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# New Illinois Butterfly Records for Clark, Coles, Cumberland, Douglas, and Edgar Counties

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## ABSTRACT

The butterfly (Lepidoptera) fauna of east-central Illinois is largely undocumented. We collected butterflies and examined specimens in the Insect Museum at Eastern Illinois University for unpublished records for five counties in east-central Illinois. Here we report 105 new butterfly county records: 17 for Clark County, 30 for Coles County, 28 for Cumberland County, 9 for Douglas County, and 21 for Edgar County. We also describe behavioral observations, in particular those behaviors related to reproduction, for some of the records. Of special note were two rare vagrants from Coles County found in the museum collection, the orange-barred sulphur (*Phoebis philea*) and the marine blue (*Leptotes marina*).

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## INTRODUCTION

The butterfly (Lepidoptera) fauna of East-central Illinois is largely undocumented (Bouseman and Sternburg 2001). In fact, with only a few published records for each county, the butterfly species in this region are perhaps the least known of any area in Illinois (Bouseman 1997). To help fill this gap in our understanding of Illinois butterflies, we made survey and collection trips periodically from September 2001 to September 2002 to five counties in this region: Clark, Coles, Cumberland, Douglas, and Edgar. In addition, we examined the Insect Museum in the Department of Biological Sciences at Eastern Illinois University, Charleston, IL (EIUC) for other unpublished records for these five counties. Below we present the new records and relevant behavioral observations from our study. We use common names throughout the text (following Glassberg 1999); scientific names for these species are listed in Table 1.

## NEW RECORDS

Our identifications were verified by J.K. Bouseman and J.G. Sternburg of the Illinois Natural History Survey in Champaign, Illinois. Table 1 lists the new records, collection locations, and date of capture. Voucher specimens were collected and are housed perma-

nently at EIUC. Specimens were determined as new county records if they were not listed as a published or unpublished record in Bouseman and Sternburg (2001) *Butterflies of Illinois*. Bouseman and Sternburg (2001) used current information from a variety of sources, including Irwin and Downey (1973) and the insect collections at the Illinois Natural History Survey in Champaign, to create their lists of county records.

Most of the new records represent common species in Illinois. However, of particular note are the new records for orange-barred sulphur and marine blue from the EIUC collection. Orange barred sulphur, a southern species, has been recorded previously in one Illinois county (Bouseman and Sternburg 2001). Glassberg (1999) noted that northern records for this species are generally from at least 60 years ago, which roughly corresponds to the capture date of this specimen. The marine blue is a southwestern species common in Texas (Glassberg 1999). In 1993 (the same year as our record) a large movement of this species occurred to the northern states (Glassberg 1999).

### **BEHAVIORAL OBSERVATIONS AND EVIDENCE OF REPRODUCTION**

The following describes observations recorded for the species representing new records in the 5 county area.

#### **Larval stages**

We recorded larvae in Clark County for red-spotted purple (crossing a road in Lincoln Trail State Park, 29 Aug 2002). In Coles County we recorded larvae for monarch (on common milkweed, *Asclepias syriaca*; August 2002), black swallowtail (on dill *Anethum graveolens*, parsley *Petroselinum crispum*, and rue *Ruta graveolens*; July, August, October 2002), spicebush swallowtail (on spicebush *Lindera benzoin*; August 2002), and red-spotted purple (on cottonwood, *Populus deltoides*; 17 Aug 2002). In Cumberland County, larval stages were recorded for monarch (common milkweed; 01 Sept 2002).

#### **Copulation**

In Clark County, we observed copulation by monarch (25 Aug 2002). In Coles County, copulation was observed in pearl crescent (17 Aug 2002). In Douglas County, we observed copulation by buckeye (28 Sept 2002) and in Edgar county by orange sulphur (03 Aug 2002) and by monarch (03 Aug 2002).

#### **Chasing or Patrolling**

Chasing (pursuit of nearby conspecifics or heterospecifics) was observed in Clark County by black swallowtail (29 Aug 2002), eastern comma (25 Aug 2002), red-spotted purple (25 Aug 2002) and tawny emperor (25 Aug 2002). In Coles County, chasing was observed by spicebush swallowtail (17 Aug 2002), summer azure (27 May 2002), hackberry emperor (07 July 2002), question mark (02 June 2002), and viceroy (17 Aug 2002). In Cumberland County, we observed chasing by pipevine swallowtail (26 July 2002), patrolling and chasing by black swallowtail (19 July 2002), patrolling by checkered white (19 July 2002), and chasing by cabbage white (07 July 2002) and eastern comma (26 July 2002). The black swallowtails patrolled rectangular areas (approximately 15 m on a side) over soybeans and corn at the end of a hedgerow; the checkered white patrolled a rectangular area over soybeans approximately approximately 5 m on a side. In Douglas County we observed chasing by pearl crescent (28 Sept 2002), and in Edgar County chasing by

hackberry emperor (03 Aug 2002), and buckeye (03 Aug 2002). Of particular interest was a viceroy continually pursuing a red-spotted purple at Fox Ridge State Park in Coles County on 17 Aug 2002. The pursuit lasted for 1-2 min as the viceroy followed the red-spotted purple from plant to plant, occasionally landing on the leaf next to the red-spotted purple. Such continued pursuit of a heterospecific is unusual (e.g. Schultz and Switzer 2001); unfortunately, the two individuals evaded capture so their sex was unknown.

#### **Sap and/or Fruit feeding**

We observed sap feeding for question mark, hackberry emperor and tawny emperor. Species observed feeding at rotten fruit included question mark, eastern comma, gray comma, viceroy, red-spotted purple, hackberry emperor, and tawny emperor.

### **ACKNOWLEDGMENTS**

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Table 1. Locations of new butterfly (Lepidoptera) county records for 5 counties in east-central Illinois. Location (as specific as possible) and date of collection is recorded if a new record was found for that county. Most were collected by I.C. Switzer, J.A. Switzer, and P.V. Switzer from September 2001-September 2002. Footnotes correspond to collectors of unpublished records existing in the Insect Museum at Eastern Illinois University, Charleston, IL. All voucher specimens are housed in the Insect Museum at EIU.

Species	Clark	Coles	Cumberland	Douglas	Edgar
Pipevine swallowtail <i>Battus philenor</i>		3 km E of Charleston 07 July 2002	6 km N of Greenup 07 July 2002		
Zebra swallowtail <i>Eurytides marcellus</i>		Charleston 17 Aug 2002			
Black swallowtail <i>Papilio polyxenes</i>	1 km E of Westfield 25 Aug 2002		6 km N of Greenup 07 July 2002		Rd 400 near Grandview 03 Aug 2002
Spicebush swallowtail <i>Papilio troilus</i>		3 km S of Charleston 02 June 2002	6 km N of Greenup 07 July 2002		Rd 400 near Grandview 03 Aug 2002
Giant swallowtail <i>Papilio cressphontes</i>	Lincoln Trail St. Park 29 Aug 2002	Charleston 04 Aug 2002			
Eastern tiger swallowtail <i>Papilio glaucus</i>	1 km E of Westfield 25 Aug 2002	3 km S of Charleston 02 June 2002	6 km N of Greenup 26 July 2002		Rd 400 near Grandview 03 Aug 2002
Checkered white <i>Pontia protodice</i>		27 Sept. 1971 <sup>a</sup>	Union Center 19 July 2002	Tuscola, IL 06 Sept 1947 <sup>b</sup>	01 Aug 1971 <sup>c</sup>
Cabbage white <i>Pieris rapae</i>	1 km E of Westfield 25 Aug 2002		6 km N of Greenup 07 July 2002	Arcola Marsh 28 Sept 2002	Grandview 03 Aug 2002
Clouded sulphur <i>Colias philodice</i>	3 km E of Westfield 23 June 2002		12 km S of Charleston 19 Oct 2001		Rd 400 near Grandview 03 Aug 2002
Orange sulphur <i>Colias eurytheme</i>	3 km E of Westfield 23 June 2002	Lake Charleston 30 Sept 2001	12 km S of Charleston 19 Oct 2001	Arcola Marsh 28 Sept 2002	Grandview 03 Aug 2002
Dainty sulphur <i>Nathalis iole</i>		2 km E of Charleston 20 Sept 1970 <sup>d</sup>	27 Sept 1964 <sup>e</sup>		

Species	Clark	Coles	Cumberland	Douglas	Edgar
Little yellow <i>Eurema lisa</i>			6 km N of Greenup 07 July 2002		
Orange-barred sulphur <i>Phoebis philea</i>		Charleston August 1952 <sup>f</sup>			
Gray copper <i>Lycaena dione</i>			01 July 1972 <sup>g</sup>		
Banded hairstreak <i>Satyrium calanus</i>		Fox Ridge St. Park 19-26 June 1993 <sup>h</sup>			
Gray hairstreak <i>Strymon melinus</i>		Charleston 19 Aug 2002	Union Center 18 July 2002		
Marine blue <i>Leptotes marina</i>		19 June 1993 <sup>i</sup>			
Summer azure <i>Celastrina neglecta</i>		Douglas-Hart Nature Center 27 May 2002	6 km N of Greenup 07 July 2002		29 July 1971 <sup>c</sup>
Variiegated fritillary <i>Euptoieta claudia</i>			10 km N of Greenup 01 Sept 2002		
Great spangled fritillary <i>Speyeria cybele</i>	Lincoln Trail St. Park 29 Aug 2002	3 km S of Charleston 02 June 2002	6 km N of Greenup 07 July 2002		
Meadow fritillary <i>Boloria bellona</i>		23 July 1973 <sup>j</sup>			3 July 1971 <sup>c</sup>
Silvery checkerspot <i>Chlosyne nycteis</i>			6 km N of Greenup 26 July 2002		Rd 400 near Grandview 03 Aug 2002
Pearl crescent <i>Phyciodes tharos</i>	Rd 2100 E of Westfield 25 Aug 2002	Lake Charleston 30 Sept 2001	6 km N of Greenup 07 July 2002	Arcola Marsh 28 Sept 2002	Grandview 03 Aug 2002
Question mark <i>Polygonia interrogationis</i>	Rd 400 E of Westfield 25 Aug 2002	3 km S of Charleston 02 June 2002		Arcola Marsh 28 Sept 2002	Rd 400 near Grandview 03 Aug 2002
Eastern comma <i>Polygonia comma</i>	Rd 400 E of Westfield 25 Aug 2002	Charleston 02 Sept 2002	6 km N of Greenup 26 July 2002		Rd 400 near Grandview 03 Aug 2002

Species	Clark	Coles	Cumberland	Douglas	Edgar
Gray comma <i>Polygonia progne</i>		Charleston 28 Sept 2002			
Mourning cloak <i>Nymphalis antiopa</i>		Douglas-Hart Nature Center 30 Sept 2001			24 July 1971 <sup>c</sup>
Painted lady <i>Vanessa cardui</i>	1 km E of Westfield 25 Aug 2002	Douglas-Hart Nature Center 30 Sept 2001	12 km S of Charleston 19 Oct 2001		
Red admiral <i>Vanessa atalanta</i>		Charleston 26 June 2002	10 km N of Greenup 01 Sept 2002		Rd 400 near Grandview 03 Aug 2002
American snout <i>Libytheana carinenta</i>	Rd 400 E of Westfield 25 Aug 2002	Charleston 04 Aug 2002	2 km W of Union Center 18 July 2002		Rd 400 near Grandview 03 Aug 2002
Common buckeye <i>Junonia coenia</i>	1 km E of Westfield 25 Aug 2002		10 km N of Greenup 01 Sept 2002	Arcola Marsh 28 Sept 2002	Rd 400 near Grandview 03 Aug 2002
Red-spotted purple <i>Limenitis arthemis astyanax</i>	Rd 2100 E of Westfield 25 Aug 2002	Charleston 15 Aug 2002	6 km N of Greenup 31 Aug 2002	Arcola Marsh 28 Sept 2002	Grandview 03 Aug 2002
Viceroy <i>Limenitis archippus</i>		Lake Charleston 30 Sept 2001	10 km N of Greenup 01 Sept 2002	Arcola Marsh 28 Sept 2002	Rd 400 near Grandview 03 Aug 2002
Goatweed leafwing <i>Anaea andria</i>		Aug 1948 <sup>k</sup>			
Hackberry emperor <i>Asterocampa celtis</i>	3 km E of Westfield 23 June 2002	4 km S of Charleston 07 July 2002	6 km N of Greenup 31 Aug 2002		Grandview 03 Aug 2002
Tawny emperor <i>Asterocampa clyton</i>	Rd 2100 E of Westfield 25 Aug 2002	Fox Ridge St. Park 17 Aug 2002	10 km N of Greenup 01 Sept 2002		
Northern pearly-eye <i>Enodia anthedon</i>		Fox Ridge St. Park 11 Aug 2002			
Little wood-satyr <i>Megisto cymela</i>		3 km E of Charleston 07 July 2002	6 km N of Greenup 07 July 2002		

<b>Species</b>	<b>Clark</b>	<b>Coles</b>	<b>Cumberland</b>	<b>Douglas</b>	<b>Edgar</b>
Monarch	1 km E of Westfield		10 km N of Greenup	Arcola Marsh	Rd 400 near Grandview
<i>Danaus plexippus</i>	25 Aug 2002		01 Sept 2002	28 Sept 2002	03 Aug 2002

<sup>a</sup>Evans; <sup>b</sup>C. Corley; <sup>c</sup>Langlen; <sup>d</sup>D. Mattis; <sup>e</sup>M.J. Corn ; <sup>f</sup>Mike Strange; <sup>g</sup>Tom Stuart; <sup>h</sup>M.A. Goodrich (malaise trap); <sup>i</sup>W.S. James; <sup>j</sup>A. Weber; <sup>k</sup>N.D. Waltrip