & Rept., 1875, 49.

HAB.—Southern Sonoran Subregion.

As already remarked, this rare and interesting species has been lost sight of since Girard's description was published. It was rediscovered in 1873 in Southeastern Arizona by Mr. Henshaw.

No.	Locality.	Date.	Collector.
R 5	Southeastern Arizona	—, 1873	H. W. Henshaw.
R 5, 1	do	—, 1873	Do.

PHRYNOSOMA CORNUTUM, Harlan.

Phrynosoma cornutum, HARLAN, Jour. Acad. Nat. Sci. Phila., iv, 1825, 299.—GRAY, Syn. Rept. Griff. Cuv., ix, 1831, 45.—GIRARD, Stans. Rep. Exp. Great Salt Lake, 1852, 360, pl. viii, figs. 1–6.—BD., U. S. & Mex. Bound. Surv., pt. ii, Reptiles, 1859, 9.—COPE, Check-List N. A. Batrach. & Rept., 1875, 49.

HAB.—Texas, Arizona, and New Mexico.

This species resembles *P. coronatum* in having a double series of horizontal pyramidal scales on the periphery of the abdomen. Occipital and temporal spines more slender than in *P. coronatum*. Femoral pores inconspicuous, while in *P. coronatum* they are well marked.

This is a southern form, not having been met with north of New Mexico.

No.	Locality.	Date.	Collector.
A 115	Ralston, Ariz	Oct., 1873	Dr. C. G. Newberry.
A 1098	Camp Lowell, Ariz	July, 1874	H. W. Henshaw and Jas. M. Rutter.
1174	Camp Apache, Ariz	July, 1874	Jas. M. Rutter.
1183	Camp Bowie, Ariz	Aug., 1874	Do.
2 Y	San Ildefonso, N. Mex	do	Dr. H. C. Yarrow.
1191	Camp Bowie, Ariz	do	H. W. Henshaw.
L 55	Abiquiu, N. Mex	Sept., 1874	Dr. O. Loew.

PHRYNOSOMA DOUGLASSII, Bell, subspecies DOUGLASSII, Bell.

Agama douglasii, Bell, Trans. Linn. Soc., xvi, 1828 (1833) 105, pl. 10.—Harlan, Med. & Phys. Res., 1835, 141, f. 3.

Phrynosoma douglasii, Gray, Griff. An. King., ix, 1831, 44.—Wagler, Nat. Syst., Amphib., 1830, 146.—Wiegmann, Herp. Mex., 1834, 54.—Holbrook, N. A. Herp., i, 1842, 101, pl. 14.—De Kay, Zoöl. N. Y., 1842, 31.—Gray, Cab. Brit. Mus., 1845, 227.—Girard, Stans. Rep. Exp. Great Salt Lake, 1852, 362, pl. 7, figs. 6–9.—Cope, Proc. Acad. Nat. Sci. Phila., 1866, 302.—Allen, Proc. Bost. Soc. Nat. Hist., xviii, 1874, 69.

Tapaya douglassii, Girard, Herp. U. S. Exp. Exped., 1858, 398, pl. 21, figs. 1–5.—Bd., P. R. R. Rep., x, 1859, Gunnison & Beckwith's Route, Reptiles, 18.—*Id.*, P. R. R. Rep., x, 1859, Williamson and Abbott's Route, Reptiles, 9.—Coop. & Suckl., Nat. Hist. Wash. Terr., 1860, 294.

Phrynosoma douglassii, Bell, subspecies *douglassii*, Bell, Cope, Check-List N. A. Batrach. & Rept., 1875, 49.

Hab.—Entire Central Region, Oregon, and Washington.

In 1872, found to be the most abundant species in Utah; none being discovered in Nevada, although they were found in the eastern portion of that State in 1871; are also abundant in New Mexico and Arizona. The specimens collected are of all sizes, exhibiting every possible variation of color and markings.

No.	Locality.	Date.	Collector.
M	Provo, Utah	July, 1872	Dr. H. C. Yarrow and H. W. Henshaw.
M 1	do	do	Do.
M 2	do	do	Do.
238	Deseret City, Utah	Aug., 1872	Dr. H. C. Yarrow.
238 A	do	do	Do.
238 B	do	do	Do.
238 C	do	do	Do.
238 D	do	do	Do.
V	Beaver, Utah	Sept., 1872	Dr. H. C. Yarrow and H. W. Henshaw.
V 1	do	do	Do.
V 2	do	do	Do.
V 3	do	do	Do.
B 1	Toquerville, Utah	Oct., 1872	Do.
B 2	do	do	Do.
B 3	do	do	Do.
B 4	do	do	Do.
B 5	do	do	Do.

No.	Locality.	Date.	Collector.
R 6	Santa Fé, N. Mex	June, 1873	Dr. O. Loew.
2 A	do	do	Dr. C. G. Newberry.
393 B	Fort Garland, Colo	do	H. W. Henshaw.
418	do	do	Do.
X P	Colorado	July, 1873	Dr. C. G. Newberry.
452 B	Fort Wingate, N. Mex	do	H. W. Henshaw.
452 B 1	Fort Wingate, N. Mex	do	Do.
P 33	Camp Apache, Ariz	Aug., 1873	Do.
A 39	Santa Fé, N. Mex	June, 1874	Dr. J. T. Rothrock and H. W. Henshaw.
1105	do	do	H. W. Henshaw.
Y 9	Colorado Springs, Colo	July, 1874	John Yarrow.
A 51 var.	do	do	Do.
106	Rio Colorado, N. Mex	Aug., 1874	Dr. H. C. Yarrow.
1284	Camp Crittenden, Ariz	do	Jas. M. Rutter.
3 Y	San Ildefonso, N. Mex	do	Dr. H. C. Yarrow.
105	Taos, N. Mex	do	Prof. E. D. Cope, Dr. H. C. Yarrow, and W. G. Shedd.
L 5	Abiquiu, N. Mex	do	Dr. O. Loew.
1275 var.	Camp Lowell, Ariz	do	H. W. Henshaw.
274	Pagosa, Colo	Sept., 1874	Lieut. C. W. Whipple.
L 48	New Mexico	do	Dr. O. Loew.
L 50	do	do	Do.
A 382	San Juan River, N. Mex	do	Lieut. R. Birnie.
235	New Mexico	do	W. G. Shedd.
1014 A	Camp Lowell, Ariz	Oct., 1874	Jas. M. Rutter.

PHRYNOSOMA DOUGLASSII, subspecies ORNATISSIMUM, Girard.

Phrynosoma orbiculare, Hallow., Sitgreave's Exp. Zuñi & Col. Riv., 1853, 125, pls. 8–9 (not of Wiegmann).

Tapaya ornatissima, Girard, Herp. U. S. Exp. Exped., 1858, 396.—Bd., P. R. R. Rep., x, 1859, Whipple's Route, Reptiles, 38.—*Id.*, U. S. & Mex. Bound. Surv., pt. ii, 1859, Reptiles, 9.

Phrynosoma douglasii, subspecies *ornatissimum*, Cope, Check-List N. A. Batrach. & Rept., 1875, 49.

Hab.—Sonoran Region.

This species was not observed in 1871, but in 1872 was collected in Middle Utah in but one locality. Is very abundant in New Mexico and Arizona.

No.	Locality.	Date.	Collector.
267	Cove Creek, Utah	Sept., 1872	Dr. H. C. Yarrow.
267 A	do	do	Do.
267 B	do	do	Do.
267 C	do	do	Do.
267 D	do	do	Do.
569	White Mountains, Ariz	Aug. 24, 1873	Dr. C. G. Newberry.
569 A	do	do	Do.
71	do	do	Do.
62	do	do	Do.
72	do	do	Do.
73	do	do	Do.
655	Camp Apache, Ariz	Aug., 1873	Dr. O. Loew.
655 A	do	do	Do.
176	Rock Cañon, Ariz	Sept., 1874	Jas. M. Rutter.
176 A	do	do	Do.

PHRYNOSOMA BLAINVILLEI, Gray.

Phrynosoma blainvillei, Gray, Syn. Rept. Griff. Cuv., ix, 1831.—Girard, Herp. U. S. Exp. Exped., 1858, 400.—Cope, Check-List N. A. Batrach. & Rept., 1875, 49.

Hab.—Pacific Region.

A number of specimens secured in 1871 in Arizona; not collected since that time.

TESTUDINATA.

Fam. CINOSTERNIDAE.

Genus AROMOCHELYS, Gray.

AROMOCHELYS CARINATUS, Gray.

Aromochelys carinatus, Gray, Cat. Shield Rept. Brit. Mus.—Cope, Proc. Acad. Nat. Sci. Phila., 1866, 310.—*Id.*, Check-List N. A. Batrach. & Rept., 1875, 52.

Ozotheca tristicha, Agass., Contrib. Nat. Hist. U. S., i, 1857, 423, pl. 5, figs. 20–22.—Bd., U. S. & Mex. Bound. Surv., pt. ii, 1859, Reptiles, 3.

Hab.—Louisianian District and Arizona.

Obtained in Arizona in 1871, also in 1873, and appears to be rather common.

No.	Locality.	Date.	Collector.
P P P 7	Southern Arizona	—, 1873	H. W. Henshaw.
145 A	do	—, 1873	E. E. Howell.

Genus CINOSTERNUM, Wagler.

CINOSTERNUM HENRICI, LeConte.

PLATE XVI, FIGS. 1, 2, 3.

Kinosternum henrici, LECONTE, Proc. Acad. Nat. Sci. Phila., 1854, 182.—*Id.*, *ib.*, 1859, 4.—COPE, Check-List N. A. Batrach. & Rept., 1875, 52.

This interesting species was first described from specimens brought from New Mexico by Dr. T. C. Henry, of the United States Army, since which time, so far as is known, it has not been seen until collected by Dr. J. T. Rothrock and H. W. Henshaw, of this expedition in 1874. The locality where the specimens were taken is Rock Creek Cañon, south of Camp Apache, Ariz., and they were secured while fishing in a small stream which runs through the cañon, the animals taking the bait fiercely and freely, appearing to be numerous. It is a matter of some surprise in view of this abundance that the species has not been recognized for so long an interval. The plate affords a view of this species from above and below and in profile.

No.	Locality.	Date.	Collector.
1103	Rock Creek Cañon, Ariz	July, 1874	Dr. J. T. Rothrock and H. W. Henshaw.
1103 A	do	do	Do.

FAM. EMYDIDAE.

Genus CHRYSEMYS, Gray.

CHRYSEMYS OREGONENSIS, Harlan.

Emys oregonensis, HARLAN, Am. Jour. Sci., xxxi, 382.
Chrysemys oregonensis, HOLBROOK, N. A. Herp., i, 1842, 107.—AGASS., Cont., i, 1857, 440.—BD., U. S. & Mex. Bound. Surv., pt. ii, Reptiles, 1859, 4.—COPE, Check-List N. A. Batrach. & Rept., 1875, 53.

HAB.—Central Region.

This species was found to be quite abundant in the same locality as the preceding, and was taken in a similar manner.

No.	Locality.	Date.	Collector.
1103 A B	Rock Creek Cañon, Ariz	July, 1874	Dr. J. T. Rothrock and H. W. Henshaw.

The following summary will show the number of species actually identified; some few still remain unidentified:

Batrachia	17
Ophidia	26
Lacertilia	35
Testudinata	3
Total	87

NOTE.—It has been thought best, in compiling the above report, to enumerate every specimen accurately labeled, so as to give an indication of geographical distribution.