

A PRELIMINARY LIST OF THE JASSOIDEA OF MISSOURI WITH NOTES ON SPECIES.

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The following preliminary list of the Jassoidea of Missouri is mainly the result of collections and notes made by the authors during the summer months of 1915. On account of the lack of records for this state the authors were prompted to undertake such a survey. As far as possible collections were made so as to embrace all conditions in different sections, giving some attention to ecological relations. The list comprises some 98 species.

BYTHOSCOPIDAE.

Macropsis apicalis Osb. & Ball. A few specimens swept from weeds at Charleston, Mo., during the late summer.

Bythoscopus distinctus VanDuzee. Found in great numbers on willows in northern Missouri.

Pediopsis viridis Fitch. Not common. Taken from willows near drainage canals in southeast Missouri. Somewhat more numerous in northern part of the state.

Idiocerus nervatus VanDuzee. The only species taken from willows about Chillicothe.

Idiocerus verticis Say. Listed by VanDuzee as occurring in the state.

Idiocerus crataegi VanDuzee. Swept from grasses at Chillicothe.

Idiocerus snowi Gill & Baker. Recorded from Lutesville and Charleston. Feeding on millet and grasses. Nymphs numerous during August.

Agallia sanguinolenta Prov. Most plentiful in southern part of state. A decided pest of clover and alfalfa. Other food plants include wheat and several weeds. Adults abroad in fields all seasons of the year. Abundant in northern Arkansas.

Agallia constricta VanDuzee. One of the earliest jassids to appear in the spring. Most numerous on grains. Attacks wheat, rye, oats, alfalfa and grass. Abundant in southern counties.

- Agallia uhleri** VanDuzee. Not very numerous. Occurring principally near swamps along the Mississippi River. Also collected from clover fields.
- Agallia novella** Say. Rather uncommon. Taken only in southern half of state. Adults collected from alfalfa and from weeds growing in marshes and bogs.
- Agallia 4-punctata** Prov. Clover and alfalfa are among its food plants. Most abundant in southern counties.
- Agallia gillettei** O. & B. Quite rare. A few adults taken at Charleston.

TETTIGONIDELLIAE.

- Oncometopia undata** Fabr. Occurs throughout the state, but not abundant. Swept from grass, weeds and a number of shrubs.
- Oncometopia costalis** Fabr. Occasional specimens taken throughout southern part of state. Also recorded in the collection of the Experiment Station at Columbia.
- Homalodisca coagulata** Say. Occasional specimens taken from cotton and cowpeas. Not abundant.
- Aulacizes irrorata** Fabr. Recorded from the collection of the Experiment Station at Columbia.
- Kolla bifida** Say. Swept from weeds in marshy lands and from willows and several shrubs. Recorded only in Mississippi County.
- Kolla geometrica** Sign. Not common. Recorded from Springfield on grass.
- Kolla tripunctata** Fitch. Mentioned in VanDuzee's Catalogue of Described Jassoidea of N. A. as occurring in Missouri.
- Tettigoniella gothica** Sign. Only one specimen taken. From grass at Lutesville, August 13.
- Tettigoniella occatoria** Say. Common in eastern part of state. Feeds on clover and weeds.
- Tettigoniella hartii** Wood. Quite numerous throughout the state during the late summer. Captured only from meadows and grass lands.
- Tettigoniella hieroglyphica** Say. Rather common in all parts of the state. Known to feed on clover and several weeds.
- Tettigoniella hieroglyphica** Say. var. *hieroglyphica* Say. One adult captured from grass at Rolla, September 21, by Mr. Geo. W. Barber.

- Tettigoniella hieroglyphica** Say. var. *uhleri* Ball. Rather common in eastern half of state. Taken from clover and weeds.
- Tettigoniella hieroglyphica** Say. var. *confluens* Uhler. Taken with the above variety.
- Diedrocephala coccinea** Forst. Very generally distributed. Common but not in great numbers. Injurious to many ornamental plants in the Missouri Botanical Gardens at St. Louis. Nymphal cast skins observed on leaves of Magnolia and American Holly. Adults taken from several kinds of trees near swamps along the Mississippi River.
- Diedrocephala versuta** Say. Very abundant in central and southern Missouri. Adults first observed in June. All stages abroad in fields from July to November. Injurious to cowpeas in Southeast Missouri. Food plants include alfalfa, clover, sunflower, grasses, and many weeds. Common on several ornamental plants and shrubs in the Missouri Botanical Gardens at St. Louis during September.
- Draeculacephala reticulata** Sign. Rather common at Charleston and Sikeston during July and August and September, on corn, alfalfa and grasses. Taken at Chillicothe, Sept. 6, Stanberry, Sept. 7. The last two records extend the distribution of this jassid to north of the Missouri River, a fact which is interesting in view of the distribution recorded by Prof. Osborn in Bull. 108. Bur. of Ent.
- Draeculacephala angulifera** Walker. Quite common on grass at Charleston.
- Draeculacephala mollipes** Say. Abundant throughout the state. All stages present from April to November. Of great economic importance. A decided pest to young grains and grasses. Known to feed on an innumerable list of plants and shrubs, field crops, and ornamentals. Adults migrate in large numbers. About the most common jassid in Missouri.
- Draeculacephala noveboracensis** Fitch. Taken on grass at Charleston.
- Helochara communis** Fitch. Swept from wheat on many warm, sunny days during the winter. In July collected from alfalfa. Recorded only from Mississippi County.
- Gypona 8-lineata** Say. Occurs throughout the state. Has special liking for shady and damp places. Appears to be essentially a grass feeder.

- Gypona flavilineata** Fitch. Swept from grass lands at Chillicothe.
Gypona cana Burm. Taken with *G. flavilineata*.
Gypona pectoralis Spangb. Taken with *G. flavilineata*.

JASSIDAE.

- Xestocephalus pulicarius** VanDuzee. One specimen of this form taken at an electric light at Charleston, July 28.
Xestocephalus tessellatus VanDuzee. Collected from elm leaves at Charleston. Quite rare.
Hecalus lineatus Uhler. Not common. Nymphs more numerous than adults during August. Swept from rank growing grasses near the Mississippi River at Hannibal.
Parabolocratus viridis Uhler. Recorded from Springfield, Columbia, Chillicothe, and Charleston. Observed feeding on grass, sweet clover and sorghum.
Platymetopius acutus Say. Only one adult collected. Swept from weeds near a bog at Charleston, July 28.
Platymetopius frontalis VanDuzee. Very common throughout the state. Attacks clover, alfalfa, and grasses. Also taken from woody shrubs.
Deltocephalus nigrifrons Forbes. Generally distributed in all sections of the state. Very abundant during October. Known to feed upon clover, alfalfa, wheat, many grasses including blue grass, and several weeds. Attracted to lights at night.
Deltocephalus weedi VanDuzee. Quite common on weeds along roadsides and shady places. Collected at Lutesville and Charleston during the late summer.
Deltocephalus flavicosta Stal. Quite abundant during middle and late summer, principally in southern part of state. Swept from native grasses and weeds. Occasional specimens taken from wheat.
Deltocephalus sayi Fitch. Recorded from grass lands in North western parts of state in September. Quite common in blue grass.
Deltocephalus inimicus Say. Common in all parts of the state. All stages taken from May to November. Food plants include wheat, oats, alfalfa, clover, cowpeas, timothy, blue grass, other native grasses, and weeds.

- Deltocephalus albidus** Osb. & Ball. Recorded from the collection of the Experiment Station at Columbia.
- Deltocephalus obtectus** Osb. & Ball. Quite scarce. Recorded only from Mississippi County. Near swamps.
- Deltocephalus misellus** Ball. Captured but one adult, in a corn field near Mississippi River at West Quincy.
- Deltocephalus productus** Walker. Rather scarce. Swept from clover and weeds at Stanberry.
- Deltocephalus debilis** Uhler. Quite common on grasses in rye and wheat stubble fields about Hannibal and West Quincy.
- Athysanus exitiosus** Uhler. Occurs throughout the state. With the exception of *Draeculacephala mollipes* it is the most common jassid of northwestern Missouri. Adults present at all seasons of the year. Food plants include wheat, oats, corn, alfalfa, grasses, and weeds.
- Athysanus bicolor** VanDuzee. Numerous in southern part of state, especially in low or bottom lands. Feeds upon many weeds, grasses and alfalfa.
- Athysanus obtutus** VanDuzee. Not common. A few adults taken from sweeping wheat fields in the early spring. Recorded only from Mississippi County.
- Athysanus plutonius** Uhler. Rather rare. Occasional specimens swept from wheat in Scott and Mississippi Counties.
- Athysanus curtisi** Fitch. Only one adult captured sweeping weeds at Hannibal.
- Eutettix clarivida** VanDuzee. Recorded from Lutesville and Charleston, from millet and grasses. Nymphs numerous during August.
- Eutettix osborni** Ball. Collected by Geo. W. Barber at Poplar Bluff, from White Aster, used in ornamental plantings.
- Eutettix seminuda** Say. Rather numerous but not abundant. Occurring in all parts of the state. Collected principally from weeds and woody shrubs near swamps. Also from grape vines.
- Eutettix strobi** Fitch. Only one adult captured. Feeding on a leaf of a willow tree growing in a swamp.
- Phlepsius apertus** VanDuzee. Very common throughout the state, especially in the southeast section. Occurs in great numbers on alfalfa and clover upon which crops they must be considered a pest. Also recorded from grasses and weeds. Most abundant during July and August.

- Phlepsius irroratus** Say. Very common and generally distributed throughout the state. Of economic importance, attacking alfalfa, clover, cowpeas, corn, wheat, oats, grape, many grasses, and weeds.
- Phlepsius cinereus** VanDuzee. Recorded only from Mississippi County. Most numerous in early summer. Often taken at lights.
- Phlepsius pallidus** VanDuzee. Collected at lights during summer months. Generally distributed but not abundant.
- Phlepsius superbus** Uhler. Not abundant. Occasional specimens captured in Mississippi County.
- Scaphoideus sanctus** Say. Occasional specimens taken in southern part of state.
- Scaphoideus productus** Osborn. One adult collected at Rodney, August 25.
- Scaphoideus scalaris** VanDuzee. Quite common. Recorded from Springfield and Hannibal. Taken only from weeds.
- Scaphoideus jucundus** Uhler. Occurs on rank weeds and willows. Only record is from Stanberry.
- Scaphoideus immistus** Say. Swept from woody shrubs and rank grasses about Charleston.
- Scaphoideus immistus** Say. var. *minor* Osborn. One adult taken at Charleston.
- Thamnotettix clitellarius** Say. An occasional adult taken in sweepings from grasses and weeds in southeast Missouri. Also taken from grape at Columbia.
- Chlorotettix viridius** VanDuzee. A few adults taken during the summer from grasses and weeds growing in low and swampy lands. Recorded from Pattonsburg and Charleston.
- Chlorotettix unicolor** Fitch. Rather common in central and northern parts of state. Collected from willows growing in lowlands.
- Chlorotettix tergatus** Fitch. One adult collected at Charleston, September 2.
- Chlorotettix necopina** VanDuzee. Only record is from Charleston where adults were swept from weeds growing in marshy places.
- Chlorotettix galbanata** VanDuzee. Quite rare. Occasional specimens taken from weeds growing along roadsides in Mississippi County.

- Jassus olitorius** Say. Not common. A few adults taken in southeast Missouri. Observed them feeding upon alfalfa.
- Balclutha punctatus** Thunbg. Only record of occurrence is from Pattonsburg.
- Gnathodus impictus** VanDuzee. Not numerous. Observed feeding on grasses and several weeds at Charleston during May.
- Cicadula 6-notata** Fall. Occurs in all sections of the state, most abundant in northeast. Known to feed upon wheat, oats, and grasses. Especially numerous during October.
- Empoasca mali** LeB. One of the most common and probably the most injurious leafhopper. Feeds on a great variety of plants, shrubs and trees. A pest of field crops, nursery stock, and orchards. Especially abundant during the summer of 1915 on alfalfa and clover. In early spring adults have been observed feeding on wheat, rye and native grasses. Exhibits great adaptability to changes of climate and host plants.
- Empoasca smaragdula** Fall. Listed by Gillette as occurring in the state.
- Empoasca radiata** Gillette. Swept from willows growing in the Missouri Botanical Gardens at St. Louis.
- Dicraneura abnormis** Walsh. Not common. Few specimens collected from blue grass and around lights at night at Chillicothe, during September.
- Typhlocyba illinoiensis** Gillette. Noted feeding on rose leaves in the Missouri Botanical Gardens at St. Louis.
- Typhlocyba obliqua** Say. Very abundant on many weeds at Springfield during August.
- Typhlocyba trifasciata** Say. Listed by Gillette as occurring in the state.
- Typhlocyba tricincta** Fitch. Abundant on several ornamental bushes in Missouri Botanical Gardens at St. Louis. Adults exceedingly quick of movement. Also collected at Pattonsburg and Columbia.
- Typhlocyba comes** Say. Abundant throughout the state. A severe pest of grapes, especially in southeast Missouri. Feeds on a number of weeds. Attracted to lights at night in considerable numbers.

Typhlocyba comes Say. var. *vitis* Harris. Occurring on ornamental shrubs, including rose, in the Missouri Botanical Gardens at St. Louis.

Typhlocyba comes Say. var. *scutelleris* Gillette. Very common on Sycamore in all stages, and frequently causing severe infestations. Nymphs and adults feed on under side of leaves resulting in small whitish brown spots. Occurs in all parts of Missouri.

Typhlocyba comes Say. var. *basilaris* Say. One adult captured by Geo. W. Barber at Poplar Bluff, September 4, from white aster.

Typhlocyba comes Say. var. *ziczac* Walsh. Collected from rose bushes in the Missouri Botanical Gardens at St. Louis.

Typhlocyba vulnerata Fitch. Rather numerous on several ornamental shrubs growing in the Missouri Botanical Gardens. Feeds on under side of leaves.