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## A LIST OF THE ODONATA OF THE LA RUE-PINE HILLS ECOLOGICAL AREA

T. E. Vogt and J. E. McPherson<sup>1</sup>

### ABSTRACT

A survey of the adult odonate fauna of the La Rue-Pine Hills Ecological Area, Union County, Illinois, was conducted during 1983–1985. Thirty six species were collected including the damselfly *Telebasis byersi* Westfall; this damselfly is known to occur in Illinois only at Pine Hills.

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The La Rue-Pine Hills Ecological Area (hereafter referred to as Pine Hills) is part of the Shawnee National Forest and located in the northwest corner of Union County, Illinois, ca. 15 miles northeast of Cape Girardeau, Missouri. It encompasses only ca. 3 miles<sup>2</sup>, but is well known for its high plant and animal diversity (McPherson and Mohlenbrock 1976). Pine Hills includes dry forests and hill prairies atop limestone bluffs, and moist forests at the bases of the bluffs that surround La Rue Swamp and Winters Pond. The topography and vegetation of the area were discussed in detail by McPherson and Mohlenbrock (1976).

During the past several years, one of us (JEM) has been involved with a series of studies of the Pine Hills insect fauna including surveys of the Pentatomoidea (McPherson and Mohlenbrock 1976) and butterflies (Sites and McPherson 1981). This paper presents a survey of the Odonata.

The literature on the Odonata of Illinois is limited and scattered. The most recent comprehensive faunal lists are found in Needham and Westfall's 1955 manual on the dragonflies of North America and Montgomery's 1967 paper on the Odonata of the north central states. Since their publication, only 10 species have been added to the state list including *Dromogomphus spoliatus* (Hagen) (Westfall and Tennesen 1979), *Tetragoneuria costalis* Selys (Dunkle 1983), *Anax longipes* Hagen, *Neurocordulia xanthosoma* (Williamson) (Brigham and Brigham 1979), *Telebasis byersi* Westfall, *Tachopteryx thoreyi* (Hagen), *Aeshna mutata* Hagen, *Celithemis fasciata* Kirby, *Ladona deplanata* (Rambur), and *Dytthemis fugax* Hagen (Vogt and McPherson 1985).

Because so little is known about Illinois Odonata, we also here include the distribution of the Pine Hills species in southern Illinois and the range of collection dates for both areas: all data are based on adults. Southern Illinois is defined here as that part of the state south of a line from St. Louis, Missouri, to Vincennes, Indiana (Fig. 1).

### MATERIALS AND METHODS

Collecting trips were made at about one week intervals from March through October in 1983 and through November in 1984, and from March through May in 1985. Selective collecting was made to concentrate on those species known to be poorly represented in the Southern Illinois University Entomology Collection, Zoology Research Museum (SIUEC)

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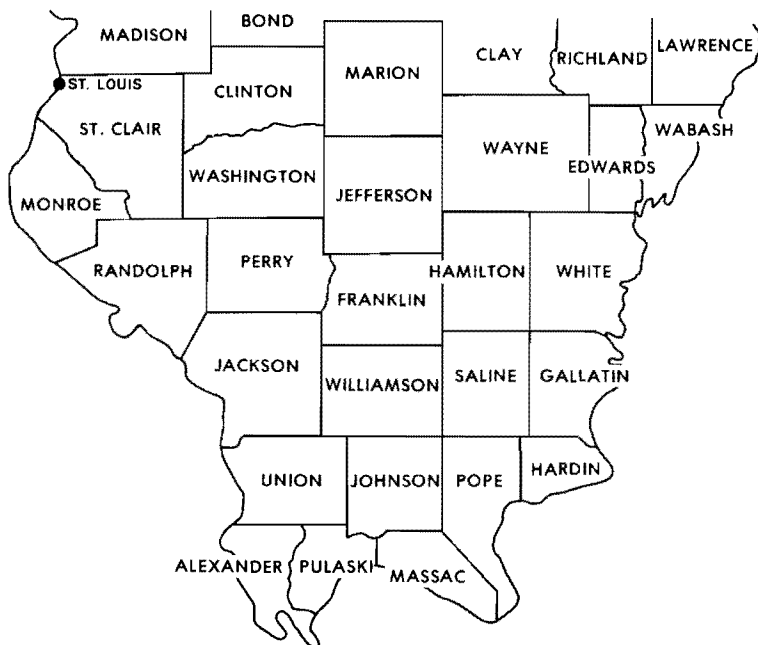


Fig. 1. Counties of southern Illinois.

and, therefore, numbers of specimens of each species in the SIUEC are not necessarily representative of relative numbers in the field. Records of flight activity for both Pine Hills and southern Illinois were supplemented with those from specimens deposited in the SIUEC by us prior to this study or by other collectors.

## RESULTS AND DISCUSSION

Thirty six species were collected at Pine Hills, and most of these are widely distributed in southern Illinois. However, *Lestes inaequalis* Walsh and *T. byersi* were represented only by Pine Hills specimens. *T. byersi* prior to its discovery at Pine Hills was known only from North Carolina, Florida, Alabama (Westfall 1957), and South Carolina (Huggins and Brigham 1982).

Based on the species now known to occur in Illinois, ca.  $\frac{1}{3}$  were represented in the Pine Hills fauna. This appears to be rather high diversity judging from the uniformity of the aquatic environment (i.e., swamp).

## ODONATA IN THE LA RUE-PINE HILLS ECOLOGICAL AREA

### LESTIDAE

*Lestes inaequalis* Walsh. 10 May–13 Sept.

*Lestes rectangularis* Say. 27 April–10 Oct., also from Franklin, Jackson, Union<sup>a</sup>, and Williamson counties, 27 April–10 Oct.

## COENAGRIONIDAE

- Anomalagrion hastatum* (Say). 6 June–26 July, also from Jackson, Wayne, and Williamson counties. 25 April–24 Aug.
- Enallagma aspersum* (Hagen). 13 July, also from Jackson, Pope, and Williamson counties. 9 May–27 Oct.
- Enallagma basidens* Calvert. 4 May–19 May, also from Jackson, Union<sup>a</sup>, Wayne, and Williamson counties. 26 April–12 Oct.
- Enallagma civile* (Hagen). 24 April–2 Oct., also from Jackson, Union<sup>a</sup>, Washington, Wayne, and Williamson counties. 18 April–3 Oct.
- Enallagma geminatum* Kellicott. 3 May–10 Aug., also from Jackson and Williamson counties. 3 May–17 Sept.
- Enallagma signatum* (Hagen). 9 May–24 July, also from Jackson and Pope counties. 30 April–6 Sept.
- Enallagma vesperum* Calvert. 3 May–17 May, also from Jackson and Williamson counties. 3 May–12 Sept.
- Isonyia posita* (Hagen). 15 March–12 Oct., also from Franklin, Jackson, Pope, Saline, Union<sup>a</sup>, and Williamson counties. 15 March–18 Oct.
- Isonyia verticalis* (Say). 3 April–23 July, also from Jackson, Marion, Pope, Richland, Saline, Union<sup>a</sup>, Washington, and Williamson counties. 3 April–15 Sept.
- Telebasis byersi* Westfall. 6 July–20 Sept.

## CORDULEGASTRIDAE

- Cordulegaster obliqua* (Say). 4 June, also from Pope and Union<sup>a</sup> counties. 29 May–7 July.

## GOMPHIDAE

- Argemophus submedianus* (Williamson). 27 June, also from Jackson, Monroe, and St. Clair counties. 29 May–8 Aug.

## AESHNIDAE

- Anax junius* (Drury). 6 April–30 Aug., also from Alexander, Franklin, Jackson, Perry, Pope, Union<sup>a</sup>, and Williamson counties. 6 April–11 Oct. (sight record, 16 March, Jackson County).
- Epiaschna heros* (Fabricius). 17 April–22 July, also from Pope, Jackson, and Williamson counties. 11 April–22 July.
- Naisiaschna pentacantha* (Rambur). 3 May–29 July, also from Jackson, Perry, Pope and Union<sup>a</sup> counties. 3 May–29 July.

## CORDULIIDAE

- Tetragoneuria costalis* Selys. 19 April–10 June, also from Jackson, Perry, Pope, and Williamson counties. 16 April–10 June.
- Tetragoneuria cynosura* (Say). 4 April–16 May, also from Jackson, Pope, and Williamson counties. 24 March–26 May.

## LIBELLULIDAE

- Celithemis elisa* (Hagen). 24 April–24 May, also from Franklin, Jackson, Perry, Pope, and Williamson counties. 24 April–12 Sept.
- Celithemis eponina* (Drury). 3 July–1 Sept., also from Jackson, Johnson, Pope, and Union<sup>a</sup> counties. 3 July–17 Sept.
- Erythemis simplicicollis* (Say). 16 April–10 Oct., also from Jackson, Jefferson, Pope, Union<sup>a</sup>, and Williamson counties. 16 April–10 Oct.

- Libellula cyanea* Fabricius. 26 May, also from Franklin, Jackson, and Pope counties, 15 May–9 Aug.
- Libellula incesta* Hagen. 24 May–26 Aug., also from Alexander, Franklin, Jackson, Pope, Union<sup>a</sup>, and Williamson counties, 20 May–9 Sept.
- Libellula luctosa* Burmeister. 7 May–29 July, also from Jackson, Jefferson, Monroe, Pope, Saline, St. Clair, Union<sup>a</sup>, Wayne, White, and Williamson counties, 22 April–21 Sept.
- Libellula pulchella* Drury. 25 May, also from Jackson, Johnson, Pope, and Union<sup>a</sup> counties, 23 May–19 Aug.
- Libellula vibrans* Fabricius. 24 May–20 July, also from Alexander, Jackson, Johnson, Pope, Union<sup>a</sup>, and Williamson counties, 30 April–24 July.
- Pachydiplax longipennis* (Burmeister). 24 April–10 Oct., also from Alexander, Jackson, Pope, St. Clair, Union<sup>a</sup>, and Williamson counties, 24 April–10 Oct.
- Pantala flavescens* (Fabricius). 19 Sept., also from Jackson, Perry, and Williamson counties, 24 April–10 Oct.
- Perithemis tenera* (Say). 24 May–3 Sept., also from Franklin, Jackson, Marion, Pope, St. Clair, Union<sup>a</sup>, Wayne, White, and Williamson counties, 20 April–13 Oct.
- Plathemis lydia* (Drury). 14 April–5 Sept., also from Jackson, Monroe, Pope, Saline, St. Clair, Union<sup>a</sup>, Washington, Wayne, and Williamson counties, 11 April–7 Oct.
- Sympetrum ambiguum* (Rambur). 2 July–15 Oct., also from Monroe, Pope, and Williamson counties, 2 July–15 Oct.
- Sympetrum internum* Montgomery. 8 Oct., also from Williamson County, 8 Oct.–23 Oct.
- Sympetrum vicinum* (Hagen). 16 July–10 Nov., also from Jackson, Johnson, Pope, and Williamson counties, 12 July–10 Nov.
- Tramea carolina* (Linnaeus). 3 May, also from Jackson, Pope, and Williamson counties, 15 April–2 Aug.
- Tramea lacerata* Hagen. 9 May–21 Aug., also from Jackson, Johnson, Monroe, Pope, Union<sup>a</sup>, and Williamson counties, 3 May–17 Sept.

<sup>a</sup> also collected in Union County outside Pine Hills.

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