

**XVII. NOTES ON THE OKLAHOMA SPECIES OF
ONTHOPHAGUS**

W. J. Brown, Oklahoma Agricultural and Mechanical College.

The genus *Onthophagus* is a large group of rather small beetles. It belongs to the family Scarabaeidae and is very closely allied to the ball-rolling dung beetles. The Oklahoma species range from $3\frac{1}{2}$ to 9 mm. in length and are blackish or greenish in color. Over twenty species occur in the United States.

The food of *Onthophagus* is varied, but all species are scavengers. The commonest food is manure, but these beetles are frequently found in decaying plant material and at dried carrion. *Onthophagus* constructs a vertical well in the soil beneath the food material, some of which is carried into the burrow where the beetle either feeds or lays an egg upon it.

Onthophagus is a genus of wide distribution, being found in nearly all parts of the world, Oklahoma is very fortunate in holding an intermediate position in the United States, so it is

in this state that the eastern species of *Onthophagus* give way to the western species and the northern species to the southern.

In spite of the small amount of collecting that has been done, six species of the genus are definitely known to occur in Oklahoma. These naturally fall into two groups according to secondary sexual characters. In the first group, the thorax of the male is armed with a broad projection which extends forward over the head. This projection is forked at the tip and is frequently half as long as the body of the beetle. In addition, the fore tibiae of the males are very long and slender. In the females, there is only a trace of the thoracic projection and the fore legs are not elongate. Into this group fall three Oklahoma species, namely, *hecate*, *guatemalensis*, and *orpheus*. *Hecate* is the commonest North American species and is probably our most abundant species. From April until November it occurs in the fresh droppings of animals and is most abundant in the more humid situations. It is also found eastward to the Atlantic and from Canada to Florida.

Guatemalensis was described half a century ago. As the name indicates, the type specimens were from Guatemala. It was also found in other Central American countries. Only a few years ago it was discovered in Texas and at present it is known to occur in Texas, Oklahoma and southern Kansas. The species is much like *hecate* and undoubtedly replaces the eastern *hecate* in western Oklahoma. In Payne County *guatemalensis* is very abundant during the spring months in and beneath manure on very sandy soil. It does not occur where there is little or no sand.

Orpheus is an eastern species that extends westward to the central part of Oklahoma. It is not common and is found about manure in moist woodlands.

The second group of Oklahoma species is characterized by the absence of the sexual characters of the fore legs and thorax. The fore legs are not elongate and the thorax is simply convex in both sexes. In this group, too, are three Oklahoma species, *pennsylvanicus*, *cribricollis*, and *tuberculifrons*.

Pennsylvanicus is our smallest species, measuring from 3.5 to 5.5 mm. in length. It is very common in manure and is widely distributed in the U. S.

Cribricollis has a very interesting history. The species was described in 1881 from specimens taken in Douglas County Kansas, and in Texas. Since then three additional records were made

until last year, two specimens being taken in New Jersey and one in Indiana, and one in New York. At Stillwater last year we took the species on three occasions. All specimens were found in moist woodlands and it is possible that the species will be found to feed on the decaying organic matter on the floor of woodlands. In the college collection we have a male specimen of *Onthophagus* that differs from our specimens and the original description of *cribricollis* only in secondary sexual characters. This peculiar beetle has a thoracic projection and elongate front legs. It was taken in March by sifting the debris from the ground in a moist woods. If this beetle is found to be a new species, it will be very difficult to distinguish its female from the female of *cribricollis*, as the specimen will fall in a section of the genus in which the female lacks secondary sexual characters in the head and thorax.

Tuberculifrons is an eastern species occurring in pine woods along the Atlantic coast from New Jersey to Florida. It has also been recorded from Indiana. I was very much surprised last fall to find this species common in a small wood of black jacks near Ripley, Oklahoma. It is an easily recognized species and the Oklahoma examples seem identical to the eastern specimens.

Besides the species that I have mentioned there are four other species that further collecting may bring to light in the state. Two of these, *coproides* and *anthracinus* are Arizona species which have been recorded in Nebraska and therefore, probably occur in Oklahoma. *O. Knausi*, an undescribed species, occurs in eastern and south central Kansas. It, too, may extend into Oklahoma. *O. brevifrons* is a plains species known only from the original description. It was described from Kansas and Texas specimens and if it exists at all it will undoubtedly be found within the state.