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George L. Harp
Arkansas State University

John D. Rickett
University of Arkansas at Little Rock

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The Dragonflies (Anisoptera) of Arkansas

GEORGE L. HARP

Division of Biological Sciences, Arkansas State University
State University, Arkansas 72467

JOHN D. RICKETT

Department of Biology, University of Arkansas at Little Rock
Little Rock, Arkansas 72204

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 In addition, considerable previously unpublished data were derived from collections of naiads from southeastern and southwestern Arkansas, University of Arkansas-Fayetteville, Arkansas State University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

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Adults (26-IV): Yell

**Gomphus (Stylurus) 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 - Tyroneza 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 rupinusulensis 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 Pocahontas, 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
Micrathya 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 Pocahontas, 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 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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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.