

depth of eighteen to thirty inches. Always these holes were in the red soil. Suddenly I realized why I found so many holes in this red soil dug by foxes: "Mrs. Pleocoma" undoubtedly made a fine part of "Mr. Fox's" meal.

Many times I had caught the males of this species, a black, shiny beetle about one-half the size of the female, flying in the dusk during a slight drizzle. The females seldom if ever come out of the ground, the males only during the winter months or wet season. At such times the air was full of them, appearing like swarms of bees. But let the drizzle stop or let it actually begin to rain and, presto! they were gone. They only fly in the winter months after the first few soaking rains. This general habit of flying only in the winter and during a fine drizzle at dusk is common not only to *Pleocoma fimbriata* but to *Pleocoma behrensii*, Lec. and to *Pleocoma hoppingi* Fall, and probably to all the Pleocomas.

The underground life is all around us, but few of us know anything about it. We have eyes but we do not see.

ALBERTAN COLEOPTERA.

BY F. S. CARR,
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Cicindela repanda edmontonensis, new variety.

Type to be deposited in the National Collection at Ottawa, labeled Edmonton, Alta. 21—VIII—19; F. S. Carr, collector; female.

Length 12.75 mm. The colour is dark brown with narrow elytral markings; the humeral and apical lunules are widely separated from the side margin, the dot of the oblique line being broken off that line. The humeral angles of the thorax are cupreous and the sulci blue, the blue fading out where the sulci join the median line. The under surface of the thorax is bright cupreous and of the abdomen shining green, the under surface being covered with long white pubescence.

The head is much narrower than the thorax, coarsely strigose, and with the front sparsely hairy. The elytra are punctate, each puncture having a shining granule.

This variety is another in that complex centering about *repanda* Dej., a complex characterized by a development of colour pattern along two directions. In one the elytral markings become heavier and more crowded, producing *bucolica* Csy. and *unijuncta* Csy.; in the other the markings become fainter, producing *edmontonensis* Carr and *hudsonica* Csy. All five varieties have been taken on the banks of the Saskatchewan River at Edmonton, *bucolica* and *unijuncta* being the most abundant.

Diplochila undulata, new species.

Type to be deposited in the National Collection at Ottawa, labeled 10-V-19, Edmonton, Alta.; collected by F. S. Carr; male.

The head is black, the palpi and antennæ piceous, the palpi being testaceous at the ends. The thorax is much wider than long, wider at the base than at the apex, widest at the anterior third. The posterior angles are obtuse, the basal impressions single, deep, linear, the median impression defined medially but obsolete anteriorly and posteriorly. The thorax is smooth. The elytra

are the same width at the base as the thorax, then widen out to the anterior sixth, then run parallel to the posterior fourth, from which the sides curve to the suture, the apex being sinuate. The intervals are interrupted by shallow transverse wrinkles most deeply incised where the intervals dip to the striæ; the striæ possess traces of punctures at rare intervals; the seventh stria is almost obsolete.

Length 13 mm.

This species is described from a series of six specimens all taken at Edmonton. The writer had for comparison a series of *obtusa* Lec., one from Edmonton and three from Mr. Chagnon, Montreal. From *obtusa* it is easily distinguished by its size and the appearance of the elytra, which somewhat resemble those of *Amara interstitialis* Dej.

Chlaenius frostii, new species.

The type is to be deposited in the National Collection at Ottawa, labeled 11-V-18, Edmonton, Alta.; collected by F. S. Carr; male.

Length 9 mm. The colour is black beneath, slightly violaceous above, darker on the head and thorax, polished and shining. The antennæ are piceous with the first joint pale, the palpi are black with the tip almost white, the terminal joint being dilated and truncate. The labial palpi are more dilated than the maxillary palpi. The head is smooth. The thorax is widest at the base gradually becoming narrower towards the apex, the base of the thorax and the elytra being the same width. The anterior angles are broadly rounded, the posterior obtuse. The impressions are double, wide, shallow and punctured coarsely, the punctures being separated by their own diameter. The median impression is defined as a narrow impressed line fading out anteriorly and posteriorly and bordered on each side by a row of punctures. The remainder of the surface is sparsely punctured with the exception of the base, which is punctured like the impressions.

The basal line of the elytra meets the lateral line at an angle. The striæ are clearly impressed and punctured and are wide apart, the intervals being flat and shining. The punctures of the intervals are coarse, being about $3\frac{1}{2}$ punctures to the greatest width of any interval, and occurring in lines arranged more or less transversely. The punctures on the first interval are at most in two rows. The scutellar stria is short and deeply impressed. The abdomen is coarsely, shallowly and sparsely punctate and sparsely pubescent with short, yellow pubescence. The prosternum is coarsely and sparsely punctate; the mesosternal episternum and the metasternum are cribrate.

The describer has given this species the name *frostii* as an indication that he appreciates the great amount of assistance given him by Mr. C. A. Frost. In connection with this species Mr. Frost kindly loaned a specimen of *purpuricollis* Rand, that had been compared with the material in the Leconte and Harris collections.

This species is most closely related to *purpuricollis*. It is most readily distinguished by the following table:

<i>frostii</i>	<i>purpuricollis</i>
elytra shining	elytra opaque from small, transverse lines.
punctures coarse	punctures small

This species is described from a series of five, all taken in the Edmonton district.

Elleschus borealis, new species.

The type will be deposited in the National Collection at Ottawa. It is labeled 24-V-19; Edmonton, Alta.; collected by F. S. Carr.

Length 2.8 mm. The colour is red, the eyes alone being black, and is covered with white pubescence except for a denuded area behind the middle, stretching from the second interval to the margin and back to the top of the declivity. The beak is shining, shorter than the head and thorax, punctate, the punctures being coarse and well separated; the second joint of the antennæ is longer than the third, the median line on the thorax is raised in the middle only, the pubescence diverging from it to the sides, which are rounded. It is widest at the anterior third. The elytral striæ are finely impressed and punctate with coarse punctures closely placed.

This species seems to be closely allied to *bipunctatus* Linn., but is distinguished by its colour. It has been described from a large series taken on willow.

ADDENDUM.

Mr. F. A. Sherriff has kindly sent a specimen of *Chlaenius purpuricollis* Rand. This was received since the descriptions were prepared. It agrees with the specimen loaned by Mr. Frost. This specimen was also taken in Mass.

A BIBLIOGRAPHY OF THE LITERATURE ON THE DESCRIBED TRANSFORMATIONS AND FOOD PLANTS OF NORTH AMERICA SPECIES OF *AGRILUS* (COL.).

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(Continued from page 210.)

A. *politus* Say.

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This species is known as the oak twig-girdler. Spiral shaped burrows are made in the soft-growing tissues of the twig, and encircle it from four to seven times (Childs). Infests green bark on living willow trees (Hopkins). Common on *Salix obtusifolia* (Hamilton). On willow (Mancee) (Blanchard). On hazel (Bruner). On *Salix* and *Corylus americana* and *C. rostrata* leaves (Frost). On oak and willow (Blatchley) (Smith). Breeds in living willow and striped maple (*Acer pennsylvanicum*) (Knull). Forms galls on twigs of white thorn (*Crataegus*) (Felt).