

RECORDS OF INDIANA DRAGONFLIES, VI, 1931

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These records have been compiled from collections of dragonflies made in Indiana during 1931 and identified by E. B. Williamson or the author, and from a few specimens collected in other years but not previously reported. All earlier records have the year indicated, but records from 1931 have usually only the month and day indicated.

About 875 specimens, representing 53 species were included in these collections. Records from Allen, Huntington, Miami, Steuben and Wells counties were furnished by Mr. Williamson who was assisted in the field by Eli Captain, Norman Shufelt, and W. H. Ditzler. Specimens have been furnished to the author by G. Walker Daubenspeck from Fayette, Fulton, Henry, Lake, Rush and St. Joseph counties, by A. W. Trippel from Marshall and St. Joseph counties and by R. R. Heaton from Rush county. A small exhibit collection made by the Nature Guide Staff at Turkey Run State Park, Parke County, was examined during the summer and records based upon this material are followed by the initials "T. R." Records based upon specimens collected by students at the Purdue Forestry Camp at Henryville, Clark County, are indicated by the initials "P. U." Records from Clark and Parke counties, unless indicated by such initials and from all counties not listed above are based upon collections made by Esther Barrett Montgomery and the author.

All new county records, even of the most common species, records of rare or interesting species, and notes on habitats or associations have been selected for publication. Much collecting was done during the season in parts of the state not previously visited by dragonfly collectors and many new county records were thus obtained. One species new to the state list, *Enallagma basidens* Calvert, is recorded, bringing the Indiana list of dragonflies to 132 species.

Attempts were made during the summer to visit as many as possible of the localities which have been described or discussed in detail in previous papers.¹ The water supply reservoir at Oakland City was visited by R. Boner Barrett and the author June 14. About an hour was spent at the lake but very few dragonflies were seen. A male each of *Tetragoneuria cynosura* Say, and *Perithemis tenera* Say, two males and a female of *Ischnura verticalis* Say and a female of *Celithemis elisa* Hagen were taken; *Epicordulia princeps* Hagen and *Tramea* sp., were seen. The author visited this locality again August 9 and captured three females of *Celithemis eponina* Hagen, the only species seen.

Robert W. Montgomery and the author visited Footes Lake from about 3:30 to 4:30 p. m., July 18. The water was very low, the water margin being from 100 to 300 feet from the usual shore line. In places,

¹ Proc. Ind. Acad. Sci., 29: 99; 34: 383; 36: 287; 38: 335; 39: 309; 40: 347.

"Proc. Ind. Acad. Sci. vol. 41, 1931 (1932)."

this exposed lake bed had grown up with weeds to within 25-50 feet of the water, but in other places farm animals had access to the lake and this exposed margin was bare. Two species, *Plathemis lydia* Drury and *P. tenera* were very abundant, the latter was especially common in the weedy margin of the lake bed and at the edge of the water. At a place where the limbs of a fallen tree extended into the water many individuals of *Argia apicalis* Say were seen and several were taken. Trameas soared over the margin of exposed lake bed and nearby fields and a few Pantalas were seen in the fields. A few Gomphines were seen in the vegetation and on the ground or rocks at the very edge of the water. No Macromias were seen at the lake but a few were flying in lanes and open areas in the woods back from the lake. *M. illinoiensis* Walsh and at least one other species were represented, but *M. taeniolata* Rambur, which has been found at the lake in considerable numbers in other years, was not seen. Butterflies of several species were common, but no mayflies were seen.

The order and numbers used in Williamson's annotated list² are followed here.

1. *Agrion acquabile* Say. Steuben Co., Pigeon River, Aug. 9, a male and a female, the only ones seen, were taken.

3. *Agrion maculatum* Beauvois. This common species was captured during 1931 in the following counties from which it had not been reported previously: Daviess, Fayette, Henry, Lawrence, Martin, Miami, Monroe, Montgomery, Morgan and Rush. Parke Co., (T R).

4. *Hetaerina americana* Fabricius. Daviess Co., stream near Washington, June 15; Fayette Co., Williams Creek, Aug. 5, 7, Sept. 13; Miami Co., Eel River Aug. 2, very common; Parke Co., (T R); Rush Co., Flat Rock Creek, Aug. 6; St. Joseph Co., swamp seven miles south of Mishawaka, June 13.

11. *Lestes rectangularis* Say. St. Joseph Co., near lake at Lakeville, Aug. 10, 11.

13. *Lestes unguiculatus* Hagen. Fayette Co., Williams Creek, Aug. 5; Lake Co., dry marsh east of and pond west of Merrittville, Aug. 12; Marshall Co., Donaldson Lake, June 25.

14. *Lestes vigilax* Hagen. St. Joseph Co., lake, Notre Dame, Aug. 11.

15. *Argia apicalis* Say. Clark Co., July 15, 17, 20, (P. U. and B. E. M.); Lawrence Co., many localities, July 3 to Aug. 20; Miami Co., Eel River, Aug. 2; Parke Co., pond near Rockville, July 6; St. Joseph Co., Leeper Park, South Bend, Aug. 10.

16. *Argia moesta* Hagen. Lawrence Co., several streams near Bedford, July 3 to Aug. 20; Miami Co., Eel River, Aug. 2; Montgomery Co., rocky stream near Waveland, July 6; St. Joseph Co., Leeper Park, South Bend, Aug. 11.

17. *Argia sedula* Hagen. Lawrence Co., streams near Bedford, Aug. 2, 18.

18. *Argia tibialis* Rambur. Lawrence Co., many streams, July 3 to Aug. 2; Miami Co., Eel River, Aug. 2; Monroe Co., creek five miles south of Bloomington, June 28; Rush Co., Flat Rock Creek, Aug. 6.

² Uni. Mich., Mus. Zool., Misc. Publ. No. 2. 1917.

20. *Argia violacea* Hagen. **Fayette Co.**, Williams Creek, Aug. 5, 7; **Lawrence Co.**, near Bedford, July 3, Aug. 2; **Miami Co.**, Eel River, Aug. 2; **Monroe Co.**, creek five miles south of Bloomington, June 28; **Parke Co.**, ponds near Turkey Run State Park and Rockville, July 6; **St. Joseph Co.**, lake, Notre Dame, Aug. 11.

21. *Enallagma antennatum* Say. **Parke Co.**, pond near Rockville, July 6, common.

22. *Enallagma aspersum* Hagen. **Fulton Co.**, pond five miles north of Rochester, Aug. 10; **Lawrence Co.**, pool in sink hole four miles north of Bedford, June 28.

22a. *Enallagma basidens* Calvert. **Gibson Co.**, old water supply lake, Oakland City, July 28, 1929, one male; new water supply reservoir, Oakland City, July 1, 1930, five males. This species was described from Texas and has been known previously, only from the Southwest.

25. *Enallagma civile* Hagen. **Lawrence Co.**, small pool in sink hole four miles north of Bedford, June 28, stream two miles south of Bedford, Aug. 18, 20; **Miami Co.**, Eel River, Aug. 2; **Parke Co.**, pond near Rockville, July 6; **Pike Co.**, pond, Aug. 9; **St. Joseph Co.**, Leeper Park, South Bend, and lake, Notre Dame, Aug. 11. At the small pool in Lawrence County this species was associated with *E. aspersum*; both were numerous; 14 males of *civile* and 11 of *aspersum* were taken.

27. *Enallagma divagans* Selys. **Martin Co.**, stream near Lawrence county line, June 15, five males.

29. *Enallagma exsulans* Hagen. **Daviess Co.**, stream near Washington, June 15; **Fayette Co.**, Williams Creek, Aug. 5; **Lawrence Co.**, streams near Bedford, July 3, Aug. 20; **Martin Co.**, stream near Lawrence County line, June 15; **Miami Co.**, Eel River, Aug. 2; **Rush Co.**, Flat Rock Creek, Aug. 6.

34. *Enallagma signatum* Hagen. **Lawrence Co.**, stream, near Bedford, Aug. 18; **Pike Co.**, pond, Aug. 9; **St. Joseph Co.**, Leeper Park, South Bend, Aug. 10.

41. *Ischnura posita* Hagen. **Clark Co.**, reservoir, state forest, July 15; **Lawrence Co.**, stream, one to two miles south of Bedford, June 22, July 2, 18, 20; **St. Joseph Co.**, Leeper Park, South Bend, Aug. 10. Although taken in many localities during the season, this species was nowhere as common as *I. verticalis*, with which it is usually associated.

43. *Ischnura verticalis* Say. More specimens of this species than of any other are included in the 1931 collections. It was captured in the following counties for the first time: **Clark, Daviess, Fayette, Fulton, Lawrence, Martin, Rush, St. Joseph and Washington.**

44. *Anomalagrion hastatum* Say. **Lawrence Co.**, pool in sink hole four miles north of Bedford, June 28, July 21.

45. *Tachopteryx thoreyi* Hagen. **Huntington Co.**, bog, Monument City, June 21. Fifteen males and one female of this rare species were captured at the same locality where it was found in 1929 and 1930. "9:00-11:00 a.m. Saw many more we should have caught. Day bright, hot, sultry, with thunder and rain in the afternoon" (field notes—E. B. W.). One of the males had the head of an ant, *Camponotus herculeanus* (L.) subsp. *pennsylvanicus* De Geer (determined by F. M. Gaige), firmly clamped by the mouthparts to the tarsus of the second

left leg; the remainder of the ant had apparently been chewed off by the dragonfly.

48. *Cordulegaster obliquus* Say. This species was described from Indiana over ninety years ago, but it has been recorded from the state only twice since that time; a female was taken by C. C. Deam at the Forest Reserve, Clark County, June 18, 1920, and four males by E. B. Williamson near Indianapolis, May 27, 1921. Two males were taken during 1931, one each on July 15 and 26, both by M. J. Young, in the same general locality as that of the Deam capture—the state forest at Henryville, Clark County. No further data is available for the capture on July 26, but the author accompanied the collector when the specimen was taken July 15. This insect was taken in an open space, about two acres in extent, surrounded by wooded hills. A watercourse, dry at that time except for frequent, small pools of water, passes within a few feet of one corner of the open area. A careful examination of the entire open area and the stream bed revealed no more dragonflies.

68. *Dromogomphus spinosus* Selys. Lawrence Co., stream two miles west of Bedford, Aug. 2, one male with prey, a female *Argia apicalis*, of which the head, prothorax and legs had been eaten; Miami Co., Eel River, Aug. 2, six males and three females.

69. *Dromogomphus spoliatus* Hagen. Lawrence Co., field, Moses Fell Annex farm, July 25, a female; stream two miles west of Bedford, Aug. 2, two males and one female. "The female was seen striking the abdomen against the water near a partly submerged piece of wood, probably ovipositing. A number of Gomphines were seen here today, but only a few *Macromias*, although previously *Macromias* had been rather common and Gomphines rare" (field notes, Aug. 2. B. E. M.).

70. *Boyeria vinosa* Say. Fayette Co., Williams Creek, Aug. 4, one male, Sept. 13, five males.

72. *Anax junius* Drury. Fayette Co., Fairview, in a barn lot far from water, Aug. 1, a female; Lawrence Co., pool in sink hole four miles north of Bedford, July 21; Miami Co., Eel River, Aug. 2; Montgomery Co., stream five miles west of Crawfordsville, July 6.

83. *Macromia illinoiensis* Walsh. Gibson Co., Footes' Lake, July 18, a male was taken in a lane through the woods near the lake; Martin Co., near Shoals, July 17, two males; Miami Co., Eel River, Aug. 2, one male. Many *Macromias* were flying along roads and over open fields about a half mile from White River at the Martin County locality.

84. *Macromia pacifica* Hagen. Miami Co., Eel River, Aug. 2, two males were taken, possibly a dozen seen—flying wild; Wells Co., Wabash River, Aug. 30, a male and a female, the only *Macromias* seen, were captured by Norman Shufelt, "all dragonflies rare today—saw also *Enallagma exsulans*, many; *E. signatum*, one male; *Perithemis tenera*, two males; and a few *Argias*" (field notes. E. B. W.).

85. *Macromia taeniolata* Rambur. Lawrence Co., stream two miles west of Bedford, July 13, two males, Aug. 1, four males, Aug. 2, one male; a male flew into the car while I was driving along a road five miles northwest of Bedford, July 29. This species was very numerous at the stream west of Bedford during July and the early part of August. This stream was about 50 feet wide and apparently rather deep; the

banks were high and steep, rock bluffs in places. A narrow growth of trees and bushes lined either bank, but the water was never entirely shaded. There was little herbaceous growth on the banks or in the water; the water was usually muddy. Collecting was done only near a bridge over the stream. Only a few other species of dragonflies were seen here.

87. *Epicordulia princeps* Hagen. Clark Co., reservoir, state forest, July 15, three males.

89. *Tetragoneuria cynosura* Say. Gibson Co., water supply reservoir, Oakland City, July 14, a male.

94. *Somatochlora linearis* Hagen. Clark Co., state forest, Henryville, July 8 to 29. When I visited the state forest, July 23, I saw one or more individuals of this genus along a stream bed of moist sand and gravel with frequent pools of water, but failed to make a capture. Students at the Purdue Forestry Camp reported that dragonflies of this genus frequently flew along the paths and roads at the camp which is not far from the stream bed. The insect collections made at the camp contained fourteen males and eight females of *S. linearis*.

99. *Libellula luctuosa* Burmeister. Clark Co., state forest, July 23 (P. U.); Fulton Co., pond five miles north of Rochester, Aug. 10; Lawrence Co., creek one to three miles south of Bedford, June 18 to August 20; Miami Co., Eel River, Aug. 2; St. Joseph Co., swamp, seven miles south of Mishawaka, June 13, lakes at Lakeville and Notre Dame, Aug. 10, 11; Washington Co., pond along Road 150, July 14.

100. *Libellula pulchella* Drury. Fayette Co., Williams Creek, Aug. 5, 7; Fulton Co., pond five miles north of Rochester, Aug. 10; Lawrence Co., several localities, June 12 to Aug. 2; Miami Co., Eel River, Aug. 2; Parke Co., (T R); Rush Co., Rushville, June 19, 21, 1930.

104. *Plathemis lydia* Drury. The following new county records for this species were made in 1931: Clark, Fayette, Fulton, Lawrence, Martin, Miami, Rush and St. Joseph. Many individuals of this species, both males and females, were noted along a roadside west of Lafayette, apparently far from water, July 4.

105. *Perithemis tenera* Say. Lawrence Co., pond near Mitchell, July 27; St. Joseph Co., lakes at Lakeville and Notre Dame, Aug. 10, 11; Washington Co., pond along Road 150, July 14.

107. *Erythemis simplicicollis* Say. Fulton Co., pond five miles north of Rochester, Aug. 10; Lawrence Co., creek one mile south of Bedford, July 3; Marshall Co., Donaldson Lake, June 25; Rush Co., Rushville, June 21; St. Joseph Co., lake, Notre Dame, Aug. 11.

109. *Sympetrum corruptum* Hagen. This species was common in the vicinity of West Lafayette about April 10-15, and was found at a wet weather pool at Bluffton, April 13.

111. *Sympetrum obtusum* Hagen. Marshall Co., Donaldson Lake, June 25, four males and two females.

112. *Sympetrum rubicundulum* Say. Fayette Co., swamp near Williams Creek, July 15, Aug. 5, 7, Sept. 13, common; Gibson Co., Oct. 1, 1930; Lake Co., dry marsh three miles east of Merrillville, Aug. 12; Marshall Co., Donaldson Lake, June 25; Rush Co., Rushville, June 21, 30, 1930.

113. *Sympetrum semicinctum* Say. **Fayette Co.**, Williams Creek and swamp, July 15, two males; Aug. 5, six males, one female; Aug. 7, seven males.

114. *Sympetrum vicinum* Hagen. **St. Joseph Co.**, lake at Lakeville, Aug. 11, two males and three females, all teneral; **Washington Co.**, pond along Road 150, July 14, one female.

115. *Pachydiplax longipennis* Burmeister. **Fulton Co.**, pond five miles north of Rochester, Aug. 10; **Lawrence Co.**, creek one mile south of Bedford, July 3; **Parke Co.**, (T R); **Rush Co.**, Rushville, June 19, 21, 1930; Flat Rock Creek, Aug. 6; **St. Joseph Co.**, Leeper Park, South Bend, Aug. 11; **Washington Co.**, pond along Road 150, July 14.

118. *Celithemis elisa* Hagen. **St. Joseph Co.**, lake at Notre Dame, Aug. 11, six males.

119. *Celithemis eponina* Drury. **St. Joseph Co.**, lake at Notre Dame, Aug. 11, one female.

121. *Pantala flavescens* Fabricius. **Lawrence Co.**, orchard near Orleans, Aug. 21.

122. *Pantala hymenaea* Say. **Jennings Co.**, near North Vernon, driven into car by wind, Aug. 6; **Lawrence Co.**, orchards and ponds, June 8 to July 28; **Miami Co.**, Eel River, Aug. 2, "several males seen over river" (E. B. W.). Pantalas and Trameas were frequently seen in orchards, around ponds and along roads in many parts of the state.

124. *Tramea lacerata* Hagen. **Lawrence Co.**, orchard near Bedford, June 9.

125. *Tramea onusta* Hagen. **Gibson Co.**, Footes' Lake, July 18, one male; **Lawrence Co.**, small pool in sink hole four miles north of Bedford, June 28, a pair flying tandem, and July 21, a male; temporary pond near Bedford, July 22, a male.