

Notes and Records of Indiana Odonata, 1941-1950

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In 1917 Williamson (5) published "An annotated list of the Odonata of Indiana"; this paper listed 125 species and gave the records for the state, by counties and thirds of months, for each species. In 1921 he published additional records, including one of a species not previously known from the state.

The author has published a series of "Records of Indiana Dragonflies" (1925-1941), summarizing the field observations and collections from 1920 to 1940 inclusive. An additional 15 species were added to the state list in these papers (2). Scott studied the Odonata of the Tippecanoe River State Park in Pulaski County during the summers of 1943-1945 and published an annotated local list (4) of 59 species.

The author has also published a series (1942-1948) of papers on the distribution and relative seasonal abundance of the Indiana species of Odonata based upon the 1900-1940 records. In these papers (3) the seasonal range for each species is shown in a time-frequency graph based upon the frequency of collection or observation in each third of a month.

The author has collected or received from other collectors 6590 specimens of Odonata taken in Indiana during the period of 1941 to 1950 inclusive. The observations and records of these collections, which include 103 species, increase our knowledge of the dragonfly fauna of Indiana considerably. Three species not previously known from the state are included; these additions bring the state list of Odonata to 144 species.

Records extending the seasonal range of any species (from that given in the 1942-1948 studies), counties in which any species has been found for the first time, records of rare species and new or unusual observations of other species are given in the following list. The numbers of Williamson's 1917 list and the later interpolations are followed. Species recorded from Indiana for the first time are starred (*).

3. *Calopteryx maculatum* (Beauvois). Benton.

5. *Hetaerina titia* (Drury). Gibson.

6. *Lestes congener* Hagen. Tippecanoe.

7. *L. disjunctus* Selys. Cass, Jefferson, Randolph, Tippecanoe, Warren.

9. *L. forcipatus* Rambur. Tippecanoe.

10. *L. inaequalis* Walsh. Clark. This species was fairly common at Schlamm Lake in the Clark County State Forest during June of both 1949 and 1950, and a male and a female were taken August 12, 1950, although it had never been noted in this area before. Only one male was taken at nearby Francke Lake—in June, 1949. The August

record extends the season of this species as the latest previous record was in mid-July.

11. *L. rectangularis* (Say). Clark, Fountain, Lawrence, Marion, Randolph, Tippecanoe, White. New early records: 2 ♂ 3 ♀, May 29, 1942, 4 ♂ 2 ♀, May 30, 1946, pools, near Oakland City.

12. *L. dryas* Kirby. Carroll, Fountain, Tippecanoe, Warren.

13. *L. unguiculatus* Hagen. Carroll, Marion, Warren. New late records: Oct. 3 (3 ♂) and 10 (1 ♀), 1943, Hadley's Lake, Tippecanoe County.

14. *L. vigilax* Hagen. Cass.

16. *Argia moesta* (Hagen). Knox, Warren.

17. *A. sedula* (Hagen). Gibson.

18. *A. tibialis* (Rambur). Carroll, Johnson. New late records: 5 ♂ 6 ♀, Sept. 20, 1942, Patoka River, near Princeton; 2 ♂, Oct. 7, 1943, lake, Boonville.

19. *A. translata* Hagen. Marion. A female of this species was taken at the Riverside Fish Hatchery, August 15, 1948; the only previous record for the state was based on four males collected at St. Paul, Shelby County, in August, 1911. *A. translata* has a wide distribution, ranging from Connecticut and North Carolina through the Ohio Valley, Oklahoma, Texas, Mexico and Central America to Venezuela.

20. *A. violacea* (Hagen). Benton, Putnam.

21. *Enallagma antennatum* (Say). Benton, Cass.

22a. *E. basidens* Calvert. Cass, Fountain, Parke, Posey, Randolph, Tippecanoe, White. New late record: 3 ♂, Oct. 7, 1943, lake, Boonville.

24. *E. carunculatum* Morse. Cass.

25. *E. civile* (Hagen). Putnam, Warren.

27. *E. divagans* Selys. Clark.

29. *E. exsulans* (Hagen). Benton.

30. *E. geminatum* Kellicott. Cass.

33. *E. vesperum* Calvert. Blackford.

34. *E. signatum* (Hagen). Warren.

35. *E. traviatum* Selys. Cass.

*35a. **Teleallagma daeckii* (Calvert). This species has been known previously only from the Atlantic coastal area—New Jersey, Maryland, the Carolinas and Florida. The species was recognized as new to the state when individuals were found among vegetation that was in deep shade and still wet with dew, along the margin of Schlamm Lake, about nine o'clock in the morning of June 25, 1949. Thorough search at this time yielded five males and one female, but no additional specimens were taken in extensive collecting later in the day. Seven males and one female were taken between eight and nine o'clock the following morning at the same locality. All of these were found in a very limited area, around shrubs growing in the edge of the water near the dam at the lower end of the lake. When disturbed these insects flew into the shrubs or other vegetation. In June, 1950, this species was relatively common along the lake margin for some distance from either

end of the dam and specimens could be taken at any time during the day; 50 males and 33 females were collected. A female of this species, not recognized when collected, was found in the collection from Schlamm Lake, June 28, 1947.

37. *Nehalennia irene* Hagen. LaPorte, Tippecanoe.

37a. *Amphiagrion abbreviatum* (Selys). Benton.

38. *A. saucium* (Burmeister). Carroll.

41. *Ischnura posita* (Hagen). Blackford, Benton. New late records: Sept. 26 (1 ♂), Oct. 3 (2 ♂), Oct. 10 (1 ♂ 1 ♀), 1943, Oct. 29 (1 ♂), 1950, Hadley's Lake; 2 ♂ 3 ♀, Oct. 7, 1943, lake, Boonville. These records extend the season for this species a month as the latest previous records were for the last third of September.

43. *I. verticalis* (Say). Putnam.

44. *Anomalagrion hastatum* (Say). Carroll, Marion, Warrick, White.

45. *Tachopteryx thoreyi* (Hagen). Males of this species were collected along the Tippecanoe River, near Springboro, Carroll County, in the vicinity of a boggy area, June 21 and July 5, 1941.

*46a. **Cordulegaster erroneus* Hagen. A male of this species, collected along the Tippecanoe River, Tippecanoe County, June 7, 1947, was given me by a student. The known distribution of *erroneus* is discontinuous, including an eastern area extending from Ohio and Connecticut to Florida and a western region in Washington, Nevada and California, with no records for the territory between the two.

49. *Progomphus obscurus* (Rambur). Benton, Carroll, Tippecanoe.

50. *Hagenius brevistylus* Selys. Crawford, Carroll.

52. *Erpetogomphus designatus* Hagen. Tippecanoe, Warren. New early records: 2 ♂ 6 ♀, June 11, 1941, gravel pit, Emison; 1 ♀ each—June 14, 1941, Wabash River, opposite Covington, and June 15 & 22, 1942, near West Lafayette; the earliest previous record was mid-July.

·52a. *Gomphus amnicola* Walsh. Fourteen males and nine females of this rare species were taken from 1941 to 1945 along the Wabash River in Tippecanoe and Warren counties. New early record: 4 ♂ 5 ♀, June 14, 1941, Wabash River, opposite Covington.

55a. *G. externus* Hagen. Carroll, Fountain, Knox, Vermillion. New seasonal records: 1 ♂, May 29, 1941, in greenhouse, West Lafayette; 1 ♀, Aug. 4, 1946, Patoka River, near Princeton. The previously known seasonal range of this species in Indiana included the last two thirds of June and the first and last thirds of July.

56. *G. fraternus* Say. Benton, Carroll.

58. *G. graslinellus* Walsh. Clark.

59. *G. lividus* Selys. Starke.

59a. *G. notatus* Rambur. Tippecanoe.

59b. *G. plagiatus* Selys. New late record: 1 ♂ 1 ♀, Sept. 20, 1942, Patoka River, near Princeton.

60. *G. quadricolor* Walsh. Carroll.

62. *G. spiniceps* Walsh. Tippecanoe, 1 ♂, Aug. 11, 1941, near Tippecanoe River—new late record.

62a. *G. lentulus* Needham. Knox County, pond, 1 ♂, Aug. 15, 1939. The few previous records of this species in Indiana have been in mid-July. Mrs. Gloyd (1941) has shown that Williamson's *subapicalis*, the name under which this species has been reported from Indiana previously is a synonym of *lentulus* Needham.

63. *G. submedianus* Williamson. New early record: 4 ♂ 1 ♀, May 30, 1942, Foote's Lake, Gibson County.

64. *G. vastus* Walsh. Carroll, Vanderburg.

65. *G. ventricosus* Walsh. Carroll, Warren.

66. *G. villosipes* Selys. Clark.

68. *Dromogomphus spinosus* Selys. Clark.

69. *D. spoliatus* (Hagen). New early records: June 9 (1 ♂ 1 ♀), 12 (1 ♂, 1941, 1 ♀, June 25, 1949, 1 ♂, June 26, 1950, lakes, Clark County State Forest.

72. *Anax junius* (Drury). Clark, Marion.

75. *Aeshna constricta* Say. Posey.

78. *A. umbrosa* Walker. Carroll. New late record: 1 ♂, Oct. 21, 1947, Burnett's Creek, Tippecanoe County.

81. *Epiaeschna heros* (Fabricius). Knox, Monroe.

83. *Macromia illinoensis* Walsh. Carroll, Fountain.

84. *M. pacifica* Hagen. Tippecanoe. A male of this species, taken "hawking along a tree-bordered road" near the Tippecanoe River, July 4, 1949, is the first record of this species in the state in almost 20 years.

87. *Epicardulia princeps* (Hagen). Tippecanoe.

89. *Tetragoneuria cynosura* (Say). Blackford, Carroll, Greene, Marion, Noble, Warrick, White. New early record: 1 ♀, wheat field, White County, June 8, 1945.

93. *Somatochlora ensigera* Martin. Tippecanoe, 1 ♂, July 4, 1949. This specimen was taken along an old farm road, between a fence and a row of trees and shrubs, about 1/4 mile from Hadley's Lake. Only a few other dragonflies—*Plathemis lydia*, *Libellula luctuosa*, *Erythemis simplicicollis* and *Ischnura verticalis*—were fluttering about.

98. *Libellula incesta* Hagen. Clark.

99. *L. luctuosa* Burmeister. Benton, Cass, Porter, Posey, Putnam.

102. *L. semifasciata* Burmeister. Putnam.

103. *L. vibrans* Fabricius. Clark, five specimens were taken in the State Forest—1 ♀, June 26, 1950, Francke Lake; streams, 1 ♂, June 26, 1948, 3 ♂, June 24, 1950. All the males were found at points where the course of the stream made a sharp turn in a "semi-open" space in the forest.

104. *Plathemis lydia* (Drury). Benton, Putnam.

105. *Perithemis tenera* (Say). Putnam, Tippecanoe. New early records: 1 ♂, May 30, 1942, Foote's Lake; 1 ♂, June 9, 1941, Schlamm Lake.

107. *Erythemis simplicicollis* (Say). Cass, Posey.

108. *Sympetrum ambiguum* (Rambur). Lawrence, Tippecanoe. New seasonal records: 2 ♂, May 30, 1946, gravel pit, West Lafayette; 1 ♂ 1 ♀, Oct. 1, 1944, Hadley's Lake.

110. *S. internum* Montgomery. This species, long known as *decisum*, has always been very rare in Indiana, although Walker has recorded it frequently throughout Canada. However, in 1943 it "exploded" into great abundance at two ponds in Tippecanoe County and, probably, throughout a large area for which we have no records. Collections have been made over a period of several years at Hadley's Lake, a body of water about three miles northwest of West Lafayette. This lake has a considerable area but is frequently reduced to a few pools of stagnant water and extensive mud flats, in the late summer. On September 23, 1940, a few specimens of *Sympetrum* were obtained here, and when the specific determinations were made the following winter the collection was found to consist of *S. internum*—2 ♂, *S. obtrusum*—5 ♂, and *S. rubicundulum*—20 ♂ 2 ♀. In spite of the interest in the appearance of this species, no visit could be made to Hadley's Lake in 1941 and only one in 1942, on September 13, when the only specimens of *Sympetrum* obtained were a male and a female each of *rubicundulum* and *vicinum*. Four visits were made in each of the following years—1943 and 1944—and because of the abundance of *Sympetrum* extensive collections were made to determine the proportion of the different species present. In 1943 *internum* was by far the most abundant species of the genus, but in 1944 *obtrusum* was the most abundant and *rubicundulum* was as common as *internum*.

	1943				1944		
	Sept. 26	Oct. 3	Oct. 10	Oct. 20	Sept. 10	Sept. 24	Oct. 1
<i>ambiguum</i>					1 ♂	1 ♀	1 ♂ 1 ♀
<i>internum</i>	72 ♂	110 ♂	67 ♂		13 ♂	8 ♂	14 ♂
<i>obtrusum</i>	15 ♂	18 ♂	21 ♂	1 ♂	94 ♂	45 ♂	38 ♂
<i>rubicundulum</i>	5 ♂	10 ♂ 3 ♀	3 ♂		19 ♂ 4 ♀	6 ♂	9 ♂ 2 ♀
<i>vicinum</i>	1 ♂ 1 ♀	1 ♀	3 ♀				

No dragonflies were seen on October 18, 1944

Visits to the same locality since 1944 have been infrequent and very few specimens of *Sympetrum* have been found: Oct. 21, 1947, *obtrusum*—3 ♂; Oct. 7, 1945, *vicinum*—2 ♂; July 4, 1949, *rubicundulum*—1 ♀; Oct. 29, 1950, no dragonflies of this genus. At ponds several miles east of Hadley's Lake, collections of *Sympetrum* were made in August and September, 1943, and *internum* was the most abundant species in the September collections. In collections on August 15, 21 and 22, only *rubicundulum* was found—2 ♂, 2 ♂, and 4 ♂ 2 ♀, respectively; on September 28 and 30 the collections included *internum*—39 ♂ and 44 ♂, *obtrusum*—1 ♂ and 5 ♂, *rubicundulum*—6 ♂ and 4 ♀ 1 ♀, and *vicinum*—2 ♂ 2 ♀ and 1 ♂ 4 ♀.

A collection from a pond at Stewartsville, Posey County, Oct. 5, 1943, included 1 ♂ each of *internum* and *rubicundulum* and 4 ♂ 2 ♀ of *vicinum*.

All previous records of *internum* in Indiana were in the middle third of September.

111. *S. obtusum* (Hagen). Fountain. New late records: Oct. 20, 1943 and Oct. 21, 1947, Hadley's Lake, as listed in the discussion of *S. internum* above.
112. *S. rubicundulum* (Say). Carroll, DeKalb, Fountain, Porter, Posey, Randolph.
113. *S. semicinctum* (Say). Cass.
114. *S. vicinum* (Hagen). Carroll, Posey, Putnam, Warrick.
115. *Pachydiplax longipennis* (Burmeister). Cass, Clay, Porter, Putnam, Warren, White.
118. *Celithemis elisa* (Hagen). Cass, Knox. New late records: 3 ♂, Sept. 19, 1942, and 1 ♂, Oct. 7, 1943, lake, Boonville.
119. *C. eponina* (Drury). Cass, Clark, Tippecanoe. New late records: 6 ♂, Sept. 19, 1942, and 1 ♂, Oct. 7, 1943, lake, Boonville.
- 119a. *C. fasciata* Kirby. This species was added to the state list in 1937 on the record of a specimen from a lake at Oakland City and the species was found to be well established there later. In 1946 two males were captured in the Clark County State Forest and the species has since become rather common at Francke and Schlamm lakes in the forest. The specimens from this area show considerable variation and tend to be intermediate between *C. monomelaena* from northern Indiana and Michigan and *C. fasciata* from the southern states. The Oakland City records were in mid-June and mid-July; 3 ♂ 1 ♀ were taken at the Clark County lakes, August 11, 1950.
120. *C. monomelaena* Williamson. Cass.
- *120a. **C. verna* Pritchard. This species has been known previously only from North Carolina, Georgia and Oklahoma. It was found at Schlamm Lake in both 1949 and 1950—1 ♂, June 25 and 1 ♀, June 26, 1949; 1 ♂, June 24, 1950.
123. *Tramea carolina* (Linné). Warrick.
124. *T. lacerata* Hagen. Greene, Putnam.

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