

clining in the direction of the ovipositor. At intervals of from $\frac{1}{2}$ to 2 minutes, the ovipositor is drawn forcibly forward and sometimes partly out of the slit, and then reinserted. By noting the number of times this movement was repeated, it was found to agree with the number of eggs in the slit.

The making and filling with eggs of the first slit requires from 20 to 25 minutes, after which the ovipositor is entirely withdrawn, and a second slit, shorter than the first, parallel to and curving towards it, is made, without change of position by the insect. The ovipositor is inserted as during the oviposition of the first series of eggs, but at a very considerable angle from that then assumed. The introduction of the eggs in the second slit is as described for the first. The sheath of the ovipositor maintains, during oviposition, a rapid in-and-out motion.

On the completion of the slit as above described, a rest of considerable length is taken before the insect begins work again.

The number of eggs contained in each slit varies from six to twelve, or even more. A female which had been observed from the cutting of the first slit to the close of oviposition was then captured, and found still to contain 40 or more eggs. The first and second slits made by it contained respectively nine and ten eggs.

The eggs on either side are introduced from the farthest removed slit, and not from the one directly above them, as I had at first supposed. By this means the outer bark is cut loose from beneath; and when broken apart by the growth of the limb leaves the apparently single scar seen on the older limbs.

Ceresa bubalus does not confine its punctures to the apple; other plants—trees and even weeds—furnish receptacles for its eggs. On Sept. 30, last, numbers of this insect were observed depositing eggs on a willow in a ravine. The mode of procedure here was the same as on the apple; and the limbs presented a similar scarred appearance, caused by the work of the insect in previous years.

An examination of several neighboring orchards showed but little of the work of this insect. Their injurious abundance in the orchard in question and paucity in others near by is a noteworthy feature in the history of this insect.

The Buffalo Tree-Hopper, in both mature and larval stages, feeds on the juices of plants—not, however, confining its attacks to the apple—and probably in this way occasions but slight damage. The cutting-up of the bark to form receptacles for its eggs, however, is a serious injury to the tree, and one not easily prevented, owing to the activity of the insect and the impossibility of destroying its eggs without at the same time destroying the tree containing them. The commonly accepted but certainly erroneous account of the oviposition of this insect, given by Dr. C. V. Riley in his Fifth Missouri Report, page 121, forms the excuse for this paper. He says: "The egg-punctures of this Buffalo Tree-Hopper, *Ceresa bubalus*, . . . consist of a row more or less straight of little raised slits in the bark, in each of which, upon careful examination, may be found an oval, dark-colored egg."

In a recent number of the *Canadian Entomologist*, Mr. J. G. Jack briefly describes the condition of bark cut up by the ovipositors of this insect, the eggs, and the larval stages. I failed to secure Mr. Jack's paper until my own had been written, but I find that his observations agree with mine wherever they cover the same ground.

NOTE ON A NEW VARIETY OF A SONORAN SERPENT FROM KANSAS.

BY F. W. CRAGIN, SC.B.

The specimen which serves as the basis of the following remarks is one of *Rhinochilus Lecontei*, B. & G., which was brought living to the writer in the summer of 1885, in Barber county, Kansas. It was taken by Master Chancy Smith, in a garden

in the town of Medicine Lodge. It essentially agrees with the generic descriptions given by Baird and Girard, and Garman. The large rostral plate, while "not prominent above" as compared with that of *Heterodon*, is nevertheless seen to have a slight absolute elevation, when viewed tangentially to the upper surface of the muzzle; it is also somewhat prominent at the sides, and is well produced anteriorly. While much less sharply compressed and pointed than in *Heterodon*, its peculiar and on the whole prominent development seems to indicate a burrowing habit. It departs noticeably from descriptions of *R. Lecontei* in the relation of the upper labials to the orbit—a fact to which Prof. Cope called my attention before I had studied the specimen. The upper labials are, as usual, eight in number—the seventh largest—but the fifth alone enters the orbit, nor does the fourth very closely approach it, being crowded out by the upper part of the fifth, which is laterally much produced. There are nine lower labials, the fifth largest. The ventral scutellæ are 206; the subcaudal 54, of which the first 45, the 47th, and the 49th, are entire, the others bifid.

Baird and Girard's description of this species says, "Prefrontals large compared to the post-frontals." It would certainly seem that this must be a mistake. In any event, the Kansas specimen is like most other serpents in having the post-frontals emphatically large as compared with the prefrontals. The loreal plate is long and narrow. The orbitals and the number of rows of dorsal scales are as in other described specimens of this species.

The number of transverse dorsal black bands considerably exceeds that hitherto seen in this species, being forty-five—the thirty-third opposite the anus. The snout and the dorsal surface between the black bands are bright red, the lateral flecks in those bands bright yellow. The ventral surface of the body is rather sparsely marked with more or less subquadrate black spots of various sizes.

The tail is relatively somewhat longer than is indicated by authors for *R. Lecontei*, being $\frac{1}{3}$ (or nearly $\frac{1}{3}$ instead of nearly $\frac{1}{4}$) of the total length.

This red and jet and golden reptile is, in life, one of the most beautiful serpents of North America. It might well be called the *Belle Snake*, in allusion to the elegance of its appointments. It is one of those brilliant faunal features so common in subtropical lands, and of which we see just the beginnings on the southern border of "sunny Kansas." The locality at which the specimen was found is not far from the isothermal line of 60°, which passes thence northwestward to the vicinity of Fort Wallace. The species, known only from the southwestern portion of its range (southern California) when first described, and later found at various localities to the southeast, east, and northeast, is here recorded from a locality which must represent nearly its extreme northeastern limit.

Previous to seeing this specimen, a snake which could hardly have been of other than this species was described to me as occurring a few miles west of Medicine Lodge. The species doubtless belongs also to the fauna of southern Colorado.

As this form is likely to prove but a variety of *R. Lecontei*, I will not venture to assign it a name, but will merely suggest that if it should at length appear that its distinctive characters are stable, it should be named after Prof. Cope, who is its true scientific discoverer.

ADDITIONS FOR 1885 AND 1886 TO THE LIST OF KANSAS COLEOPTERA.

BY WARREN KNAUS, M'PHERSON, KAS.

Of the following list, four species, Nos. 5581, 5587, 5613, and 5624, were taken by Mr. E. H. Kern, in Rooks county, in June and July, 1885. The remaining 51 species were taken principally in the counties of Rooks, Norton, Phillips, Cloud, Saline, and Finney. The collections from Rooks, Norton, Cloud, and Phillips counties were