

Three New State Records of Odonata from Ohio, with Additional County Records

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Abstract. Since 1995 the members of the Ohio Odonata Survey have newly recorded three dragonfly species to the state list: *Lanthus vernalis*, *Neurocordulia molesta*, and *Somatochlora incurvata*. In addition, survey workers have collected a total of 712 new county records. The total Odonata species and subspecies in Ohio now numbers 159.

History and Acknowledgements

The Ohio Odonata Survey was initiated in 1991 and supported in part with funds from the Ohio Department of Natural Resources, Division of Wildlife's income tax check-off funds with additional assistance from the U.S. Fish & Wildlife Service, the Ohio Biological Survey, and the Crane Hollow Foundation. The mostly volunteer members of the survey donated substantial amounts of time and expertise. Many of the volunteers who have found new county records appear in Table 1 along with other individuals whose records were shared. A complete list of survey volunteers will appear in the appendix to a future publication.

Several members of the Ohio Odonata Survey deserve special mention here. Thirteen members helped found the survey and/or later joined the steering committee. These individuals made major contributions in helping to identify potential survey locations, summarizing characteristics of "targeted species" to assist survey volunteers, and identifying specimens collected by non-professional volunteers. These members include: Robert W. Alrutz, John Bater, Eric G. Chapman, Stephen W. Chordas III, Bernie Counts, Susan Heady, David McShaffrey, Dwight L. Moody, Robert A. Restifo, Dan Riggs, Carmen Trisler, Jan Trybula, and the author.

In 1995, we (Glötzhofer *et al.*) newly reported three other species and 611 additional county records for Ohio. The official time period for the survey ended with the 1997 field season. Survey volunteers have since organized as the Ohio Odonata Society and continue both survey and research projects. This paper presents near-final data from the official survey project. Additional reports and publications are in progress. Taxonomy in this report follows the list prepared for the Dragonfly Society of the Americas (1996; 1999).

Discussion

New State Records

Previously, Glötzhofer (1995) and Glötzhofer *et al.* (1995) reported that *Lanthus vernalis* Carle, 1980 (Gomphidae, Single-striped Clubtail) had been erroneously included in the state list. At that time it was a hypothetical species without actual Ohio records. That species is now correctly re-entered on the state list. Between 31 May and 11 July of 1995 Mark Rzeszotarski collected four males and one female *L. vernalis* at Koelliker Fen in Munson Township, Geauga County while surveying for Lepidoptera. These were later identified by the author and confirmed by Robert Restifo. A local physician, Rzeszotarski volunteers as a Lepidoptera surveyor for the Cleveland Museum of Natural History, which owns the Koelliker Fen preserve. The specimens are in the Cleveland Museum of Natural History collections.

After searches by several field workers at a number of other sites, on 9 June 1997 Chapman collected one male and two female *L. vernalis* at West Branch State Park near Cable Line Road in Portage County. These specimens are in the Ohio Historical Society collections. Current known flight dates in Ohio for *L. vernalis* are 31 May to 11 July, mirroring its species name "of the spring."

The Single-striped Clubtail appears to utilize small, high-quality streams. Koelliker Fen is divided by a very sparkling clear spring-fed stream, which begins a few hundred meters above the fen. Where the stream flows through the fen it is only half

a meter wide and very shallow. Carle (1980) described the species' habitat in detail, along with a lengthy discussion of its ecology, life history, and behavior. Bick and Mauffray (1999) reported *L. vernalis* from 15 other states ranging from Maine to Georgia and west to Pennsylvania, West Virginia, and Kentucky.

On 20 June 1991 Kip Will, then a graduate student at The Ohio State University, collected and identified a single male *Neurocordulia molesta* (Walsh, 1863) (Corduliidae, Smokey Shadowfly) at lights on tennis courts near the Shawnee State Park lodge, Scioto County, Ohio. This site is approximately eight air miles (13 km) from the Ohio River, the presumed nearest appropriate larval habitat of this riverine species. Ohio has very few records of any *Neurocordulia* and at that time there were no specimens of *N. molesta* for comparison in any Ohio collection. Therefore, several survey workers, including the author, reviewed the identification, misinterpreted some characters, and overlooked one important character (see below). This resulted in Will's specimen being erroneously listed as *N. yamaskanensis*.

During 1995 data acquired from the Ohio Environmental Protection Agency (OEPA) included larvae of *N. molesta* from nine counties. These were carefully reviewed and confirmed by Bernie Counts. The larvae of *N. molesta* have a conspicuous pyramidal horn on the front of the head that quickly separates them from all other species of *Neurocordulia*. Afterwards Will's specimen was re-evaluated and corrected. Since June of 1996, ten additional adult *N. molesta* have been collected by various workers. Their known Ohio flight period is between 13 June and 17 August, with June having a distinctive peak in these limited records. The Smokey Shadowfly appears to fly only for a brief period beginning at sunset, along slow-moving large rivers. Even with multiple workers at one site (where larvae have been identified), very few adults were taken, as they are very difficult to see and collect. Without the intensive macro-invertebrate sampling of the OEPA, this species may have been overlooked in Ohio. Larvae are in the OEPA Ecological Assessment Section collections and adults are in the Ohio Historical Society collections and the personal collections of Bernie Counts, Robert A. Restifo, and Eric Eaton.

Larvae of *N. molesta* have been found in the following counties and river systems: Athens County, Hocking River; Coshocton County, Wills Creek and Tuscarawas River; Franklin County, Scioto River; Gallia County, Ohio River; Hamilton County, Little Miami River; Muskingum County, Muskingum River; Pickaway County, Scioto River; Pike County, Scioto River; Washington County, Muskingum River. The few adults collected have been near the same locations, excepting records from Lorain, Meigs, and Scioto counties. The last two of these are presumed to be associated with the Ohio River.

Male *N. molesta* in Ohio (four examined) have a distinctive, short, bluntly-toothed internal process of the trochanter of the middle leg as described on pages 351 and 355 of Needham and Westfall (1954). Males are distinctive and readily identified with this character. This character is absent in males found in Florida and other southern areas (Sidney W. Dunkle, pers. comm., 1996), which may require further evaluation of its taxonomic status. Currently this species is listed for states ranging from South Dakota east to Ohio, south to Florida, and west to Texas (Bick and Mauffray, 1999).

During 1997 Dennis Profant, instructor at Hocking College, brought the author several Odonata specimens collected on 4 July 1996 at the Hocking College Land Lab in York Township, Athens County, Ohio, about 2.5 miles (4 km) south of the main campus in Nelsonville. One specimen was a male *Somatochlora incurvata*, Walker, 1918 (Corduliidae, Incurvate Emerald). Identification was confirmed by Restifo, and later by comparison with specimens of this and related species loaned to the author by Mark O'Brien of the Museum of Zoology, University of Michigan. The Athens County specimen is in the Ohio Historical Society collections.

Flight dates of *S. incurvata* range from 19 July to 30 August, with a record from Nova Scotia from October 15 (Needham and Westfall, 1954; Walker and Corbet, 1975). Bick and Mauffrey (1999) listed it for New Brunswick, Nova Scotia, and Ontario in Canada, and in the United States from Maine, Massachusetts, New York, Pennsylvania, Michigan, and Wisconsin. The single Pennsylvania site (Shiffer, 1969), located in the north-central part of the state, represented the southern most record. The Pennsylvania site is at approximately N41 25.4', whereas the new Ohio record is at approximately N39 24.3', making the Ohio record a substantial southern range extension.

Even within its "normal" range, the Incurvate Emerald appears to be quite uncommonly collected. Walker and Corbet (1975) described the habitat as "sphagnum-choked pools in a large bog." Shiffer (1969) described the Pennsylvania site as a tamarack bog, with adults flying beneath thick, low vegetation under the taller conifers and noted that females oviposited in small, nearly dry ponds. The author collected a single male in Mackinac County, Michigan flying in a narrow fen meadow comprised of various sedges, shrubby cinquefoil (*Potentilla fruticosa*), pitcher plant (*Sarracenia purpurea*), scattered pools with sphagnum and scattered northern white cedar (*Thuja occidentalis*). Brunelle (1997; personal communication, 1998) reported that in Maine it was found in both bog ponds and "peatlands which completely lacked standing water except for little

puddles in the animal trails, and females were seen laying in these puddles and apparently in areas where there was no standing water at all.” The collection site at Hocking College was probably along a wide logging road through an upland oak forest. The site has a number of small ponds and several small creeks, but certainly no bog or other wetlands. A check of the area in July of 1998 was unsuccessful. It appears unlikely that there is a sustained population of *S. incurvata* at the Athens County site and no habitat that fits published descriptions exists anywhere nearby.

Additional County Records

In addition to these three new state records, 712 new county records of Odonata from Ohio are reported. Table 1 lists the abbreviations used for the names of frequent collectors, and Table 2 lists abbreviations used for the collections that house the specimens. Table 3 lists each record grouped by species, showing them as: a.) county name; b.) the collector (or collector abbreviation) and year collected; and, c.) the repository holding the specimen(s). With the addition of these new county records, we now have eight species that have been reported from all 88 counties of Ohio. These are—*Anax junius*, *Enallagma civile*, *Erythemis simplicicollis*, *Ischnura verticalis*, *Libellula luctuosa*, *Libellula lydia*, *Pachydiplax longipennis*, and *Perithemis tenera*.

Despite seven years of effort by a core of workers there are still locations unsampled or sampled inadequately to report all species. Additional new state species and county records are expected.

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Table 1. Abbreviations used for frequent collectors. (* indicates Ohio Odonata Survey members)

AP	Alice H. Phillips*	HFP	Homer F. Price
BB	Bob Bannister*	HS	Henri C. Siebert*
BC	Bernie Counts*	JF	J. Flenniken
CAT	Charles A. Triplehorn	JH	John H. Hubbard*
CC	Carl Cook	JT	Jan Trybula*
CHK	Clarence H. Kennedy	JW	Jerome Wiedmann*
CJ	C. Janus	KN	K. Noblet
CLC	Cathy L. Corr*	LB	Lynn Barnhart
CP	C. Pfeil	LG	Lou Gardella*
CS	Clark Shiffer	MD	Mark Dillon*
CT	C. Todd	MG	Mike Greene*
DF	Donald Flenniken	MOB	Mark O'Brien
DH	Doug Horvath*	MR	Mark Rzeszotarski
Dilley	Mark A. Dilley*	MS	Mike Silvaggio
DJB	Donald J. Borror	MV	M. Veselica
DKP	David K. Parshall*	NWB	N. W. Britt
DM	Dwight L. Moody*	OEPA	Ohio EPA, Ecological Assessment
DMcS	David McShaffrey*	PDH	Paul D. Harwood
DP	Dennis Profant*	RAR	Robert A. Restifo*
DR	Dan Riggs*	RCG	Robert C. Glotzhober*
DW	Dirk Westfall*	RCO	Raymond C. Osburn
EBW	E. B. Williamson	RKF	R.K. Finley
EC	Eric G. Chapman*	RWA	Robert W. Alrutz*
EDC	Everett D. Cashatt	SAR	Scott A. Roush*
EE	Eric Eaton*	SC	Stephen W. Chordas III *
EMP	Erik M. Pilgrim*	SD	Sidney W. Dunkle
ESM	Eugene S. Morton	TEP	T. Edward Perry
EST	Edward S. Thomas	TS	Tom Schultz*
FJM	Frank J. Moore	TSh	Thomas Shisler*
FP	Foster Purrington	WCS	W.C. Stehr
FWS	F. W. Stehr	?	Collector not listed
GAC	Gary A. Coovert		

Table 2. Abbreviations for repositories of specimens.

Aullwd:	Aullwood Audubon Center, Dayton, Ohio	LAKEPK:	Lake Metroparks, Kirtland, Ohio
ASUMZ:	Arkansas State University, Museum of Zoology, Jonesboro, Arkansas	Miami:	University of Miami, Oxford, Ohio
EE:	Eric Eaton, personal collection	OEPA:	Ohio EPA, Columbus, Ohio
BC:	Bernie Counts, personal collection	OHS:	Ohio Historical Society, Columbus, Ohio
Chap:	Eric Chapman, personal collection	OSUa:	The Ohio State University, Department of Entomology, Columbus, Ohio
CinnNH:	Cincinnati (Ohio) Museum of Natural History	OSUmc:	Marietta College (later to OSU)
CMNH:	Cleveland (Ohio) Museum of Natural History	OSUs:	The Ohio State University, Franz Theodore Stone Laboratory, Gibraltar Island, Ohio
CNC:	Cincinnati Nature Center, Milford, Ohio	OU:	Ohio University, Athens, Ohio
DENU:	Denison University, Granville, Ohio	RAR:	Robert A. Restifo, personal collection
DMNH:	Dayton Museum of Natural History (now Boonshoft Museum of Discovery, Dayton, Ohio)	RCG:	Robert C. Glotzhober, personal collection
Dunkle:	Sidney W. Dunkle, personal collection	Shiffer:	Clark Shiffer, personal collection
FIND:	University of Findlay, Findlay, Ohio	Summit:	Metro Parks, Serving Summit County
FSCA:	Florida State Collection of Arthropods, Gainesville, Florida	Trybul:	Jan Trybula, personal collection
Gardel:	Lou Gardella, personal collection	TWC:	The Wilderness Center, Wilmot, Ohio
HTC:	Hocking College, Nelsonville, Ohio	UMMZ:	University of Michigan, Museum of Zoology Ann Arbor, Michigan
ISM:	Illinois State Museum, Springfield, Illinois	WSU:	Wright State University, Dayton, Ohio

Table 3. New county records of Odonata for Ohio.

- Calopteryx maculata*: Hancock-KN 91-FIND; Henry-TB 98-FIND; Ottawa-NWB 57-OSUs; Putnam-DM 94-FIND; Wood-DM 96-FIND; Wyandot-? 51-OHS. (Un-recorded Only from Mercer & Scioto).
- Hetaerina americana*: Guernsey-DMcS 94-OHS; Hamilton-EE 93-EE; Hardin-DM 95-FIND; Ottawa-NWB 56-OSUs and M.W. Boessel 48-OSUs; Stark-EC 90/92- Chap; Trumbull-SC 96-ASUMZ; Van Wert-TB 98-FIND; Washington-DMcS 94-OHS.
- Hetaerina titia*: Athens-DR 95-OHS; Hocking-DR 95-OHS; Washington-CT 95-OSUmC.
- Archilestes grandis*: Adams-OEPA 87-OEPA; Greene-OEPA 82-OEPA; Mahoning-SC 96-ASUMZ; Paulding-HFP 62-OSUa; Pickaway-OEPA 93-OEPA; Richland-OEPA 74-OEPA; Stark-OEPA 86-OEPA; Trumbull-CLC 96-OHS; Washington-Barb Peters 94-OHS.
- Lestes congener*: Greene-K. Harp 74-WSubio; Miami-B. Guild 73-WSU; Stark-RCG 96-OHS; Trumbull-SC 96-ASUMZ; Wayne-FP 87-OHS; Wood-DM 96-FIND.
- Lestes disjunctus australis*: Ashtabula-RCO 18-OSUa; Athens-RAR 75-RAR; Champaign-J.L. Williams 64-OSU; Columbiana-EBW 00-UMMZ; Fairfield-DJB 36-OHS; Greene-SAR 97-DMNH; Hamilton-EE 92-OHS; Hardin-DKP 94-OHS; Henry-DKP 94-OHS; Marion-DKP 91-OHS; Mercer-HFP 42-OSU; Ottawa-EST 51-OSUa; Ross-M.E. Crago 36-OSUa; Stark-MG 96-Summit.
- Lestes disjunctus disjunctus*: Erie-RCO 1899-OSUa & UMMZ; Franklin-RCG 87-OHS; Harrison-EC 97-CMNH; Henry-DKP 96-OHS; Ottawa-David Kellicott 1895-UMMZ; Pickaway-RCG 84-OHS.
- Lestes dryas*: Medina-RCO 1899-OSUa; Wood- EC 97-CMNH; Wyandot-DM 96-FIND.
- Lestes eurinus*: Adams-EE 93-EE; Butler-JT 96- Trybul; Clermont-JH 95-CNC; Columbiana-SC 96-ASUMZ; Hamilton-JT 96- Trybul; Hocking-DR 95-OHS; Miami-Chris McKay 94-OHS; Putnam-Nate Closson 94-FIND; Wayne-RCG 97-OHS.
- Lestes forcipatus*: Carroll-SC 97-ASUMZ; Cuyahoga-LG 97-GARDEL; Delaware-DJB 31-OSUa; Marion-SC 97-ASUMZ; Medina-SC 97-ASUMZ & SD 97-DUNKLE; Summit-RCG 96-OHS; Trumbull-SC 96-ASUMZ; Wayne-FP 87-OHS.
- Lestes inaequalis*: Carroll-DMcS 95-OHS; Mahoning-SC 96-ASUMZ; Tuscarawas-EC 97-CMNH.
- Lestes rectangularis*: Adams-MD 94-Aullwd; Carroll-SC 97-ASUMZ; Hamilton-RAR 95-RAR; Seneca-RWA & ESM 60-OSUa. (Un-recorded only from Brown, Monroe, & Scioto).
- Lestes unguiculatus*: Auglaize-SC 97-ASUMZ; Fayette-SC 96-ASUMZ; Geauga-RAR 72-RAR; Greene-R. Flint 75-WSU; Hamilton-EE 95-EE; Licking-TS 97-DENU.
- Lestes vigilax*: Ashtabula-EC 97-CMNH; Butler-JT 95-Miami; Clark-DR 96-OHS; Columbiana-SC 96-ASUMZ; Fairfield-TS 98-DENU; Jackson-OEPA 84/86-OEPA; Logan-DR 95-OHS; Medina-SD 97-Dunkle.
- Amphiagrion saucium*: Gallia-James S. Hine 1900-UMMZ; Highland-RCO 1899-OSUa; Jefferson-JF 65-OSUa; Ottawa-? 68-OSUa; Ross-EST 31-OHS; Stark-MG 95-Summit; Tuscarawas-EC 97-OHS; Vinton-DR 96-OHS.
- Argia apicalis*: Morrow-SC 97-ASUMZ. (Un-recorded only from Columbiana & Jefferson).
- Argia bipunctulata*: Greene-EMP 98-OHS, Stark-MG 95-Summit.
- Argia fumipennis violacea*: Ottawa-D.E. Beilstein 67-OSUa; Wyandot-DM 96-FIND. (Un-recorded only Coshocton, Lucas, Marion, Mercer, Putnam).
- Argia moesta*: Clark-RCG 94-OHS; Hardin-DM 95-FIND; Hocking-RCG 94-OHS; Madison-PDH 63-FSCA; Trumbull-SC 96-ASUMZ; Washington-DMcS 94-OHS; Wayne-M. Sean Ellis 94-OSUa; Wyandot-DM 96-FIND.
- Argia sedula*: Henry-DM 98-FIND; Warren-HFP 51-OSUa.
- Argia tibialis*: Columbiana-EC 97-CMNH; Hamilton-JH 94-CNC; Hocking-RCG 94-OHS; Preble-CS 72-Shiffer; Washington-DMcS 94-OHS.
- Argia translata*: Licking-Ava Hauck 98-DENU; Portage-RCG 96- OHS; Trumbull-SC 96-ASUMZ.
- Chromagrion conditum*: Jefferson-JF 65-OSUa. (? Highland EBW 1898-UMMZ = “Danville, OH” could be Highland, Knox, or Meigs Co.).
- Enallagma antennatum*: Defiance-PDH 46-FSCA & HFP 49-OSUa; Highland-DJB 34-OSUa; Ottawa-? 70-OSUa.
- Enallagma aspersum*: Hocking-DG 95-OHS; Mercer-DJB 33-OSUa; Scioto-DJB 31-OSUa; Trumbull-SC 96-ASUMZ; Wayne-FP 87-OHS.
- Enallagma basidens*: Erie-TEP 85-CMNH; Wood-SC 94-ASUMZ. (Un-recorded only from Ashtabula, Henry, Jefferson, Mahoning, and Sandusky counties. Alrutz (1961) considered this an invading species that had become widespread. The first record was by D. J. Borror (1937) in Clermont County.)
- Enallagma boreale*: Summit-MG 96-Summit.
- Enallagma carunculatum*: Greene-DJB 34-UMMZ.
- Enallagma civile*: Jackson-RAR 95-RAR; Seneca-DM 98-FIND; Stark-RWA 59-OSUa. (Recorded from All Counties as of 1998.)

Enallagma cyathigerum: Ottawa-C. Ahrens 70-OSUa.

Enallagma divagans: Highland-DJB 34-OSUa; Lake-JW 96-LAKEPK; Tuscarawas-EC 97-OHS.

Enallagma exsulans: Hardin-DM 95-FIND. (Un-recorded only from Hamilton Co.).

Enallagma geminatum: Wood-DM 96-FIND.

Enallagma hageni: Summit-EC 99-CMNH.

Enallagma signatum: Marion-SC 97-ASUMZ; Richland-SC 97-ASUMZ; Washington-DMcS 94-OHS.

Enallagma traviatum westfalli: Ashland-PDH 49-FSCA; Carroll-PDH 50-FSCA; Clark-RCG 96-OHS; Clermont-CS 72-Shiffer; Cuyahoga-LG 95-GARDEL; Erie-RCO 1897-OSUa; Fairfield-SC 95-ASUMZ; Hocking-PDH 61-FSCA; Lake-RAR 73-RAR; Lucas-RCG 94-OHS; Medina-SD 97-Dunkle; Miami-MD 94-Aullwd; Montgomery-MD 94-Aullwd; Morgan-LB 95-OHS; Richland-PDH 58-FSCA; Ross-RAR 74-RAR; Seneca-DM 96-FIND; Wayne-PDH 59-FSCA..

Enallagma vesperum: Clermont-CS 72-Shiffer; Scioto-RCG 97-OHS.

Ichnura hastata: Greene-D.J. Grumbarger 96-DMNH; Ross-DJB 42-OSUa; Stark-RWA 59-OSUa; Washington-DMcS 94-OHS.

Ichnura posita: Athens-RAR 74-RAR; Henry-DM 96-FIND; Ottawa-CAT 50-OHS. (Un-recorded only from Hamilton, Harrison, and Wyandot counties.)

Nehalennia gracilis: Athens-DP 95-HTC; Portage-MG 94-Summit.

Nehalennia irene: Delaware-DJB 30-OSUa; Highland-RCO 1899-OSUa.

Tachopteryx thorey: Gallia-CC 94-FSCA; Geauga-MR 95-CMNH; Highland-RCG 94-OHS; Jefferson-DF 65-OSUa; Ross-W.B. Shively 95-OHS.

Aeshna canadensis: Lucas-MOB 97-UMMZ; Ross-? 1897-CinnNH.

Aeshna constricta: Ashtabula-EC 93- Chap; Athens-HS 79-OU; Greene-SAR 97-DMNH; Huron-PDH 60-FSCA; Lucas-MOB 97-UMMZ; Mahoning-SC 96-ASUMZ; Montgomery-E.J. Koestner 56-DMNH; Ross-? 1897-CinnNH; Stark-R.M. Ritter ?-TWC.

Aeshna mutata: Geauga-RCG 95-OHS, RAR 95-RAR, & MD 95-Summit.

Aeshna tuberculifera: Athens-Chris Tahyi 94-OHS; Carroll-OEPA 92-OEPA; Harrison-EC 97-CMNH; Hocking-EC 93?- Chap & DR 96-OHS; Licking-S. Peters 96-DENU; Pike-Lyons & Hauk 68-DMNH; Summit-MG 95-Summit.

Aeshna umbrosa: Athens-FWS 48-OU; Delaware-OEPA 85-OEPA; Greene-MV 75-WSU; Hocking-Mike Flynn 94-OHS; Jefferson-DF 64-OSUa; Montgomery-G.R. Pilate 1900-DMNH; Muskingum-SC 96-ASUMZ; Perry-DR 93-OHS; Putnam-NC 94-FIND; Sandusky-OEPA 86-OEPA; Union-OEPA 85-OEPA; Washington-DMcS 94-OHS; Wayne-PDH 70-FSCA.

Aeshna verticalis: Ashtabula-JW 97-LAKEPK; Carroll-SC 97-ASUMZ; Portage-LG 98-Gardel; Ross-? 1898-CinnNH; Washington-CT 94-OHS; Wayne-Mike Wright 39-UMMZ.

Anax junius: Columbiana-EBW 1901-UMMZ. (Now recorded from all 88 counties.)

Anax longipes: Athens-HS 87-OU; Meigs-EC 97-CMNH; Ross-EC 97-ASUMZ; Sandusky-Russ Philpot 13-OSUa; Wayne-FP 87-OHS; Williams-EDC 96-ISM. (Note: Previous sight records for Wayne-DJB-37 and Williams-HFP-58 are now confirmed.)

Basiaeshna janata: Adams-MD 94-Aullwd; Athens-WCS 32-OU; Carroll-OEPA 84-OEPA; Champaign-OEPA 87-OEPA; Clermont-OEPA 90-OEPA; Crawford-OEPA 79-OEPA; Cuyahoga-OEPA 92-OEPA; Gallia-OEPA-90-OEPA; Guernsey-OEPA 92-OEPA; Hardin-OEPA 93-OEPA; Harrison-OEPA 92-OEPA; Holmes-OEPA 93-OEPA; Huron-OEPA 87-OEPA; Jackson-OEPA 84-OEPA; Knox-OEPA 87-OEPA; Lawrence-OEPA 90-OEPA; Logan-OEPA 96-OEPA; Mahoning-OEPA 85-OEPA; Medina-OEPA 92-OEPA; Miami-OEPA 82-OEPA & MD 94-Aullwd; Montgomery-MD 94-Aullwd; Pike-OEPA 92-OEPA; Preble-OEPA 86-OEPA; Ross-OEPA 92-OEPA; Stark-OEPA 93-OEPA; Warren-OEPA 93-OEPA. (Note: Most of these records are from larva only. The adults fly early and are missed by many collectors, despite their widespread abundance.)

Boyeria vinosa: Allen-OEPA 74-OEPA; Athens-WCS 53-OU; Brown-OEPA 83-OEPA; Clark-OEPA 79-OEPA; Columbiana-OEPA 85-OEPA; Cuyahoga-OEPA 91-OEPA; Fayette-OEPA 89-OEPA; Guernsey-OEPA 87-OEPA; Hamilton-OEPA 91-OEPA; Hancock-OEPA 83-OEPA; Harden-OEPA 84-OEPA; Harrison-OEPA 82-OEPA; Henry-OEPA 86-OEPA; Jefferson-OEPA 83-OEPA; Lorain-OEPA 82-OEPA; Lucas-OEPA 93-OEPA; Medina-OEPA 81-OEPA; Meigs-OEPA 89-OEPA; Mercer-OEPA 84-OEPA; Monroe-OEPA 92-OEPA; Montgomery-U. Khot 80-DMNH; Morgan-OEPA 89-OEPA; Morrow-OEPA 84-OEPA; Muskingum-OEPA 88-OEPA; Noble-OEPA 87-OEPA; Pickaway-OEPA 82-OEPA; Pike-OEPA 93-OEPA; Richland-OEPA 84-OEPA; Ross-OEPA 81-OEPA; Sandusky-OEPA 81-OEPA; Scioto-OEPA 90-OEPA; Shelby-OEPA 82-OEPA; Summit-MG 94-Summit; Union-OEPA 78-OEPA; Van Wert-OEPA 88-OEPA; Warren-OEPA 89-OEPA; Washington-DMcS 94-OHS; Wood-OEPA 88-OEPA; Wayne-OEPA 93-OEPA; Wyandot-OEPA 79-OEPA. (Un-recorded only from Clermont, Fulton, and Ottawa.)

Boyeria grafiana: Hocking-DR 96-OHS; Ross-Denis Case 97-OHS; Summit-MG 94-Summit.

Epiaeschna heros: Ashtabula-SC 96-ASUMZ; Clark-J.C. Roseberry 86-DMNH; Cuyahoga-CP 85-CMNH; Gallia-OEPA 93-OEPA; Medina-SC 96-ASUMZ; Montgomery-P. Johnson 69-DMNH; Trumbull-SC 96-ASUMZ.

Nasiaeschna pentacantha: Auglaize-OEPA 91-OEPA; Delaware-OEPA 85-OEPA; Franklin-OEPA 92-OEPA; Madison-OEPA 86-OEPA; Marion-OEPA 87-OEPA; Miami-MD 94- Aullwd; Montgomery-MD 94- Aullwd; Union-OEPA 85-OEPA; Van Wert-OEPA 84-OEPA..

Arigomphus furcifer: Geauga-MG 94-Summit; Summit-OEPA 88-OEPA..

Arigomphus villosipes: Ashtabula-SC 96-ASUMZ; Carroll-DMcS 95-OSUmc; Champaign-RCG 85-RCG; Clark-RCG & DR 96-OHS; Defiance-CC 94-FSCA; Greene-SAR 97-DMNH; Henry-DM 94-FIND; Medina-SD 94-Dunkle; Morrow-SC 97-ASUMZ; Stark-EC 97-CMNH; Washington-DMcS 94-OHS.

Dromogomphus spinosus: Athens-DR 95-OHS; Defiance-CC 94-FSCA; Fairfield-DR 96-OHS; Gallia-OEPA 93-OEPA; Greene-SAR 97-DMNH; Hamilton-B.M. Branson 97-CNC; Hocking-EC 92-Chap; Huron-OEPA 87-OEPA; Meigs-OEPA 93-OEPA; Monroe-DMcS 95-OSUmc; Noble-EC 97-OHS; Ottawa-CHK 34-FSCA; Pickaway-DR 96-OHS; Union-OEPA 90-OEPA; Van Wert-OEPA 84-OEPA; Washington-DMcS 94-OHS; Williams-OEPA 84-OEPA..

Dromogomphus spoliatus: Athens-FWS 53-OU.

Gomphus viridifrons: Adams-MD 94-Aullwd; Franklin-? 1903-OSUa; Monroe-CC 94-FSCA;

Gomphus fraternus: Adams-MD 94-Aullwd; Ashtabula-CLC 96-OHS; Athens-HS 88-OU; Cuyahoga-LG 95-Gardel; Fayette-SC 95-ASUMZ; Greene-MD 94-Aullwd; Medina-SD 97-Dunkle; Montgomery-MD 94 & DH 94-Aullwd; Pickaway-RCG 96-OHS; Sandusky-RCO 1899-OSUa; Warren-MD 94-Aullwd; Washington-DMcS 95-OSUmc; Wyandot-DM 96-FIND.

Gomphus externus: Darke-OEPA 90-OEPA; Erie-OEPA 84-OEPA; Montgomery-OEPA 92-OEPA; Pickaway-RCG & Nick Donnelly 96-OHS; Ross-OEPA 87-OEPA; Seneca-OEPA 90-OEPA; Tuscarawas-OEPA 88-OEPA; Williams-OEPA 92-OEPA; Wyandot-OEPA 90-OEPA..

Gomphus crassus: Madison-CHK 20-UMMZ; Miami-MD 94-Aullwd; Montgomery-GAC 69-DMNH.

Gomphus vastus: Licking-OEPA 93-OEPA; Meigs-DR 95-OHS; Muskingum-OEPA 88-OEPA; Stark-OEPA 88-OEPA; Tuscarawas-OEPA 88-OEPA; Washington-DMcS 95-OHS.

Gomphus ventricosus: Montgomery-DH 94-Aullwd.

Gomphus lividus: Carroll-OEPA 91-OEPA; Champaign-MD 94-Aullwd; Clark-RCG & DR 96-OHS; Clinton-OEPA 93-OEPA; Coshocton-DJB 34-UMMZ; Crawford-OEPA 92-OEPA; Cuyahoga-LG 95-Gardel; Jefferson-OEPA 83-OEPA; Lake-JW 97-LAKEPK; Miami-MD 94-Aullwd; Montgomery-MD 94-Aullwd; Preble-OEPA 83-OEPA; Scioto-RCG 97-OHS; Washington-DMcS 95-OSUmc.

Gomphus graslinellus: Adams-RCG 97-OHS; Butler-JT 96-Miami; Clermont-JH 95-CNC; Hancock-OEPA 83-OEPA; Madison-? 1897-UMMZ; Miami-MD 94-Aullwd; Seneca-DM 91-FIND.

Gomphus exilis: Lawrence-EC 97-CMNH; Licking-RWA 91-OSUa; Medina-SD 94-Dunkle.

Gomphus spicatus: Geauga-MG 94-Summit; Morrow-SC 94-ASUMZ.

Gomphus quadricolor: Knox-OEPA 87-OEPA; Miami-MD 94-Aullwd; Montgomery-MD&DH 94-Aullwd; Shelby-OEPA 82-OEPA; Washington-DMcS 95-OSUmc.

Hagenius brevistylus: Delaware-Mike Wright 39-UMMZ; Fairfield-DR 96-OHS; Gallia-OEPA 93-OEPA; Geauga-MG 95-Summit; Hocking-DR 94-OHS; Lake-T. Hagestrom 94-LAKEPK; Meigs-OEPA 93-OEPA; Monroe-CC 94-FSCA; Pike-BC 93-Counts; Scioto-BC 94-Counts; Tuscarawas-OEPA 83-OEPA; Washington-DMcS 97-OHS; Warren-MD 94-Aullwd.

Lanthus parvulus: Adams-OEPA 87-OEPA; Ashtabula-MS 95-OHS; Athens-HS 88-OU; Columbiana-OEPA 83-OEPA; Cuyahoga-CJ 73-RAR; Coshocton-OEPA 93-OEPA; Geauga-MG 95-Summit; Jefferson-OEPA 83-OEPA; Licking-OEPA 86-OEPA; Scioto-OEPA 84-OEPA.

Lanthus vernalis: New State Record. Geauga-MR 95-CMNH; Portage-EC 97-OHS.

Ophiogomphus rupinsulensis: Ashland-CHK 39-UMMZ; Belmont-Tony Minamyer 91-OEPA; Columbiana-SC 96-ASUMZ; Madison-Div. Natural Areas & Preserves 93-OHS; Pickaway-Mark Dilley 90-OHS.

Ophiogomphus carolus: Columbiana-SC 96-ASUMZ; Jefferson-JF 65-OSUa; Lake-JW 97-LAKEPK.

Progomphus obscurus: Fairfield-DR 96-OHS; Meigs-WCS 38-OU; Ross-OEPA 92-OEPA.

Stylurus notatus: Adams-MD 95-Aullwd; Coshocton-OEPA 88-OEPA; Gallia-OEPA 90-OEPA; Hamilton-EE 92-Eaton; Meigs-DR 95-OHS; Pike-OEPA 85-OEPA; Tuscarawas-OEPA 88-OEPA; Washington-DW 94-OHS.

Stylurus plagiatus: Adams-BB 96-DMNH; Putnam-DM 95-FIND.

Stylurus spiniceps: Athens-WCS 43-OU; Clark-CC 49-FSCA; Coshocton-OEPA 88-OEPA; Cuyahoga-OEPA 88-OEPA; Greene-MD 95-Aullwd; Holmes-OEPA 88-OEPA; Jefferson-OEPA 83-OEPA; Licking-TS 98-DENU; Pickaway-OEPA 88-OEPA; Portage-LG 98-Gardel; Stark-OEPA 89-OEPA; Tuscarawas-OEPA 92-OEPA; Washington-CT 95-OSUmc; Wayne-OEPA 93-OEPA.

Stylurus laurae: Fairfield-TSh 96-OHS; Gallia-DR 93-OHS.

Stylogomphus albistylus: Adams-OEPA 87-OEPA; Belmont-OEPA 91-OEPA; Cuyahoga-OEPA 88-OEPA; Hocking-DR 96-OHS; Holmes-OEPA 93-OEPA; Knox-OEPA 89-OEPA; Medina-OEPA 92-OEPA; Monroe-OEPA 92-OEPA; Richland-OEPA 93-OEPA; Summit-OEPA 88-OEPA & MG 96-Summit; Washington-OEPA 84-OEPA.

Cordulegaster bilineata: Licking-“MDN” 31-OHS; Montgomery-R.K. Finley 69-DMNH; Ross-EST 31-OHS

Cordulegaster diastatops: Summit-AP 94-Summit.

Cordulegaster erronea: Ross-DC 96-OHS.

Cordulegaster maculata: Licking-TS 98-DENU; Warren-MD 94-Aullwd; Washington-DW 94-OHS.

Cordulegaster obliqua: Athens-DR & RCG 98-OHS; Franklin-J.B. Parker 1899-OSUa; Mahoning-SC 96-ASUMZ; Meigs-BC 97-OEPA; Pike-BC 97-OEPA.

Didymops transversa: Butler-“MWB” 65-Miami; Gallia-OEPA 93-OEPA; Meigs-OEPA 93-OEPA; Pike-OEPA 92-OEPA.

Macromia alleghaniensis: Fairfield-DR 96-OHS; Hocking-DR 96-OHS; Vinton-DR 95-OHS.

Macromia i. illinoiensis: Belmont-OEPA 91-OEPA; Butler-JT 96-Trybul; Clermont-“N. Col.” 1897-CinnNH; Coshocton-Mike Hoggarth 96-OSUa; Darke-OEPA 82-OEPA; Delaware-OEPA 85-OEPA; Gallia-OEPA 93-OEPA; Hamilton-EE 93-Eaton; Madison-OEPA 79-OEPA; Meigs-DR 94-OHS; Muskingum-OEPA 88-OEPA; Warren-GAC 88-DMNH; Washington-DMcS 94-OSUmc.

Macromia i. georgina: Adams-MD 94-Aullwd.

Macromia pacifica: Auglaize-HFP 61-OSUa; Defiance-DR 95-OHS; Morgan-DR 95-OHS.

Macromia sp. indet.: Miami-MD 94-Aullwd; Paulding-HFP 61-OSUa.

Macromia taeniolata: Athens-FWS 53-OU; Auglaize-HFP 61-OSUa; Hardin-DM 95-FIND; Meigs-DR 94-OHS; Montgomery-R. Newman 90-DMNH; Morgan-DR 95-OHS; Portage-Alice Phillips 95-OHS; Putnam-DM 95-FIND; Scioto-MD 96-DMNH; Stark-EC 97-CMNH; Wyandot-DM 96-FIND.

Macromia wabashensis: Logan-DR 95-OHS; Montgomery-GAC 87-DMNH; Putnam-CC 93-FSCA.

Cordulia shurtleffi: Portage-MG 94-OHS & RCG 94-OHS.

Epitheca canis: Cuyahoga-LG 95-Gardel; Trumbull-SC 96-ASUMZ.

Epitheca cynosura: Ashtabula-TEP 75-CMNH; Clark-DR 96-OHS; Columbiana-SC 96-ASUMZ; Cuyahoga-LG 94-Gardel; Gallia-OEPA 93-OEPA; Lawrence-EC 97-CMNH; Miami-MD 94-Aullwd; Montgomery-DH & MD 94-Aullwd; Trumbull-SC 96-ASUMZ.

Epitheca princeps: Fulton-MD 94-FIND; Greene-SAR 97-DMNH; Henry-RCO 1898-OSUa; Mahoning-EC 97-CMNH; Mercer-EC 97-CMNH; Trumbull-EC 97-CMNH.

Helocordulia uhleri: Adams-MD 94-OHS; Ross-R.A. Champlain 54-OSUa. NOTE: Champlain & Whiting (1955) reported this species from Tar Hollow State Forest as Hocking County. They did not give a precise location in the forest, and the forest today includes portions of Hocking, Ross, and Vinton Counties. Two males in the OSU collections (from the 3 males & 1 female reported) are labeled Ross county, apparently “corrected” by someone without an explanation. The addition of Ross County should be accepted with some question.

Neurocordulia molesta: New State Record. Athens-OEPA 90-OEPA; Coshocton-OEPA 87-OEPA; Franklin-OEPA 91-OEPA; Gallia-OEPA 90-OEPA & DR 95-OHS; Hamilton-OEPA 93-OEPA & EE 94-Eaton; Lorain-DMcS 96-OHS; Meigs-DR 95-OHS; Muskingum-OEPA 88-OEPA; Pickaway-OEPA 88-OEPA; Pike-OEPA 85-OEPA; Scioto-Kip Will 91-OHS; Washington-OEPA 88-OEPA & CT 95-OHS.

Neurocordulia obsolleta: Columbiana-OEPA 87-OEPA; Morgan-OEPA 85-OEPA; Scioto-OEPA 83-OEPA; Washington-OEPA 88-OEPA.

Neurocordulia yamaskanensis: Adams-OEPA 87-OEPA; Knox-OEPA 87-OEPA; Meigs-DR 95-OHS; Morgan-OEPA 89-OEPA; Ross-BC 97-OEPA; Washington-DMcS 96-OSUa. Note: The Scioto County record previously reported (Glotzhober *et. al.*, 1995) should be deleted as it represents a misidentification of *N. molesta*.

Somatochlora ensigera: Van Wert-HFP 61-OSUa.

Somatochlora linearis: Butler-? 69-Miami; Delaware-OEPA 92-OEPA; Fairfield-OEPA 88-OEPA; Hocking-EST 40-OHS; Jackson-RAR 95-RAR; Lake-JW 96-LAKEPK; Lucas-EDC 96-ISM; Mahoning-EC 96-Chap; Meigs-OEPA 89-OEPA; Stark-OEPA 85-OEPA; Vinton-OEPA 80-OEPA & DR 96-OHS; Warren-FJM 60-OSUa; Wyandot-DKP 93-OHS.

Somatochlora incurvata: New State Record. Athens-DP 97-OHS.

Somatochlora tenebrosa: Fairfield-TSh 96-OHS; Jefferson-OEPA 83-OEPA; Lucas-HFP 58-OSUa; Pike-TS 98-DENU.

Celithemis eponina: Butler-Dobies & Wessells 92-Miami; Crawford-DJB & CHK 37-OSUa; Greene-J.A. Gessaman 57-DMNH; Monroe-DMcS 95-OSUa; Ottawa-HFP 41-OSUa; Union-SC 94-ASUMZ.

Celithemis elisa: Allen-EC 97-CMNH; Columbiana-SC 96-ASUMZ; Geauga-MG 94-Summit; Greene-SAR 97-DMNH; Medina-SD 97-Dunkle; Sandusky-E. Easton 1900-OSUa; Trumbull-SC 96-ASUMZ.

Celithemis fasciata: Defiance-CC 94-FSCA; Scioto-BB 96-DMNH.

Leucorrhinia frigida: Portage-MG 94-Summit.

Leucorrhinia intacta: Carroll-SC 97-ASUMZ; Mahoning-SC 96-ASUMZ.

Libellula cyanea: Carroll-DMcS 95-OHS; Lawrence-DKP 96-OHS.

Libellula deplanata: Butler-JT 95-Miami; Vinton-RCG 95-OHS.

Libellula incesta: Fairfield-DR 96-OHS; Lawrence-DKP 93-OHS; Pike-TS 98-DENU.

Libellula lydia: Adams-MD 94-Aullwd; Lawrence-DKP 96-OHS. Reported in all counties.

Libellula pulchella: Clark-DR 96-OHS. (Recorded in all counties, but only by sight record in Fayette, DJB,1937).

Libellula quadrimaculata: Stark-MG 96-Summit.

Libellula semifasciata: Clermont-JH 95-CNC; Meigs-EC 97-CMNH.

Libellula vibrans: Clark-EC 99-Chap; Hocking-Borror & Jenkins 37-OSUa; Lucas-HFP 59-OSUa; Portage-RCO 1900-OSUa; Wayne- Borror & Jenkins 37-OSUa.

Pantala flavescens: Adams-EC 97-CMNH; Champaign-HFP 58-OSUa; Clinton-FJM 56-OSUa; Greene-B. Stiles 68-WSU; Hardin-DR 95-OHS; Jackson-RAR 95-RAR; Lucas-HFP 58-OSUa; Putnam-HFP 61-OSUa; Stark-EC 92-Chap; Summit-MG 95-Summit; Warren-J.J. Falke 68-DMNH; Washington-CT 95-OSUmc.

Pantala hymenaea: Coshocton-OEPA 83-OEPA; Cuyahoga-LG 94-Gardel; Geauga-MG 94-Summit; Hocking-DR 94-OHS; Meigs-DR 94-OHS; Miami-OEPA 82-OEPA; Montgomery-DH & MD 94-Aullwd; Pickaway-RCG 96-OHS; Stark-OEPA 85-OEPA; Warren-OEPA 83-OEPA; Washington-DMcS 94-OHS; Wyandot-DKP 94-OHS.

Sympetrum ambiguum: Crawford-CHK 37-OSUa; Hocking-J.S. Thomas 36-OHS; Jackson-RAR 95-RAR; Montgomery-T.D.Center 68-DMNH; Warren-Finley et al. 68-DMNH.

Sympetrum corruptum: Logan-? 1896-UMMZ; Lucas-HFP 58-OSUa; Mercer-RCO 1896-OSUa.

Sympetrum obtrusum: Champaign-J.N. Knull 43-OSUa; Darke-Alrutz/Morton 60-OSUa; Fulton-HFP 56-OSUa; Geauga-TEP 72-CMNH & RAR 72-RAR; Greene-Koestner & Riegel 56-DMNH; Preble-C.S. Fox 80-Miami.

Sympetrum rubicundulum: Clark-GAC 73-DMNH; Clinton-FJM 60-OSUa; Guernsey-BC 95-OEPA; Jefferson-JF 65-OSUa; Morgan-LB 95-OHS.

Sympetrum semicinctum: Ashtabula-EST 35-OHS; Columbiana-SC 96-ASUMZ; Darke-Bob Roth 59-DMNH; Hocking-DR 95-OHS; Mahoning-SC 96-ASUMZ; Morgan-LB 95-OHS; Ottawa-LG 94-Gardel; Sandusky-EBW 1903-UMMZ; Stark-CAT 50-OSUa; Vinton-J.J. Jenkinson 58-OHS; Warren-Center & Finley 68-DMNH.

Sympetrum vicinum: Crawford-RWA 58-OSUa; Fulton-DM 98-FIND; Hocking-DR 96-OHS; Lawrence-DKP 93-OHS; Madison-SC 94-ASUMZ; Ross-DJB 42-OSUa.

Tamea carolina: Adams-MD 95-Aullwd; Allen-OEPA 88-OEPA; Clinton-FJM 62-OSUa; Cuyahoga-LG 98-Gardel; Defiance-CC 94-FSCA; Lucas-HFP 58-OSUa.

Tamea lacerata: Allen-EC 97-CMNH; Fulton-DM 94-FIND; Trumbull-SC 96-ASUMZ; Washington-DMcS 95-OHS; Wayne-FP 87-OHS; Wood-DM 96-FIND.

Tamea onusta: Adams-EC 97-CMNH; Butler-K.F. Horn 74-Miami; Stark-EC 92-Chap; Trumbull-SC 96-ASUMZ; Union-EC 97-CMNH.

