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## Dragonflies of (Anisoptera) Arkansas

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# The Dragonflies (Anisoptera) of Arkansas

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## ABSTRACT

Previous publications have recorded 69 species of dragonflies for Arkansas. Three of these are deleted, but state records for 21 new species are reported herein, bringing the list to 87 species. Based on lists from adjacent states, an additional nine species are listed as probably occurring in Arkansas. County records are given for both naiads and adults of each species, as well as first and last capture dates for adults. Specific location and capture date are given for new state records when such data are available. The most species (39) have been reported from Washington County. Twenty-nine counties list from 1-5 species, and six counties list no records.

## INTRODUCTION

No previous publication deals with the dragonflies of Arkansas on a statewide basis. The information is scattered in broad regional works with incidental reference to Arkansas specimens (Hagen 1861; Muttkowski 1910; Needham and Heywood 1929; Needham and Westfall 1955; Kormondy 1960), lists of dragonflies from particular areas of the state (Adams 1900; Bick 1959; Whitcomb and Bell 1964; Houston 1970; Rickett 1976), or taxonomic studies including Arkansas material (Calvert 1901; Walker 1925; Byers 1939; Gloyd 1940; Westfall 1956, 1975).

The purposes of this paper are to present the first statewide species list, to delineate geographic distribution of adults and naiads by county, and to indicate first and last dates during which adults may be expected to be collected.

An attempt has been made to collect all information concerning species and distribution of Arkansas dragonflies. Information was compiled initially from the above-mentioned publications. In addition, considerable previously unpublished data were derived from collections of naiads from southeastern and southwestern Arkansas, University of Arkansas-Fayetteville, Arkansas State University Entomological Museum holdings, and collections by the authors in north-eastern and central Arkansas.

Previous publications have recorded 69 dragonfly species for Arkansas (Bick 1959; Houston 1970; Rickett 1976). Westfall (1975) removed *Gomphus fraternus* from the list as these proved to be *Gomphus ozarkensis*, a new species. Walker (1925) included Arkansas in the range of *Somatochlora filosa*, but since it has never been captured in the state, this species is deleted from the list. Rickett (1976) reported *Gomphus villosipes* which was later judged too small a naiad for specific determination; therefore, it is also deleted. State records for 21 new species are reported herein, bringing the list to 87 species. A vast amount of work remains before the species composition and distribution for Arkansas dragonflies are completely known. To date no dragonflies have been reported from six counties, 29 additional counties list from 1-5 species, and 19 additional counties list 6-10 species. Fifty-four counties (72%) have 10 or fewer species reported thus far, and 35 counties (47%) have five or fewer species reported to date (Figure 1). In the following list county records are given for both naiads and adults of a given species. First and last capture dates are also given for adults. New state records are indicated by an asterisk, and specific location and date of capture are provided for those species when such data were available.

Nomenclature for families is in accordance with Borror et al. (1976). Following general trends, certain genera and species are treated as follows: species of *Epicordulia* and *Tetragoneuria* are placed in *Epiheca* (Huggins et al. 1976); *albistylus* is removed from *Lanthus* to *Stylogomphus* (Chao 1954); *Cannacia* is replaced by *Brachymesia*; *Tarnetrum* is dropped and *corruptum* is placed in

*Sympetrum*; *Celithemis fasciata* and *monomelaena* are considered the same species (*fasciata*); and *Cordulegaster fasciata* and *obliqua* are recognized as the same species (*obliqua*) (Westfall, pers. comm.). Corrections in spelling include *Cordulegaster maculatus* and *obliquus* becoming *maculata* and *obliqua* (agreement in gender), while Aeschnidae and *Aeschna* now omit the letter "c" (e.g. Aeschnidae) (Westfall, pers. comm.).

## SPECIES LIST

### PETALURIDAE

*Tachopteryx thoreyi* (Hagen)

Adults (7-VI to 20-VII): Polk, Washington

### CORDULEGASTRIDAE

*Cordulegaster maculata* Selys

Naiads: Columbia, Saline

*Cordulegaster obliqua* Say

Adults (no date): Franklin

Naiads: Columbia, Drew, Garland

### GOMPHIDAE

*Dromogomphus armatus* Selys

Naiads: Marion, Pope, Saline

*Dromogomphus spinosus* Selys

Adults (12-VI to 5-IX): Conway, Franklin, Fulton, Independence, Marion, Sharp, Yell

Naiads: Bradley, Columbia, Fulton, Lawrence, Poinsett, Randolph, Saline

*Dromogomphus spoliatus* Hagen

Adults (4-VI to 5-IX): Franklin, Garland, Greene, Independence, Perry, Poinsett, Sharp, Washington

Naiads: Bradley, Clay, Craighead, Drew, Fulton, Jackson,

Lawrence, Randolph, Saline, Sevier

*Erpetogomphus designatus* Hagen

Adults (2-VII to 2-VIII): Calhoun, Marion

Naiads: Bradley, Drew, Sevier

*Gomphus (Hylogomphus) brevis* Hagen

Naiads: Montgomery

*Gomphus (Gomphus) descriptus* Banks

Adults (5-VII): Yell

\**Gomphus (Gomphurus) externus* Hagen

Adults (30-IV): Craighead - no specific location, 30-IV-71

Naiads: Little River - 2 mi N St. Hwy. 41, Red River bridge, 28-IX-75

*Gomphus (Gomphus) grasilinellus* Walsh

Adults (17-V to 23-VI): Franklin, Fulton, Lawrence, Logan, Sebastian, Washington

*Gomphus (Gomphurus) hybridus* Williamson

- Adults (26-IV): Yell  
 \**Gomphus (Stilurus) intricatus* Hagen  
 Adults (no date): Craighead - no specific location  
*Gomphus (Arigomphus) lentulus* Needham  
 Adults (5-VI to 23-VI): Franklin, Scott, Sebastian  
 Naiads: Poinsett  
*Gomphus (Gomphus) lividus* Selys  
 Adults (no date): Marion, Sharp  
 \**Gomphus (Arigomphus) maxwelli* Ferguson  
 Adults (24-V): Crittenden - borrow pit, Wapanocca Natl. Wildl. Refuge, 24-V-77  
*Gomphus (Gomphus) oklahomensis* Pritchard  
 Adults (20-IV): Franklin  
*Gomphus (Gomphurus) ozarkensis* Westfall  
 Adults (26-IV to 18-VI): Fulton, Marion, Montgomery, Sevier, Washington, Yell  
 \**Gomphus (Stylurus) plagiatus* Selys  
 Adults (24-VII to 31-VII): Cross - St. Francis River at St. Hwy. 42 bridge, 24-VII-76; Mississippi - Tyronza River at St. Hwy. 77 bridge, 21-VII-76  
 Naiads: Chicot - Mississippi River approx. 7 mi S St. Hwy. 82 bridge, 10-VII-75; Jackson - Village Cr. at St. Hwy. 14 bridge, 9-X-76; St. Francis - St. Francis River N of I-40 bridge, 28-IX-74  
 \**Gomphus (Gomphus) quadricolor* Walsh  
 Adults (24-VI): Stone - Blanchard Spring, Mauffray Coll. (Westfall, pers. comm.)  
 \**Gomphus (Stylurus) spiniceps* Walsh  
 Naiads: Randolph - Eleven Point River between Water Valley and Birdell, 17-VIII-76  
*Gomphus (Arigomphus) submedianus* Williamson  
 Adults (3-V to 27-VII): Jackson, Jefferson, Sharp  
 Naiads: Pulaski  
*Gomphus (Gomphurus) vastus* Walsh  
 Adults (no date): Franklin  
 Naiads: Bradley, Craighead, Drew, Greene, Howard, Miller, Randolph, Saline, Sevier  
*Hagenius brevistylus* Selys  
 Adults (12-VI to 26-IX): Fulton, Independence, Lawrence, Saline, Sharp, Washington  
 Naiads: Dallas, Drew, Fulton, Lawrence, Marion, Montgomery, Newton, Pike, Polk, Pulaski, Randolph, Saline, Scott, Sevier, Van Buren, Yell  
*Ophiogomphus rupinulensis* Walsh  
 Adults (16-V to 10-VI): Washington  
 Naiads: Fulton, Marion, Saline, Sharp  
*Progomphus obscurus* Rambur  
 Adults (25-VI to 2-VII): Chicot, Lawrence, Lincoln  
 Naiads: Bradley, Calhoun, Columbia, Drew, IZard, Saline, Sevier  
*Stylogomphus albistylus* (Hagen)  
 Adults (no date): Washington  
 Naiads: Clark, Fulton, Garland, Howard, Madison, Newton, Pulaski, Randolph, Saline, Sevier, Sharp
- AESHNIDAE**  
*Aeshna constricta* Say  
 Adults (V): Pulaski  
 \**Aeshna interrupta* Walker  
 Adults (9-VI): Washington - no specific location, 9-VI-64  
 \**Aeshna umbrosa* Walker  
 Naiads: Bradley - 4 mi E of Warren, 21-IV-73; Garland - 3 mi W of Jessieville, 2-IV-70  
*Anax junius* Drury  
 Adults (23-IV to 20-X): Conway, Craighead, Cross, Desha, Drew, Franklin, Greene, Jefferson, Lonoke, Mississippi, Randolph, Saline, Washington, Woodruff  
 Naiads: Benton, Calhoun, Chicot, Craighead, Drew, Poinsett, Pulaski, Randolph, Saline  
*Anax longipes* Hagen  
 Adults (26-VII): Washington  
*Basiaeschna janata* Say  
 Adults (24-IV to 22-V): Lawrence, Polk, Randolph  
 Naiads: Calhoun, Clay, Columbia, Fulton, Garland, Montgomery, Randolph, Saline, Sevier, Sharp, Van Buren, Washington  
*Boyeria vinosa* Say  
 Adults (5-V to 18-IX): Clay, Craighead, Lawrence, Randolph, Washington  
 Naiads: Arkansas, Ashley, Bradley, Calhoun, Columbia, Dallas, Drew, Fulton, Grant, Jackson, Marion, Nevada, Ouachita, Poinsett, Polk, Pulaski, Randolph, Saline, Sevier, Sharp, Stone, Van Buren  
 \**Coryphaeschna ingens* Rambur  
 Naiads: Drew - 2 mi E of Monticello, 23-III-70  
*Epiaeschna heros* Fabricius  
 Adults (15-V to 30-IX): Jackson, Jefferson, Pulaski, Saline, Washington  
 Naiads: Ashley, Bradley, Calhoun, Drew, Jackson, Lawrence, Saline, Woodruff  
*Gomphaeschna furcillata* Say  
 Adults (2-IV): Lincoln  
*Nasiaeschna pentacantha* Rambur  
 Adults (14-VI to 14-VII): Conway, Lincoln, Pulaski, Washington  
 Naiads: Bradley, Clay, Cleveland, Columbia, Drew, Jackson, Lafayette, Mississippi, Nevada, Poinsett, Pulaski, Saline
- MACROMIIDAE**  
*Didymops transversa* Say  
 Adults (2-IV to 19-V): Hempstead, Madison, Saline, Washington, White, Yell  
 Naiads: Pike, Randolph  
 \**Macromia georgina* Selys  
 Adults (VII to 18-IX): Clay - Current River ¼ mi S of Missouri - Arkansas State line on east bank, 18-IX-76; Johnson - no specific location, VII-66, UA-Fayetteville coll.  
 Naiads: Drew, Montgomery, Randolph, Sevier  
*Macromia illinoiensis* Walsh  
 Adults (21-VIII): Sharp  
 Naiads: Conway, Drew, Marion, Pulaski, Saline, Washington  
 \**Macromia pacifica* Hagen  
 Adults (21-VII to 6-VIII): Randolph - Jane's Cr. at St. Hwy. 90 bridge, 5-VIII-76; Washington - no specific location, UA-Fayetteville coll.  
 Naiads: Polk, Saline, Sevier  
*Macromia taeniolata* Rambur  
 Adults (17-VII to 17-VIII): Arkansas, Grant, Jackson, Lawrence, Poinsett  
 Naiads: Columbia
- CORDULIIDAE**  
*Epiteca cynosura* (Say)  
 Adults (17-III to 14-VI): Craighead, Cross, Franklin, Greene, Lincoln, Lonoke, Madison, Mississippi, Polk, Washington  
 Naiads: Arkansas, Ashley, Chicot, Clay, Craighead, Drew, Grant, Jackson, Lincoln, Ouachita, Pike, Pulaski, Randolph, Sevier  
*Epiteca princeps* (Hagen)  
 Adults (21-IV to 21-IX): Cleburne, Craighead, Franklin, Lawrence, Logan, Pike, Poinsett, Randolph  
 Naiads: Arkansas, Clay, Craighead, Drew, Fulton, Jackson, Ouachita, Poinsett, Randolph, Saline  
 \**Epiteca williamsoni* (Muttikowski)  
 Adults (29-V): Greene - Lakeshore at Walcott St. Park, 29-V-76 (Westfall, pers. comm. states that this specimen may prove to be *E. costalis* on further study)  
 \**Helocordulia uhleri* Selys  
 Adults (1-IV): Clark - 3 mi S of Hollywood in bottomland hardwoods, 1-IV-73  
 \**Neurocordulia molestus* Walsh  
 Naiads: Miller - Red River? 2 mi N of I-30 on gravel road 10 mi NE of Texarkana, S6, T14S, R27W, 19-X-75; Red River 2 mi E of Bradley Lake, S21, T17S, R25W, 19-X-75  
 \**Neurocordulia obsoleta* Say  
 Naiads: Ashley - 6 mi W of Wilmot, 14-V-67; Columbia - Nations Cr. on Warnock Springs Road at edge of Magnolia, 18-VII-74; Drew - Shrine Pond, PW Camp, 25-IV-70  
*Neurocordulia xanthosoma* (Williamson)

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Adults (1-VIII to 4-VII): Franklin, Lawrence  
Naiads: Polk, Sevier

*Somatochlora linearis* Hagen

Adults (12-VII): Ashley, Franklin

Naiads: Drew

*Somatochlora ozarkensis* Bird

Adults (14-VI): Franklin, Washington

\**Somatochlora tenebrosa* Say

Adults (17-VII): Garland - Clear Cr., 17-VII-60

## LIBELLULIDAE

*Brachymesia gravida* (Calvert)

Adults (19-IX): Pulaski

*Celithemis elisa* Hagen

Adults (29-V to 21-IX): Conway, Craighead, Drew, Franklin, Garland, Greene, Hempstead, Logan, Montgomery, Pulaski, Saline, Washington

Naiads: Drew, Saline

*Celithemis eponina* Drury

Adults (25-VI to 13-X): Clay, Craighead, Franklin, Greene, Jefferson, Little River, Poinsett, Washington

Naiads: Drew

*Celithemis fasciata* Kirby

Adults (10-VI to 24-VII): Conway, Montgomery, Poinsett, Washington

Naiads: Calhoun, Randolph, Saline

*Celithemis verna* Pritchard

Adults (no date): Montgomery

Naiads: Ashley, Chicot, Drew

\**Dythemis velox* Hagen

Adults (30-VI to 5-IX): Fulton, Independence, Randolph, Saline, Sharp, Washington. Common along banks of Ozark streams.

*Erythemis simplicicollis* Say

Adults (28-V to 23-VI): Baxter, Conway, Craighead, Crittenden, Cross, Faulkner, Franklin, Fulton, Grant, Greene, Independence, Jackson, Lawrence, Lincoln, Logan, Lonoke, Mississippi, Montgomery, Perry, Poinsett, Prairie, Pulaski, Randolph, Scott, Sebastian, Sharp, Washington, Woodruff

Naiads: Ashley, Chicot, Drew, Lincoln, Ouachita, Pulaski, Randolph

*Erythrodiplax connata minuscula* Rambur

Adults (10-VI to 20-VI): Craighead, Montgomery, Saline

Naiads: Sevier

*Erythrodiplax umbrata* Linnaeus

Adults (12-VII to 18-VII): Drew

\**Ladona deplanata* Rambur

Adults (10-IV to 6-V): Craighead

Naiads: Bradley - Saline River at St. Hwy. 8, 26-X-74; Drew - 2 mi W of Monticello, 10-III-75; Shrine Pond at PW Camp, 25-III-70; Lincoln - 1/2 mi N and 1 mi W of Star City, 31-III-65, 1-IV-68; Randolph - pond 6 mi W of Pochontas, 24-X-76

*Libellula auripennis* Burmeister

Adults (12-VII to 14-IX): Calhoun, Drew

Naiads: Drew, Saline

*Libellula cyanea* Fabricius

Adults (22-V to 23-X): Conway, Craighead, Franklin, Greene, Howard, Lawrence, Montgomery, Poinsett, Pulaski, Randolph, Scott, Sebastian, Washington

*Libellula flava* Rambur

Adults (16-VI to 28-VIII): Conway, Fulton, Logan, Saline, Sebastian, Washington

*Libellula incesta* Hagen

Adults (8-VI to 13-X): Arkansas, Clay, Conway, Craighead, Faulkner, Franklin, Fulton, Independence, Jackson, Poinsett, Pulaski, Randolph, Saline, Sharp, Washington

*Libellula luctuosa* Burmeister

Adults (6-VI to 15-X): Conway, Craighead, Franklin, Fulton, Greene, Lawrence, Logan, Poinsett, Pulaski, Randolph, Saline, Washington

Naiads: Chicot, Drew, Fulton, Jackson, Randolph, Saline

\**Libellula needhami* Westfall

Adults (no date): "N of El Dorado", (Westfall, pers. comm.)

*Libellula pulchella* Drury

Adults (30-V to 21-X): Conway, Craighead, Franklin, Lonoke, Marion, Phillips, Prairie, Washington, Woodruff

Naiads: Greene

*Libellula quadrimaculata* Linnaeus

No locality given (Muttikowski 1910)

\**Libellula semifasciata* Burmeister

Adults (17-IV): Saline - Lost Cr. 4 mi SE of Shaw, 17-IV-76

Naiads: Saline - 7 mi NW of Crows, 21-III-74

*Libellula vibrans* Fabricius

Adults (2-VI to 12-X): Clay, Craighead, Jackson, Lawrence, Lincoln, Logan, Perry, Poinsett, Pulaski, Randolph, Saline, Sharp, Washington, Woodruff

Naiads: Calhoun, Chicot, Clay, Cleveland, Columbia, Craighead, Desha, Drew, Jackson, Jefferson, Lafayette, Monroe, Ouachita, Randolph, Saline

*Miathyria marcella* Selys

Adults (27-IX): Craighead

Naiads: Faulkner

*Micrathyria hageni* Kirby

Adults (8-VI): Franklin

*Orthemis ferruginea* Fabricius

Adults (VI): Franklin

*Pachydiplax longipennis* Burmeister

Adults (1-V to 6-X): Clay, Conway, Craighead, Crittenden, Cross, Faulkner, Franklin, Grant, Independence, Jackson, Jefferson, Lawrence, Lonoke, Marion, Mississippi, Poinsett, Prairie, Pulaski, Randolph, Saline, Sharp, Washington, Woodruff

Naiads: Arkansas, Ashley, Bradley, Calhoun, Chicot, Crittenden, Drew, Hempstead, Jackson, Jefferson, Ouachita, Poinsett, Randolph, Saline

*Pantala flavescens* Fabricius

Adults (7-V to 1-XI): Arkansas, Clay, Craighead, Cross, Drew, Grant, Greene, Independence, Jackson, Lee, Mississippi, Perry, Phillips, Poinsett, Pulaski, Randolph, Saline, Sharp, Washington, Woodruff

Naiads: Miller, Ouachita, Pulaski

*Pantala hymenaea* Say

Adults (23-VI to 31-IX): Craighead, Desha, Fulton, Jackson, Lincoln, Pulaski, Randolph, Saline, Washington, Woodruff

Naiads: Poinsett

*Perithemis tenera* Say

Adults (2-IV to 2-XII): Arkansas, Conway, Craighead, Crittenden, Faulkner, Franklin, Greene, Independence, Jackson, Lawrence, Lee, Lincoln, Lonoke, Mississippi, Montgomery, Perry, Poinsett, Prairie, Pulaski, Scott, Sebastian, Sharp, Washington, Woodruff

Naiads: Chicot, Clay, Columbia, Craighead, Crittenden, Drew, Jackson, Pulaski, Randolph

*Plathemis lydia* Drury

Adults (15-IV to 19-XI): Clay, Craighead, Cross, Franklin, Fulton, Greene, Independence, Jackson, Jefferson, Lawrence, Lonoke, Marion, Mississippi, Perry, Poinsett, Prairie, Pulaski, Randolph, Sharp, Washington, Woodruff, Yell

Naiads: Craighead, Jackson, Ouachita, Pulaski, Randolph

*Sympetrum ambiguum* Rambur

Adults (11-VII to 17-XI): Conway, Craighead, Dallas, Fulton, Greene, Logan, Pulaski, Randolph

Naiads: Ashley

*Sympetrum corruptum* (Hagen)

Adults (17-IV to 30-XI): Marion, Pulaski, Randolph, Washington

Naiads: Craighead, Randolph

*Sympetrum vicinum* Hagen

Adults (30-VI to 6-XI): Bradley, Clay, Fulton, Pulaski, Randolph, Washington

Naiads: Drew

\**Tramea carolina* Linnaeus

Adults (5-VIII to 9-VIII): Randolph - Jane's Cr. at St. Hwy. 90 bridge, 5-VIII-76; Washington - L.J. Paulissen Coll. 622, 9-VIII-62

Naiads: Randolph - Kilo-vista Pond 6 mi W of Pochontas, 24-X-76

*Tramea lacerata* Hagen

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Adults (29-V to 19-X): Conway, Craighead, Desha, Franklin, Greene, Independence, Jefferson, Lincoln, Logan, Lonoke, Mississippi, Montgomery, Poinsett, Pulaski, Randolph, Saline, Scott, Washington, Woodruff  
 Naiads: Benton, Drew, Randolph, Saline  
*Tramea onusta* Hagen  
 Adults (VI to 9-X): Craighead, Franklin, Little River, Lonoke, Pulaski, Randolph, Saline  
 Naiads: Bradley

## ADDITIONAL SPECIES

The dragonfly species list for Missouri, Kentucky, Tennessee, Mississippi, Louisiana, and Oklahoma (Koen 1937; Wright 1938a,b, 1943; Westfall 1952; Needham and Westfall 1955; Bick 1957; Bick and Bick 1957; Macklin and Cook 1967; Montgomery 1967) suggest that the following nine species may be expected to be found in Arkansas. States for which the species have been reported are listed alphabetically.

- Gomphus (Gomphurus) crassus* Hagen - Kentucky, Missouri, Tennessee  
*Gomphus (Gomphus) militaris* Hagen - Missouri, Oklahoma, Texas  
*Gomphus (Arigomphus) pallidus* Rambur - Kentucky, Louisiana, Tennessee  
*Aeshna multicolor* Hagen - Missouri, Oklahoma  
*Neurocordulia virginienensis* Davis - Mississippi, Oklahoma, Tennessee  
*Brachymesia furcata* Hagen - Florida, Missouri, Texas  
*Celithemis ornata* Rambur - Louisiana, Mississippi, Missouri  
*Libellula axilena* Westwood - Kentucky, Louisiana, Mississippi  
*Nannothemis bella* Uhler - Kentucky, Louisiana, Mississippi

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## The Dragonflies (Anisoptera) of Arkansas

## ERRATA

Late confirmation of some determinations necessitates the deletion of the following species from the list:

*Dromogomphus armatus* - further study shows these to be immature *Dromopomphus spinosus*.

*Gomphus brevis* - a single *Gomphurus* immature of uncertain species.

*Gomphus descriptus* - a single adult male *Gomphus vastus*.

These deletions reduce the species list to 84 for Arkansas.



Fig. 1. Number of dragonfly species reported in Arkansas by counties.