

New Dragonfly (Odonata) Species in Ohio, and Additions to County Records¹

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ABSTRACT. This report is a contribution to the Ohio Odonata Survey. Three species previously unknown for Ohio are reported as new state records: *Macromia georgina* (Selys), 1878, *Gomphaeschna furcillata* (Say), 1839, and *Libellula deplanata* Rambur, 1842. These records increase the number of known Odonata from Ohio to 156 species and subspecies. Also reported are 611 new county records, significantly expanding our knowledge of distribution of these species in Ohio. Comments on early or late flight dates and/or species status are made for several species. These records are based upon recent collecting and re-examination of museum collections.

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INTRODUCTION

The most recent state-wide listing of Odonata was done by Borror (1937), with over 30 more recent papers making additions to his list. In 1990 the Ohio Odonata Survey was initiated, and three recent papers (Alrutz 1992, 1993; Moody 1993) have summarized a portion of the activities of the current survey. The records reported in the present paper are previously unpublished museum records and records from field work of the authors and numerous survey volunteers.

T. Edward Perry published several significant papers on Odonata in Ohio before his untimely death in 1986 (Perry 1983). His extensive collections were donated to the Cleveland Museum of Natural History. Included in this report are numerous unpublished county records from Perry's collection.

MATERIALS AND METHODS

The authors examined existing collections for unpublished distribution records. Field collections have added more records. All records represent specimens collected and preserved in public or private collections. All data have been entered into an IBM-compatible database using PCFile 5.0 from ButtonWare. The database contains 17,297 records as of March 1995. The authors identified specimens from field collections, and selected specialists confirmed identification of problematic species. The authors confirmed identification of existing museum specimens in any cases where questionable data were apparent.

RESULTS

Specimens referred to in this report are stored in the collections noted with the records. They are arranged according to a numbering system which simplifies computer records devised for the Ohio Odonata Survey. The

system is modified from the "Checking List" on page 367 in Needham and Heywood (1929). Each county record lists in order: the collector's name (for collectors who infrequently appear) or initials (for collectors who frequently appear, Table 1); the year when the specimen was collected; and the abbreviation for the holding collection (Table 2).

TABLE 1
Initials of frequent collectors.

Initials	Names
AP	Alice Phillips
CAJ	C. A. Janis
CAT	Charles A. Tripplehorn
CM	Chris McKay
DH	Doug Horvath
DR	Dan Riggs
FJM	F. J. Moore
FP	Foster Purrington
JAB	James A. Bissell
JAH	James A. Hine
JH	John Hubbard
HFP	Homer F. Price
MD	Mark Dillon
MG	Mike Greene
NC	No Collector named
PDH	Paul D. Harwood
RAR	Robert A. Restifo
RCG	Robert C. Glotzhofer
RCO	R. C. Osburn
RMR	R. M. Ritter
RWA	Robert W. Alrutz
TEP	T. Edward Perry
WKR	W. K. Roach
VL-1964	Vinnedge M. Lawrence, Unpublished Master's Thesis

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²T. E. Perry died in 1986.

TABLE 2

Abbreviations for holding collections.

Abbreviation	Collection Name or Location
AULLWD	Aullwood Audubon Center, Dayton, OH
ASUMZ	Arkansas State University, Museum of Zoology
CinnNH	Cincinnati Museum of Natural History
CMNH	Cleveland Museum of Natural History
COLMET	Columbus Metro Parks, Columbus, OH
COOK	Carl Cook, Center, KY, Personal Collection
CNC	Cincinnati Nature Center, Milford, OH
DENU	Denison University, Granville, OH
EE	Eric Eaton, Cincinnati, OH, Personal Collection
FINDLY	University of Findlay, Findlay, OH
FSCA	Florida State Collection of Arthropods, University of Florida, Gainesville, FL
HTC	Hocking Technical College, Nelsonville, OH
MTVNAZ	Mount Vernon Nazarene College, Mount Vernon, OH
NMNH	National Museum of Natural History, Smithsonian
OHS	Ohio Historical Society, Natural History Collections, Columbus, OH
OSU	Ohio State University, Museum of Biological Diversity
OSUent	Ohio State University, Department of Entomology
OSUs	Ohio State University, Stone Lab collection
SWC	Stark Wilderness Center, Wilmot, OH
SUMMIT	Summit County Metropolitan Park District, Akron, OH
RAR	Robert A. Restifo, Delaware, OH, Personal Collection

New County and State Records of Odonata from Ohio

- 2 *Tachopteryx thoreyi*. **Adams:** MD-1993, AULLWD; **Ashland:** PDH-1961, 1966, FSCA; TEP-1982, CMNH; **Clinton:** FJM-1956, OSU; **Greene:** RAR-1975, RAR; **Lake:** TEP-1977, 1984, CMNH; **Licking:** NC-1962, DENU.
- 3 *Progomphus obscurus*. **Athens:** RAR-1975, RAR; **Pike:** DR-1993, OHS; **Vinton:** JAH-1900, OHS.
- 7 *Hagenius brevistylus*. **Adams:** MD-1993, AULLWD; **Ashtabula:** TEP-1978, CMNH; **Trumbull:** TEP-1976, CMNH; **Vinton:** RAR-1972, RAR; **Wayne:** TEP-1984, CMNH.
- 14 *Ophiogomphus rupinsulensis*. **Lake:** TEP-1977, 1983, CMNH. New Season Extension = 22 August: D. J. Borror-1931, OSU.
- 31 *Gomphus viridifrons*. **Lake:** TEP-1977, CMNH.
- 33 *Gomphus fraternus*. **Butler:** VL-1964; **Fairfield:** RAR-1973, RAR; **Hamilton:** Dury-1898, CinnNH; **Hocking:** RAR-1969, 1971, 1973, RAR; **Holmes:** PDH-1961, FSCA; **Lake:** TEP-1974, CMNH; **Miami:** CM-1991, OHS.
- 42 *Gomphus vastus*. **Hamilton:** Dury-1900, CinnNH; EE-1991, EE; **Holmes:** PDH-1963, FSCA; **Lorain:** J. Shellard-1989, OSUs; **Montgomery:** MD-1993, AULLWD; **Sandusky:** (8 specimens, 1899-1900) OSU.
- 43 *Gomphus ventricosus*. **Richland:** RCO-1899, RAR.
- 45 *Gomphus lineatifrons*. **Ashtabula:** TEP-1972, 1981, CMNH; **Lake:** TEP-1975, 1984, CMNH; **Summit:** D. White-1961, OHS.
- 48 *Stylurus [Gomphus] notatus*. **Williams:** HFP-1946, OSU.
- 49 *Stylurus [Gomphus] plagiatus*. **Hamilton:** A. Braun-1905, OHS; EE-1991, EE; **Sandusky:** RCO-1899, OSU.
- 50 *Stylurus [Gomphus] spiniceps*. **Ashtabula:** TEP-1985, CMNH; **Hocking:** DR-1992, OHS; **Miami:** MD-1993, AULLWD; **Montgomery:** HFP-1952, OSU; K. Offenbacker-1993, OHS; **Muskingum:** RAR-1978, RAR.
- 51 *Gomphus lividus*. **Adams:** RCG-1985, OHS; **Butler:** VL-1964; **Highland:** RCO-1898, OSU; **Jackson:** RAR-1970, RAR; **Medina:** JAH-1899, OSU; PDH-1962, FSCA; **Morgan:** RAR-1980, RAR; **Morrow:** NC-1952, OHS; **Muskingum:** DR-1993, OHS; **Noble:** RAR-1975, RAR; **Pike:** DR-1993, OHS; **Richland:** K. Will-1991, OSUs; **Stark:** RMR-1982, SWC; **Trumbull:** TEP-1976, CMNH; **Vinton:** NC-1900, OSU.
- 55 *Gomphus grasslinellus*. **Allen:** CAT-1950, OHS; **Champaign:** R. E. Woodruff-1954, OSU; **Montgomery:** MD-1993, AULLWD; **Preble:** CAT-1950, OHS; **Stark:** RMR-1980, SWC; **Vinton:** NC-1900, OSU; **Warren:** MD-1993, AULLWD.
- 58 *Gomphus exilis*. **Ashland:** PDH-1961, FSCA; **Ashtabula:** TEP-1975, 1982, CMNH; **Fairfield:** RCG-1983, OHS; RWA-1993, OSU; **Hocking:** DR-1993, OHS; **Holmes:** PDH-1961, FSCA; **Jackson:** RAR-1988, RAR; RWA-1993, OSU; **Miami:** CM-1992, OHS; RWA-1993, OSU; **Noble:** RAR-1975, RAR; **Scioto:** RAR-1969, RAR; **Stark:** RMR-1980, SWC; **Trumbull:** DR-1993, OHS.
- 59 *Gomphus spicatus*. **Franklin:** NC-1947, OSU; **Holmes:** PDH-1961, FSCA; **Summit:** NC-1900, OSU; **Wayne:** RAR-1992, RAR.
- 64 *Gomphus quadricolor*. **Ashtabula:** TEP-1975, 1981, CMNH; **Athens:** RAR-1975, RAR; **Geauga:** TEP-1985, CMNH; **Lake:** TEP-1974, 1977, CMNH; **Trumbull:** TEP-1978, CMNH.
- 72 *Arigomphus [Gomphus] villosipes*. **Auglaize:** HFP-1961, OSU; **Crawford:** RWA-1993, OSU; **Holmes:** RWA-1993, OSU; **Miami:** CM-1991, OHS; **Muskingum:** DR-1993, OHS; **Pike:** NC-1951, OSU; **Trumbull:** TEP-1976, CMNH; **Vinton:** DR-1993, OHS; **Warren:** RCG-1993, OHS.
- 72A *Stylurus [Gomphus] laurae*. **Hocking:** RAR-1972, RAR.
- 74 *Dromogomphus spoliatus*. **Adams:** MD-1993, AULLWD; **Allen:** HFP-1960, OSU; **Erie:** TEP-1978, 1985, CMNH; **Hamilton:** EE-1991, EE; **Lake:** RAR-1975, RAR; **Lorain:** J. S. Beck-1989, OSUs; C. E. Trisler-1993, OSUs; **Montgomery:** MD-1993, AULLWD; **Union:** RWA-1993, OSU.
- 75 *Dromogomphus spinosus*. **Adams:** MD-1993, AULLWD; **Ashtabula:** TEP-1977, 1978, CMNH; JAB-1984, CMNH; **Columbiana:** TEP-1979, CMNH; **Fayette:** RAR-1977, RAR; **Geauga:** E. B. Williamson-1932, CMNH; **Henry:** NC-1898, CinnNH; **Lake:** TEP-1974, 1978, CMNH; **Lorain:** D. Altire-1990, M. L. Hahn-1990, & G. Burkholder-1990, OSUs; **Warren:** MD-1993, AULLWD.
- 76 *Stylogomphus albistylus*. **Ashtabula:** TEP-1979, CMNH; **Columbiana:** TEP-1979, CMNH; **Lake:** TEP-1974, 1983, CMNH.

- 79B *Gomphaeschna furcillata*. **NEW STATE SPECIES**. **Geauga**: TEP-1980, 1984, CMNH; MG-1994, SUMMIT; **Hocking**: CFW-1936, OSU. Perry collected seven specimens in Geauga County, one from Russell Park, the remainder from the area of Fern Lake. Greene collected an additional female near Lake Kelso/Fern Lake in 1994. Recently a specimen was discovered at the Museum of Biological Diversity, Ohio State University labeled only "Hocking County, Salt Creek Twp., 31 May 1936 CFW, Det. Borrer 2/50." This record was not previously published. Flight dates are 31 May to 21 June.
- 80 *Basiaeschna janata*. **Ashtabula**: TEP-1976, 1977, CMNH; **Geauga**: C. Stein-1971 (nymph), OHS; TEP-1978, 1985, CMNH; **Hamilton**: NC-1898, CinnNH; **Hocking**: RAR-1969, 1972, 1973, RAR; **Meigs**: DR-1993, OHS; **Muskingum**: RWA-1993, OHS; **Richland**: K. Will-1991, OHS; **Trumbull**: TEP-1976, CMNH; **Vinton**: DR-1993, OHS.
- 81 *Boyeria vinosa*. **Adams**: MD-1993, AULLWD; **Butler**: VL-1964; **Delaware**: RAR-1992, RAR; **Erie**: B. Stiver-1981, OSU; **Greene**: J. H. Sears-1972 (nymph), OHS; **Highland**: RCG-1982, 1991, OHS; **Huron**: PDH-1960, FSCA; **Madison**: M. Dilley-1990 (nymph), OHS; **Mahoning**: TEP-1951, CMNH; **Miami**: MD-1993, AULLWD; **Perry**: DR-1992, OHS; **Portage**: TEP-1979, 1980, CMNH; **Stark**: RMR-1981, SWC; **Trumbull**: TEP-1975, CMNH; **Vinton**: DR-1992, OHS.
- 83 *Anax longipes*. **Stark**: RMR-1984, SWC; **Vinton**: DR-1993, OHS.
- 85 *Anax junius*. **Carroll**: RWA-1993, OSU; **Fayette**: RWA-1993, OSU; **Hamilton**: Dury-1900, CinnNH; EE-1992, EE; **Hancock**: D. Moody-1993, FINDLY; **Holmes**: RWA-1993, OSU; **Miami**: CM-1991, OHS; RWA-1993, OSU; **Ross**: D. Case-1991, OHS; RWA-1993, OSU; **Union**: RWA-1993, OSU; This species is not reported from Columbiana and Hancock counties, where it likely also exists.
- 90 *Nasiaeschna pentacantha*. **Ashtabula**: TEP-1977, 1978, CMNH; **Fairfield**: RCG-1982, OHS; **Geauga**: TEP-1981, CMNH; J. C. Pallister-1924, CMNH; **Hancock**: D. Moody-1991, FINDLY; **Pickaway**: M. Dilley-1990 (nymph), OHS; **Trumbull**: TEP-1977, 1981, CMNH.
- 91 *Epiaeschna heros*. **Adams**: RAR-1970, RAR; **Athens**: D. Hanby-1991, HTC; **Butler**: VL-1964; **Fairfield**: DR-1993, OHS; **Geauga**: TEP-1978, 1980, CMNH; **Hamilton**: B. Kudlacz-1991, CNC; EE-1991, EE; **Hocking**: RAR-1970, 1972, RAR; **Knox**: PDH-1965, FSCA; **Lake**: TEP-1948, 1984, CMNH; **Miami**: CM-1990, OHS; **Shelby**: HFP-1943, OSU; **Summit**: MG-1992, SUMMIT; **Vinton**: DR-1993, OHS.
- 96 *Aeshna mutata*. **Stark**: RMR-1980, SWC; **Wayne**: FP-1987, OHS.
- 97 *Aeshna umbrosa*. **Fairfield**: RCG-1983, OHS; **Hamilton**: Dury-1900, CinnNH; **Knox**: Vanderborne-1990, MTVNAZ; **Madison**: RWA-1991, OSU. Three males were listed incorrectly as *A. constricta* by Alrutz (1993). The identification correction to *A. umbrosa* was confirmed by RCG and
- RAR. Mahoning**: K. Richey-1991, HTC; **Miami**: MD-1993, AULLWD; **Pickaway**: RAR-1971, RAR; **Ross**: CAJ-1974, RAR; **Stark**: CAT-1950, OHS; **Trumbull**: TEP-1975, CMNH.
- 101 *Aeshna constricta*. **Butler**: VL-1964; **Cuyahoga**: TEP-1978, 1979, CMNH; **Geauga**: TEP-1978, 1981, CMNH; **Hamilton**: NC-1900, CinnNH; **Holmes**: PDH-1957, FSCA; **Lake**: TEP-1978, 1979, CMNH; **Medina**: TEP-1981, CMNH; **Summit**: RAR-1975, RAR; **Trumbull**: TEP-1975, 1976, CMNH.
- 107 *Aeshna tuberculifera*. **Geauga**: TEP-1977, 1982, CMNH; J. Cameron-1985, CMNH; **Ottawa**: RCO-1938, RAR; **Williams**: HFP-1957, OSU.
- 108 *Aeshna canadensis*. **Cuyahoga**: NC-1952 (2 Aug.), CMNH.
- 109 *Aeshna verticalis*. **Geauga**: TEP-1975, 1978, 1979, CMNH; **Medina**: TEP-1981, CMNH; **Stark**: CAT-1950, OHS.
- 113 *Zoraena bilineata*. **Clark**: RCG-1991, OHS.
- 117 *Taeniogaster obliqua*. **Lake**: TEP-1984, CMNH; **Richland**: R. L. Berry-1974, RAR; **Summit**: AP-1993, OHS.
- 120 *Cordulegaster maculata*. **Ashland**: PDH-1970, FSCA; **Fairfield**: RCG-1987, OHS; **Morgan**: DR-1993, OHS.
- 121 *Macromia illinoiensis illinoiensis*. **Ashtabula**: TEP-1977, 1978, CMNH; **Columbiana**: TEP-1979, CMNH; **Defiance**: TEP-1981, CMNH; **Greene**: DH-1993, AULLWD; **Holmes**: PDH-1963, FSCA; **Knox**: RAR-1975, RAR; **Lake**: TEP-1974, 1976, CMNH; **Lorain**: TEP-1974, CMNH; **Miami**: K. Offenbacher-1993, OHS; **Montgomery**: MD-1993, AULLWD; **Pickaway**: M. Dilley-1991 (nymph), OHS; **Vinton**: C. Stein-1971 (nymph), OHS; RAR-1972, RAR. Donnelly and Tenneson (1994) have placed this and number 128 as subspecies of *M. illinoiensis*.
- 122 *Macromia alleghaniensis*. **Adams**: MD-1993, AULLWD; **Franklin**: M. Dilley-1991 (nymph), OHS; RCG-1993, OHS.
- 123 *Macromia taeniolata*. **Adams**: MD-1993, AULLWD; **Erie**: TEP-1985, CMNH; **Hamilton**: EE-1992, EE; **Hancock**: D. Moody-1993, FINDLY; **Hocking**: RWA-1993, OHS; **Lorain**: T. R. Hall-1987, OSUs; **Muskingum**: RAR-1974, RAR; **Seneca**: D. Moody-1993, FINDLY; **Union**: L. McConnell-1991, OHS; **Vinton**: DR-1993, OHS.
- 124 *Macromia wabashensis*. **Morgan**: B. Glotzhober-1982, OHS. First misidentified as *M. alleghaniensis*, the identification was corrected by Carl Cook in 1993. This, plus another specimen collected by Carl Cook in Defiance County in 1993, confirms the continued existence of this rare species in Ohio.
- 125 *Macromia pacifica*. **Butler**: VL-1964; **Montgomery**: MD & DH-1993, AULLWD.
- 128 *Macromia georgina*. **NEW STATE SPECIES**. **Paulding**: HFP-1942, NMNH (Montgomery Collection); HFP-1956, OHS. The identification of the latter specimen was corrected by Carl Cook in 1993. The NMNH specimen was apparently never reported. Both specimens were collected along the Auglaize River at Fort Brown. Dates: 21 June; 15 August.

- 130 *Didymops transversa*. **Adams:** RAR-1970, RAR; **Ashtabula:** TEP-1976, CMNH; **Fairfield:** RAR-1973, RAR; **Hocking:** CAJ-1975, RAR; **Lake:** TEP-1977,1978, CMNH; **Medina:** TEP-1982, CMNH; **Ross:** RAR-1974, RAR.
- 133 *Neurocordulia obsoleta*. **Ottawa:** M. W. Boesel-1945, OSUs; G. McMillian-1950, OSUs.
- 134 *Neurocordulia yamaskanensis*. **Lorain:** TEP-1945, CMNH; **Scioto:** K. Will-1991, OHS.
- 136 *Epicordulia [Epitheca] princeps*. **Ashtabula:** TEP-1975, CMNH; **Auglaize:** RWA-1993, OSU; **Cuyahoga:** TEP-1966, CMNH; **Delaware:** RCG-1992, OHS; RWA-1993, OSU; **Huron:** RWA-1993, OSU; **Lucas:** RAR-1973, RAR; **Montgomery:** RWA-1993, OSU; (observed by Borrer, but not collected); **Putnam:** RAR-1977, RAR; **Shelby:** RWA-1993, OSU; **Stark:** RMR-1979, SWC; **Vinton:** DR-1993, OHS.
- 138 *Tetragoneuria [Epitheca] cynosura*. **Clermont:** JH-1993, CNC; **Crawford:** RWA-1993, OSU; **Guernsey:** RWA-1993, OSU; **Jackson:** RAR-1988, RAR; **Lucas:** RAR-1973, RAR; **Ottawa:** C. H. Kennedy-1921, CMNH; **Stark:** RMR-1980, SWC.
- 141 *Tetragoneuria [Epitheca] canis*. **Lake:** TEP-1984, CMNH.
- 146 *Somatoclora linearis*. **Franklin:** W. A. Foster-1975, RAR.
- 147 *Somatoclora ensigera*. **Defiance:** C. Cook-1993, COOK.
- 148 *Somatoclora tenebrosa*. **Adams:** MD-1993, AULLWD; B. Bannister-1993, AULLWD; **Athens:** DR-1993, OHS; **Cuyahoga:** TEP-1976, CMNH; **Greene:** DH-1993, AULLWD; **Miami:** CM-1992, OHS; **Trumbull:** DR-1993, OHS; **Vinton:** RAR-1972, RAR. This species was observed twice in 1991 at Gallagher Fen in Clark County by RCG. While he collected it the same day in Champaign County, it was not collected at Gallagher Fen and remains an unconfirmed sight record.
- 173 *Celithemis eponina*. **Ashland:** PDH-1961, FSCA; **Ashtabula:** TEP-1976, CMNH; **Carroll:** RWA-1993, OSU; **Fayette:** RWA-1993, OSU; **Gallia:** DR-1992, OHS; **Holmes:** RWA-1993, OSU; **Jackson:** RAR-1988, RAR; RWA-1993, OSU; **Mercer:** RWA-1993, OSU; **Montgomery:** MD-1993, AULLWD; RWA-1993, OSU; **Shelby:** RWA-1993, OSU; **Van Wert:** HFP-1963, OSU.
- 174 *Celithemis elisa*. **Ashland:** PDH-1961,1962, FSCA; **Carroll:** RWA-1993, OSU; **Crawford:** RWA-1993, OSU; **Darke:** RWA-1993, OSU; **Fairfield:** RWA-1993, OSU; **Holmes:** PDH-1961, FSCA; RWA-1993, OSU; **Jackson:** RWA-1993, OSU; **Mercer:** RWA-1993, OSU; **Shelby:** RWA-1993, OSU; **Union:** M. L. Hahn-1991, OHS; **Van Wert:** HFP-1963, OSU.
- 175 *Celithemis fasciata [monomelaena]*. **Jackson:** RWA-1993, OSU; **Vinton:** DR-1993, OHS; RWA-1993, OSU.
- 187 *Libellula [Ladonna] deplanata*. **NEW STATE SPECIES.** **Warren:** C. Morasky-1992, OHS. Two males were captured at YMCA Camp Kern, Optimus Pond on 19 May 1992. RCG visited the site in 1993 and 1994 but found no specimens of this species. It is likely that the two specimens collected by Morasky were blown in from Indiana. This species may yet establish a breeding population and should be watched for in southwestern Ohio.
- 193 *Libellula auripennis*. **Ottawa:** R. Helgeson-1964, CMNH.
- 196 *Libellula cyanea*. **Clermont:** JH-1993, CNC; **Fairfield:** RCG-1982,1986, OHS; J. Condit-1967, OHS; Chandler-1975 & RAR-1970, RAR; M. Gerken-1990, OHS; RWA-1993, OSU; **Guernsey:** RWA-1993, OSU; **Harrison:** PDH-1960,1971, FSCA.
- 198 *Libellula semifasciata*. **Adams:** RAR-1970, RAR; **Athens:** RAR-1975, RAR; **Butler:** VL-1964; **Delaware:** WKR-1970, RAR; **Greene:** P. Reese-1993, OHS; **Guernsey:** RAR-1975, RAR; RWA-1993, OHS; **Hamilton:** NC-1902, CinnNH; **Muskingum:** DR-1993, OHS; **Summit:** JAB-1990, OHS; RAR-1975, RAR; RWA & FJM-1960, OSU.
- 199 *Libellula pulchella*. **Union:** RWA-1993, OSU. This species was observed by Donald Borrer (1937) in both Clark and Fayette counties, the only two remaining counties in the state that have not had reported collections.
- 201 *Libellula quadrimaculata*. **Lorain:** TEP-1945, CMNH; **Summit:** MG-1992, SUMMIT.
- 204 *Libellula incesta*. **Athens:** DR-1992, OHS; **Gallia:** DR-1992, OHS; **Morgan:** RWA-1993, OSU.
- 205 *Libellula vibrans*. **Cuyahoga:** L. E. Stevens-1966, CMNH; **Hamilton:** NC-1897, CinnNH; **Williams:** HFP-1962, OSU; **Vinton:** DR-1993, OHS.
- 207 *Libellula hydia*. **Pike:** DR-1993, OHS. This species is not reported from only Adams and Lawrence counties.
- 214 *Sympetrum ambiguuum*. **Adams:** MD-1993, AULLWD; **Athens:** DR-1992, OHS; **Clermont:** JH-1993, CNC; **Coshocton:** RWA-1993, OSU; **Highland:** RAR-1973, RAR; **Knox:** S. D. Logan-1990 & Vandeborne-1990, MTVNAZ; **Pickaway:** RAR-1973, RAR.
- 216 *Sympetrum obtrusum*. **Stark:** JAB-1990, OHS; **Wayne:** PDH-1960, FSCA.
- 216A *Sympetrum internum*. **Lucas:** M. Grigore-1992, OHS; **Scioto:** JAH-1897, NMNH. New Early Date: M. Grigore-92, 26 June.
- 217 *Sympetrum rubicundulum*. **Athens:** DR-1992, OHS; **Hamilton:** Dury-1900, CinnNH; EE-1991, EE; **Putnam:** RAR-1977, RAR; **Union:** S. Chordas-1993, ASUMZ.
- 219 *Sympetrum semicinctum*. **Butler:** VL-1964; **Clark:** RCG-1991, OHS; **Fairfield:** RCG-1987, OHS; **Greene:** MD-1993, AULLWD; **Van Wert:** HFP-1963, OSU.
- 220 *Sympetrum vicinum*. **Ashtabula:** E. S. Thomas-1935, OHS; TEP-1976, CMNH; **Belmont:** RWA-1993, OSU; **Clermont:** JH-1991, CNC; **Hamilton:** NC-1901, CinnNH; NC-1903, OHS; **Montgomery:** DH-1993, AULLWD; RWA-1958, OSU; **Wayne:** M. Casey & J. Casey-1991, OHS.
- 225 *Leucorrhinia intacta*. **Fairfield:** RCG-1982, OHS; **Jackson:** DR-1993, OHS; **Lorain:** PDH-1966, FSCA; **Miami:** CM-1991, OHS; **Muskingum:** DR-1993, OHS; RWA-1993, OSU; **Perry:** RWA-1993, OSU;

- Richland:** K. Will-1991, OHS; **Stark:** RMR-1980, SWC; **Vinton:** DR-1993, OHS; **Wayne:** M. Casey & J. Casey-1991, OHS.
- 230 *Pachydiplax longipennis*. **Carroll:** RWA-1993, OSU. With this report this species is now reported from all 88 counties.
- 231 *Erythemis simplicicollis*. **Mahoning:** RCG & R. Novotny-1993, OHS; **Van Wert:** HFP-1963, OSU. This species is now reported for all 88 counties.
- 238 *Pantala bymenaea*. **Erie:** B. A. Nault-1987, OSUs; J. F. Thomas-1987, OSUs; TEP-1980, CMNH; **Ottawa:** R. Helgesen-1964,1969, CMNH; **Portage:** TEP-1981, CMNH; **Wayne:** RAR-1992, RAR.
- 239 *Pantala flavescens*. **Athens:** NC-1991, HTC; **Butler:** VL-1964; **Clark:** RAR-1975, RAR; **Fayette:** RAR-1974, RAR; **Hocking:** DR-1992, OHS; **Knox:** PDH-1956, FSCA; C. A. Ingersol-1991, MTVNAZ; **Montgomery:** MD-1993, AULLWD; **Vinton:** RAR-1972, RAR.
- 242 *Tramea lacerata*. **Auglaize:** RWA-1993, OSU; **Belmont:** RWA-1993, OSU; **Carroll:** RWA-1993, OSU; **Crawford:** RWA-1993, OSU; **Cuyahoga:** L. E. Stevens-1965, CMNH; **Darke:** RWA-1993, OSU; **Holmes:** RWA-1993, OSU; **Shelby:** RWA-1993, OSU; **Union:** RWA-1993, OSU.
- 243 *Tramea onusta*. **Ashland:** PDH-1956, FSCA; **Delaware:** M. Kotter-1993, COLMET; **Geauga:** TEP-1965, CMNH; **Huron:** TEP-1984, CMNH; **Ross:** RAR & CAJ-1974, RAR; **Summit:** MG-1992, SUMMIT.
- 244 *Tramea carolina*. **Hamilton:** NC-1899, CinnNH; **Huron:** TEP-1984, CMNH; **Meigs:** RAR-1986, RAR; **Montgomery:** MD-1993, AULLWD.
- 251 *Calopteryx maculata*. **Clermont:** JH-1991, CNC; RWA & ESM-1960, OSU.
- 254 *Hetaerina americana*. **Adams:** MD-1993, AULLWD; **Ashtabula:** TEP-1974, CMNH; **Geauga:** AP-1991, OHS; **Hancock:** D. Moody-1993, FINDLY; **Holmes:** PDH-1964,1965, FSCA; **Muskingum:** RAR-1974, RAR; **Pickaway:** RWA-1993, OSU; **Vinton:** RAR-1971, RAR.
- 256 *Hetaerina titia*. **Brown:** PDH-1960, FSCA.
- 257 *Archilestes grandis*. **Ashland:** PDH-1962, FSCA; **Athens:** B. Gerber-1979, C. Harries-1990, & M. Eakle-1991, HTC; **Hamilton:** EE-1992, EE; **Jackson:** RAR-1992, RAR; **Lake:** TEP-1980,1983, CMNH; **Morgan:** DR-1992, OHS; **Muskingum:** RAR-1974, RAR; **Tuscarawas:** RCG-1986, OHS.
- 259 *Lestes inaequalis*. **Ashtabula:** TEP-1976, CMNH; **Jackson:** DR-1992, OHS; **Trumbull:** TEP-1976, CMNH.
- 260 *Lestes eurinus*. **Ashland:** PDH-1982, FSCA; **Athens:** RAR-1975, RAR; NC-1983, HTC; T. Davis-1991, HTC; Lozori-1991, HTC; **Delaware:** RWA-1993, OSU; **Summit:** AP-1992, OHS.
- 261 *Lestes congener*. **Ashtabula:** TEP-1976, CMNH; **Champaign:** RAR-1973, RAR; **Defiance:** HFP-1962, OSU; **Guernsey:** RAR & T. R. Hall-1974, RAR; **Highland:** RAR-1973, RAR; **Huron:** PDH-1960, FSCA; **Medina:** TEP-1981, CMNH; **Summit:** AP-1992, OHS.
- 262 *Lestes unguiculata*. **Lorain:** J. Oney-1942, OSU.
- 266a *Lestes disjunctus disjunctus*. **Ashland:** PDH-1970, FSCA; **Athens:** DR-1993, OHS; **Cuyahoga:** R. Helgesen-1963, CMNH; **Geauga:** TEP-1975, CMNH; **Lake:** TEP-1975,1980, CMNH; **Vinton:** DR-93, OHS.
- 266b *Lestes disjunctus australis*. **Adams:** RAR-1970, RAR; **Butler:** VL-1964; **Delaware:** RAR & WKR-1970, RAR; **Erie:** K. Will-1991, OHS; **Geauga:** RAR-1972, RAR; **Highland:** RAR-1973, RAR; **Hocking:** RAR-1970, RAR; **Lake:** TEP-1985, CMNH; **Miami:** M. Gunter-1993, OHS; **Scioto:** RAR-1970, RAR; **Vinton:** RAR-1972, RAR; **Wayne:** PDH-1969, FSCA.
- 267 *Lestes rectangularis*. **Athens:** DR-1992, OHS; **Auglaize:** RAR-1975, RAR; **Clark:** RCG-1992, OHS; **Morrow:** RWA-1993, OSU.
- 268 *Lestes dryas*. **Cuyahoga:** TEP-1974, CMNH; **Lake:** TEP-1974, CMNH; RWA-1960, OSU; **Pickaway:** RAR-1973, RAR.
- 270 *Lestes vigilax*. **Carroll:** RWA-1993, OSU; **Darke:** RWA-1993, OSU; **Defiance:** RAR-1972, RAR; **Holmes:** RWA-1993, OSU; **Knox:** RWA-1993, OSU; **Mahoning:** RCG & R. Novotny-1993, OHS; **Trumbull:** TEP-1980, CMNH.
- 277 *Argia apicalis*. **Ashtabula:** TEP-1974, CMNH; **Butler:** VL-1964; EE-1992, EE; **Fulton:** TEP-1980, CMNH; **Geauga:** AP-1991, OHS; TEP-1975, CMNH; **Hamilton:** EE-1988,1992, EE; **Hocking:** DR-1992, OHS; **Lake:** TEP-1974,1979, CMNH; **Wayne:** J. Vaughn-1991, OHS. The only counties in Ohio without collections of this species are Columbiana, Jefferson, and Morrow counties.
- 278 *Argia bipunctulata*. **Clark:** RCG-1991, OHS. This species was previously known in Ohio only from Cedar Bog in Champaign County. Clark County was added to the list in 1991 with Gallagher Nature Preserve, and in 1992 from Prairie Road Fen Nature Preserve. Though its distribution is still very limited, it is fairly common at these three protected fens, which are within ten miles of each other.
- 280a *Argia fumipennis violacea*. **Huron:** PDH-1956, FSCA; RWA-1993, OSU.
- 284 *Argia moesta*. **Ashtabula:** TEP-1979, CMNH; **Butler:** VL-1964; **Fayette:** PDH-1968, FSCA; D. Parshall-1993, OHS; **Gallia:** D. J. Borrer-1933, OSU; **Geauga:** AP-1991, OHS; **Jackson:** RAR-1988, RAR; **Pickaway:** PDH-1963, FSCA; **Union:** L. McConnell-1991, OHS.
- 286 *Argia sedula*. **Champaign:** K. Offenbacher-1993, OHS; **Cuyahoga:** TEP-1973, CMNH; **Delaware:** RAR-1992, RAR; **Lake:** TEP-1974,1975, CMNH; **Montgomery:** J. Wilson-1993, AULLWD; **Morgan:** RAR-1979, RAR.
- 288 *Argia tibialis*. **Ashtabula:** TEP-1975,1980, CMNH; **Auglaize:** RAR-1975, RAR; **Butler:** VL-1964; **Clark:** RCG-1992, OHS; **Geauga:** AP-1991, OHS; MG-1993, SUMMIT; **Hancock:** D. Moody-1991, FINDLY; **Holmes:** PDH-1963, FSCA; **Lucas:** M. Grigore-1992, OHS; **Medina:** PDH-1962, FSCA; **Pike:** DR-1993, OHS; **Richland:** PDH-1960, FSCA; **Summit:** AP-1992, OHS; MG-1993, SUMMIT.

- 290 *Argia translata*. **Adams:** MD-1993, AULLWD; **Ashland:** PDH-1961,1965, FSCA; RCG-1984, OHS; **Ashtabula:** TEP-1974, CMNH; **Athens:** RAR-1974, RAR; **Butler:** VL-1964; **Clark:** RCG-1991, OHS; **Columbiana:** RCG-1989, OHS; **Delaware:** RAR-1991, RAR; **Franklin:** RCG-1990, OHS; **Gallia:** DR-1993, OHS; **Guernsey:** RWA-1993, OSU; **Highland:** RAR-1973, RAR; **Lake:** TEP-1963,1974, CMNH; **Lorain:** T. R. Hall-1987, OSUs; **Morgan:** RCG-1982, OHS; RWA-1993, OSU; **Pickaway:** DR-1993, OHS; **Sandusky:** B. A. Nault-1987, OSUs; **Vinton:** DR-1993, OHS.
- 295 *Amphiagrion saucium*. **Athens:** DR-1993, OHS; **Butler:** VL-1964; **Carroll:** PDH-1960, FSCA; **Clark:** RCG-1991,1992, OHS; RWA-1993, OSU; **Fayette:** RAR-1974, RAR; **Greene:** DH-1993, AULLWD; **Holmes:** PDH-1960, FSCA; **Lucas:** HFP-1959, OSU; RAR-1973, RAR; **Montgomery:** MD-1993, AULLWD; **Morgan:** RAR-1990, RAR; **Muskingum:** RAR-1975, RAR; **Pike:** DR-1993, OHS; **Sandusky:** TEP-1985, CMNH.
- 300 *Nebalennia irene*. **Geauga:** TEP-1964,1975, CMNH; **Morrow:** RWA-1993, OHS; **Vinton:** RAR-1972, RAR.
- 301 *Chromagrion conditum*. **Ashtabula:** TEP-1978, CMNH; **Clark:** RCG-1991, OHS; **Gallia:** DR-1993, OHS; **Huron:** PDH-1961, FSCA; **Lucas:** M. Grigore-1992, OHS; **Muskingum:** RWA-1993, OSU; **Pike:** DR-1993, OHS; **Ross:** RWA-1993, OSU; **Trumbull:** TEP-1976, CMNH.
- 305 *Coenagrion resolutum*. **Geauga:** MG-1993, SUMMIT; **Greene:** J. Amon-1993, OHS; **Trumbull:** TEP-1976, CMNH.
- 306 *Enallagma divagans*. **Geauga:** TEP-1974, CMNH; AP-1992, OHS; **Guernsey:** RWA-1993, OSU; **Hocking:** RAR-1969, RAR; **Pike:** RAR-1972, RAR; **Ross:** RWA-1993, OSU; **Scioto:** RAR & WKR-1969, RAR.
- 307 *Enallagma hageni*. **Columbiana:** RAR-1979, RAR; **Lake:** TEP-1980,1982, CMNH.
- 308 *Enallagma boreale*. **Lucas:** HFP-1952, OSU.
- 314 *Enallagma geminatum*. **Ashtabula:** TEP-1980, CMNH; **Athens:** DR-1992, OHS; **Butler:** VL-1964; **Cuyahoga:** TEP-1979, CMNH; **Gallia:** DR-1992, OHS; **Hocking:** DR-1993, OHS; FP-1993, OSUent; **Huron:** PDH-1960, FSCA; **Jackson:** DR-1993, OHS; **Mercer:** RWA-1993, OSU; **Morgan:** RWA-1993, OSU; **Putnam:** L. Gartmen-1972, RAR; **Tuscarawas:** RCG-1986, OHS; **Vinton:** DR-1992, OHS.
- 321 *Enallagma signatum*. **Fulton:** RAR-1972, RAR; **Lucas:** Wilkins-1993, OHS; **Morgan:** RCG-1982, OHS; RWA-1993, OSU.
- 322 *Enallagma vesperum*. **Ashtabula:** TEP-1976, CMNH; **Fairfield:** DR-1993, OHS; **Montgomery:** DH-1993, AULLWD; **Vinton:** RAR-1972, RAR.
- 326 *Enallagma ebrium*. **Ashtabula:** TEP-1980, CMNH; **Athens:** S. Kresge-1989, HTC; **Summit:** TEP-1978,1980, CMNH.
- 327 *Enallagma exsulans*. **Ashtabula:** TEP-1979, CMNH; **Carroll:** RWA-1993, OSU; **Columbiana:** TEP-1979, CMNH; **Cuyahoga:** TEP-1973, CMNH; **Hocking:** RAR-1970,1972, RAR; **Holmes:** PDH-1958,1962, FSCA. This species has not been recorded from only two Ohio counties, Hamilton and Hardin.
- 330 *Enallagma antennatum*. **Pike:** RAR-1972, RAR; **Stark:** PDH-1957, FSCA; RMR-1982, SWC.
- 331 *Enallagma carunculatum*. **Ashtabula:** TEP-1974, CMNH; **Geauga:** TEP-1974, CMNH; AP-1991, OHS; **Lake:** TEP-1976, CMNH.
- 333 *Enallagma civile*. **Wayne:** M. Casey & J. Casey-1991, OHS. This species has not been reported from only three Ohio counties: Jackson, Seneca, and Stark.
- 338 *Enallagma basidens*. **Coshocton:** RWA-1993, OSU; **Greene:** MD-1993, AULLWD; **Hocking:** FP-1993, OSUent; **Jackson:** RWA-1993, OSU; **Lucas:** HFP-1957, OSU; RAR-1973, RAR; **Mercer:** RWA-1993, OSU; **Ottawa:** RAR-1971, RAR; **Richland:** PDH-1958, FSCA; **Shelby:** RWA-1993, OSU; **Summit:** AP-1992, OHS.
- 339 *Enallagma aspersum*. **Adams:** MD-1993, AULLWD; **Butler:** VL-1964; **Columbiana:** TEP-1979,1982, CMNH; **Fairfield:** RCG-1986,1987, OHS; **Huron:** PDH-1960, FSCA; TEP-1984, CMNH; **Lorain:** L. Jones-1897, OHS; **Pickaway:** RAR-1973, RAR; **Portage:** RWA & FJM-1960, OSU; DR-1993, OHS.
- 341b *Enallagma traviatum westfalli*. **Gallia:** DR-1992, OHS; **Geauga:** AP-1991, OHS; **Muskingum:** DR-1993, OHS; **Portage:** DR-1993, OHS; **Summit:** MG-1992, SUMMIT; **Vinton:** DR-1992, OHS.
- 349 *Ischnura posita*. **Belmont:** RAR-1974, RAR; **Carroll:** RWA-1993, OSU; **Delaware:** RAR-1972, RAR; RWA-1993, OSU; **Guernsey:** RWA-1993, OSU; **Huron:** PDH-1960, FSCA; **Knox:** RWA-1993, OSU.
- 360 *Ischnura [Anomalagrion] hastata*. **Adams:** MD-1993, AULLWD; **Auglaize:** RAR-1975, RAR; **Holmes:** PDH-1950, FSCA; **Huron:** TEP-1985, CMNH.

DISCUSSION

Alrutz previously listed 155 species of Odonata for Ohio (Alrutz 1992, 1993). Moody added *Ischnura kelleicotti* to that number (Moody 1993). A re-evaluation of previous published records necessitates a reduction of three species. Carle (1980) described a new species, *Lanthus vernalis*. Carle did not list this species for Ohio, but pointed out that previous records of *Lanthus parvulus* may be this new species. This new species is known from Pennsylvania but has not been found in Ohio. It has been carried on the unofficial lists of the Ohio Odonata Survey, but should be removed from official species counts. *Coryphaeschna ingens* was listed for Ohio by Langlois (1932), refuted by Restifo (1972), but previously still carried on the Ohio Odonata Survey list. A third species, *Celithemis martha*, was added to the Ohio Odonata Survey list based upon a single specimen seen by Restifo in the Ohio State University collections. This specimen has not been found, and so is deleted at this time. Adding the three new state records reported in the present paper, the total number of species for Ohio is corrected to 156.

The numerous county and state records listed in the present paper may mislead the reader to thinking that

Odonata all have healthy, viable populations. Records of the Ohio Odonata Survey indicate that of the 156 species known from Ohio, 37 species (24%) have been reported from only one or two counties, and many of these have not been reported in recent years. An additional 24 species are known from only three to five counties. Survey members are now concentrating on these rare species to determine which are accidental wanderers, which have stable populations with restricted distribution, which may be more abundant but overlooked, and which may be endangered or extirpated populations.

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