KEY TO ORTHOPTERA OF MICHIGAN WITH ANNOTATIONS.

TRYXALINÆ.

The connecting links between the subfamilies Oedipodinae and Tryxalinae are so numerous that it is difficult, indeed, to say to which subfamily some genera belong. The following characters define the subfamily Tryxalinae:

The front of the head slopes obliquely, meeting the dorsum of the head, at the vertex, at an acute angle rather than in a curve. The antennae are often flattened at their bases and pointed at their tips. The disk of the pronotum narrows slightly toward the front, while the prozona is not shorter than the metazona. The median carina is never crested nor cut by more than one sulcus, the lateral carinae showing distinctly. The tegmina are more or less uniform in color, never banded in distinct patterns. The intercalary vein is generally wanting and many of the species possess both long and short winged forms. The wings are never brightly colored nor banded with black.

Key to the genera of Tryxalinae.

A. Foveolæ of the vertex present, visible from above. Face slightly receding. Antennæ thread-like. (See figure)

B. Lateral carinae of the pronotum distinct on the prozona. Vertex of the head with a median carina.

C. Foveolæ of the vertex extending from the eye to the apex of the head. Tegmina either well developed or short. Insect slender, an inch or less in length.

Stenobothrus. Page 10

CC. Foveolæ of the vertex small, mere triangles in front of the eyes, not extending to the vertex of the head. Tegmina well developed. Insect robust, about an inch in length. Meostethus. Page 11

BB. Lateral carina indistinct on the front portion of the pronotum. Vertex of the head without a median carina. Foveolæ of the vertex each with its sides parallel. Hind tibia red, the lower apical spur on the inner side fully half as long again as the upper spur. Insect small, under an inch in length.

Ageneotettix. Page 11

AA. Foveolæ of the vertex absent, or if present not visible from above. Face decidedly receding. (See figure)

B. Antennæ thread-like, slightly flattened at the base.

C. Lateral carinae of the pronotum parallel; median carina cut behind the middle by the principal sulcus. Head with the lateral carinae of the vertex elevated; sulcate directly back of elevation, the dorsum convex. Median carina of the head absent. Eyes elongated ovals.

Dichromorpha. Page 11

CC. Lateral carinae of the pronotum somewhat incurved, in front of the middle.

D. Tegmina of the female seldom reaching to the tip of the abdomen. Head with the median carina indistinct; eyes oval. Median carina of the pronotum cut back of the middle by the principal sulcus. The hind tibiae with the inner apical spurs about equal.

Chloealtis. Page 11
DD. Tegmina in either sex extending at least to the tip of the abdomen. Foveola of the vertex sometimes present but never well developed nor visible from above.

E. Head with median carinae indistinct; antennae filiform. Eyes oval. Insect small, less than an inch in length. Color variable but usually a yellow line extends back of the eye and down the lateral carina of the pronotum, beneath this line is a dark bar. *Orphedella*. Page 12

EE. Median carina of the head distinct. Antennae slightly flattened, nearly uniform in width, pointed at tip. Eyes elongate, each one ending near the vertex in a point. Hind femora long, extending beyond the tip of the abdomen and the wings. Hind tibiae each armed on the outer margin with not less than 19 spines. Tegmina well developed, exceeding the abdomen in length. Insect an inch or more in length. *Syrbula*. Page 12

BB. Antennae very much flattened at their bases. Lateral carinae of the pronotum parallel.

C. Hind margin of the pronotum truncate in both sexes. Insect greyish-brown in color. Neither tegmina nor hind formora in either sex extend beyond the tip of the abdomen. Hind tibiae each with not less than 15 spines on the outer margin. Eyes elongate, small, not prominent viewed from above. *Pseudopomala*. Page 12

CC. Hind margin of pronotum angulate in the male, rounded in the female. Insect green or greenish-brown in color. Tegmina extending to the tip, and hind femora extending beyond the tip of the abdomen. Hind tibiae each with less than 15 spines on the outer margin. Eyes oblong and prominent. *Tryxalis*. Page 13

**STENOBOTHRUS** (Fischer)

Two species belonging to this genus are recorded from the state. *Stenobothrus curtipennis* Harr., is the common form. Head with foveola of the vertex visible from above, the sides of the foveola being parallel. Tegmina uniform in color, but variable in length. Males with the sides of the pronotum conspicuously banded, the upper portion black, the lower portion light. The markings on the pronotum together with the presence of the foveola of the vertex, separate the males of this species from those of *Chloea conspersa*, which they very closely resemble.

*Stenobothrus maculipennis* is rare. The foveola of the vertex are very shallow, broader toward the eyes than at the apex. Tegmina with the sides green, each marked with a row of equidistant quadrate black spots along the middle. Dorsum rust red. Tegmina always well developed.

**KEY TO ORTHOPTERA**

MECO

*Meccostethus lineatus* Scudder found in the state. Scudder from New England to North Carolina has been reported as collected with this species low down the state in several places.

The color is somewhat variable, but with the exception of the pronotum in those of *Syrbula*.

The hind tibiae are yellow with dark stripes. The bases of the spines are bicolored.

**AGENE**

*Ageneotettix scudderi* Brun., is found in the state. Scudder from New England to New York, and from Indiana to Cedar Point.

The insect is of a uniform dark brown color. The color is somewhat variable, but with the exception of the pronotum in those of *Syrbula*.

The hind tibiae are yellow with dark stripes. The bases of the spines are bicolored.

**DICHR**

*Dichromorpha viridis* Scud., is found in the state. It lives on coarse, heavy soil. This species is sometimes confused with *Syrbula*.

The color is somewhat variable, but with the exception of the pronotum in those of *Syrbula*.

*Chloea conspersa* Harr., is found in the state. It lives on coarse, heavy soil. This species is sometimes confused with *Syrbula*.

The color is somewhat variable, but with the exception of the pronotum in those of *Syrbula*.