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On three new forms of Rattlesnakes.

BY ROBERT KENNICOTT.

Caudisona lepidia Kennicott.

Spec. char. Head ovoid, tapering to the nose, which is very narrow, pointed and much depressed. Nostril very small, circular and placed near the point of the nose in about the middle of a single nasal. Two elongated frontals in contact, extending behind the nostrils. Superciliaries and other large plates smooth. Rostral sub-triangular, broader than high, the apex turned back slightly upon the crown. Upper pre-orbital small and separated from the post nasal by the width of two larger plates. Labials rather large, 12 above 10—12 below. Color of head yellowish ash.

Two heads of a rattlesnake from Presidio del Norte and Eagle Pass show such remarkable features as to render it justifiable to describe the species from these alone.

The head is much depressed, the general outline ovoid, tapering regularly from about opposite the angle of the mouth to the nose. The crown is remarkably smooth and the occipital scales very faintly carinated. There are two large frontals elongated laterally and posteriorly, with their inner ends in contact. They are convex on their external, and concave on their internal edges, and extend for nearly half their length back of the nostril. Behind and fitting into the emargination formed by these, are two subquadrangular and smaller plates in contact; immediately behind these is another similar pair. On each side of these two last pairs, at the edge of the crown, between the superciliaries and anterior frontals, is a larger plate. The superciliaries are rather small, and, like the other larger plates quite smooth; the space between the superciliaries is narrow, and filled with irregular rather large scales; the posterior part of the crown is also covered with rather large and smooth scales. The pre-orbitals are remarkable; the lower is, as usual, small and elongated over the pit, but the upper, very small and quadrangular, is separated from the nasal by the length of two plates, each larger than itself. In all the other species the upper pre-orbital is large, more or less elongated and in contact with the post nasal or only separated from it by the width of one smaller plate. The sub-orbital chain is complete, and there is only a single row of scales between it and the labials. The color of the head is uniform yellowish or light brownish ash without any distinct spots or stripes, though each plate is minutely mottled with brownish, and with a few scattering large black dots, and there is very faint indication of the usual posterior facial stripe extending over the angle of the mouth.

The body of this species will doubtless exhibit characters as important as those of the head. It will at once be distinguished from *C. molossus* and *C. tigris* by the single nasal, position of pre-orbitals, number and comparative size of labials, and number of rows between the sub-orbitals and labials, and by the narrow pointed nose instead of the broad blunt snout of *C. molossus* and *C. tigris*. It disagrees also with *C. lucifer* in all of the above characters; excepting the size of labials and the narrow nose, and differs widely from that species in the depressed snout, wide rostral, and perfectly smooth plates and scales on the head. By the smoothness and size of the plates, and absence of the horn, it will at once be distinguished from *C. cerastes*. It will be impossible to confound it with any of the eastern species.

Caudisona atrox Cope. Var. Sonoraensis Kennicott.

Specimens from Sonora and vicinity show some permanent differences from the more eastern types; and, though the differences detected as yet are thought too slight to characterize a distinct species, subsequent researches with the aid of better material will very likely prove the western type to be

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specifically different, in which event it may be named *C. Sonoraensis*. In these specimens the crown presents a decidedly smoother appearance, the plates being less corrugated and lying flat upon the crown without the up-turned edges. They are also smaller, less elongated, and more nearly sub-circular. The stripe from the posterior angle of the orbit reaches the upper labials at a point farther back than it does in the eastern specimens.

Caudisona scutulata Kennicott.

Spec. char. Resembles *C. lucifer* in form and coloration of head, and *C. atrox* in coloration of body. Head narrow, nose depressed, rostral triangular, as wide as high. Two rather small frontal plates in contact; 4 post frontals, the external large, overlying the nostril. The space between the superciliaries narrow, filled with large flat plates. Scales on the occiput large and smoother than in *C. lucifer*. Outer dorsal rows of scales less strongly carinated. Rattle remarkably slender. Dorsal rows 25. Labials 16 above, 16 below. Three rows of scales between the suborbitals and labials. Light stripe from angle of eye to angle of jaw above the labials, and another from before the eye to the labials, as in *C. lucifer*, but the rostral and space in front of the pit, and nostril not lighter than the crown. On the middle third of the body a dorsal series of distinct rhomboids, margined with whitish and with the lateral angles acute much as in *C. atrox* or *C. adamantea*; the longitudinal angles sometimes perfect, at others truncate or emarginate. Nineteen brown half rings posteriorly narrow, and separated by wider light intervals than in *C. lucifer*. Rings on the tail narrow, irregular, and quite black.

This species so closely resembles *C. lucifer* that a description of it must be comparative to some extent. The head is longer and narrower posteriorly than in *C. lucifer*, and the nose is much more depressed, the rostral being triangular and as wide as high, while in *C. lucifer* it is a third higher than than wide. There are two small sub-triangular or sub-circular frontals in contact, and behind these is a row of four scales, the outer and largest one lying directly over the nostril; posterior to these is a third row of five or six scales, connecting the anterior extremities of the superciliaries, the external scale of which row is a little in advance of the rest; behind this third row two very large scales connect the superciliaries, behind which the crown is covered with plates much larger than in *C. lucifer*. The space between the superciliaries is narrower than in *C. lucifer*. The rattle is more slender than in any other species excepting *C. cerastes*.

The markings on the body of this species are much as in *C. atrox*, and quite unlike those of *C. lucifer*. The ground color is light yellowish or brownish ash; on the middle third of the body there is a dorsal series of rhomboidal blotches more or less truncated before and behind; anteriorly they become elongated longitudinally, and not only truncated but sometimes emarginate on the longitudinal angles, while the lateral angles are rounded, leaving the blotches sub-circular. Posteriorly the dorsal blotches continue to have the lateral angles acute and perfect, till they become confluent with a lateral series, and form nineteen half rings, six of which are on the tail. In the middle third of the body the dorsal blotches are included in 11 or 12 dorsal rows and are 4 to $4\frac{1}{2}$ scales in longitudinal extent; anteriorly they become longer longitudinally, and only 9 to 10 scales in transverse diameter. The dorsal blotches are light brown, bordered for the width of one scale with darker. They are separated along the back by a line of the ground color $1\frac{1}{2}$ to 2 scales in width, and immediately bordered by a narrow line lighter than the ground color, as in *C. confluentus*, *atrox* and *adamanteus*, this line being about a half scale in width. Posteriorly the light intervals between the rings widen to 3 or $3\frac{1}{2}$ scales, while the rings themselves become much narrower, being only 2 to 3 scales wide. On the middle third of the body below, and op-
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posite to the dorsal series is another row of small rhomboidal or sometimes triangular brown blotches on each side; they involve 4 to 6 scales and extend from the second to the fifth lateral row of scales, and are bordered by light lines like the dorsal series, from which they are separated by a single scale. Indications are seen of another series of small blotches resting directly upon the abdominal scutellæ, alternating with and a little lower than the first lateral series. The abdomen is whitish yellow without distinct blotches. A light line from posterior angle of superciliary and orbit to angle of jaw above labials, and another from before the eye to labials. The markings of the head of this species seem to be very nearly the same as in *C. lucifer*, there is, however, indication of a light border to the external edge of the superciliary, and the rostral and entire space in front of the nostril and pit as well as a little posterior to these, is as dark as the crown, while in *C. lucifer* they are distinctly lighter.

Though this species so closely resembles *C. lucifer*, it will be distinguished by the dorsal rhomboids with perfect lateral angles, by the narrower and more irregular rings posteriorly, by the lighter colors generally, by the slender rattle, and by the depressed nose with the difference in the frontals, and the larger, flatter, and smoother scales behind these. From *C. atrox* it will at once be distinguished by the very different markings of the head. It differs from *C. tigris* in having the head wider behind and the muzzle narrower, position of the frontals, narrower dorsal scales, and number of rows, larger dorsal blotches, etc.

Notes and Descriptions of ANOLES.

BY E. D. COPE.

Preliminary to a more extended memoir on the Anoline Iguanidæ, the following contribution is offered to Naturalists.

Xiphosurus velifer Gray. Inhabits the Island of Vieques.

Xiphosurus cristatellus Gray. Very abundant on the Island of St. Thomas.

Anolis distichus Cope.

Size small, form robust. Head broad, muzzle short. Tail one and a quarter times the length of the body, compressed, not verticillate, with an irregular serrate crest. Dorsal and lateral scales equal, homogeneous, minute, granular, larger than the ventral; the latter ovate, smooth. Humeral and superior antibrachial scales equal to the dorsal; those on the anterior part of the forearm larger. Anterior femoral and tibial scales equal to the ventral; those of the superior surfaces equal to the dorsal. Toes not of the most elongate type, reaching the external auricular opening or the posterior border of the orbit, where the limb is extended. No nuchal or dorsal dermal fold. Occipital plate sub-circular, rarely in contact with the superciliaries, sometimes transversely divided. Superciliaries five to seven on each side, sometimes in contact, sometimes separated by a row of minute scales. Palpebrals three to eight, smooth. Facial rugæ but little developed; interrugal space but little concave, covered with a few small, smooth scales. A straight median suture divides the plates of the anterior two-thirds of the muzzle; the latter arranged in four or five pairs, the smallest in contact with the rostral shield, the largest separated from the anterior superciliary by a large polygonal plate, and from the series of the canthus rostralis by a similar one, and in contact with it. Canthus rostralis straight, falling below the plane of the muzzle. Loreal series four. Superior labials seven. First infralabial smaller than first inferior labial or mental, its longitudinal extent greater than the transverse; the two succeeding

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