DISTRIBUTION OF LYCAENIDAE (LEPIDOPTERA) IN ILLINOIS

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ABSTRACT.—A list of 27 species of Lycaenidae from Illinois is presented with their county distribution, flight periods, and number of broods per year. Attention is focused on those counties from which few distribution records are known.

The butterfly family Lycaenidae (including the Riodininae) is worldwide in distribution and consists of approximately 7,000 species. These represent nearly half of the described species of the superfamily Papilionoidea. Information on Illinois Lycaenidae is slight and scattered in such works as the summary for the North American collecting season published annually by the Lepidopterists' Society (i.e. Remington, 1948-1951). Worthington (1880) seems to be the only author who has dealt exclusively with the Illinois butterflies. The paucity of records of Lycaenidae from the state led me in 1962 to solicit data on distribution from various collectors. The response to the original survey and the continued help of Illinois lepidopterists has been most gratifying and has been instrumental in the decision of Mr. Roderick Irwin and the author to join forces in a larger work on Illinois Papilionoidea and Hesperioidea. It has also provided incentive to publish this preliminary report on the Lycaenidae, which should facilitate the progress and add to the coverage of the larger study by disclosing those areas where little collecting has been done. The value of critical analysis is often (paradoxically) the elucidation of what is unknown, rather than what is known.

Table 1 is a list of species of Lycaenidae now known to occur in Illinois. None of the species is endemic; all occur in other states. The names follow Ehrlich and Ehrlich (1961). Subspecies names have not been used. An asterisk indicates that the species was also cited by Worthington (1880). In order to better interpret Worthington and perhaps other early papers, it seems advisable to indicate how the early names differ from modern usage. Exclusive of generic assignments, the following differences may be noted (Worthington names first, modern usage last): *americana* D'Urban=*phleas americana* Harris; *borealis* Gr. & Rob. (*sensu* Worthington *nec auct.*)=*muticum* McAlpine; *dione* Scud.=*xanthoides dione* Scud.; *humuli* Harr.=*melinus humuli* Harr.; *poeas* Hbn.=*cecrops* Fabr.; *pseudargiolus* Bdv. & Lec.=*argiolus* Linn.; *scudderii* Edw. (Illinois records)=*melissa samuelis* Nab.; *smilacis* Bdv. (& Lec.)=*gryneus* Hbn.; *strigosa* (*sic.*) Harr.=*liparops strigosus* Harr.

TABLE 1. **Flight Period Data for Illinois Lycaenidae.**

Species	Months (by initial)									Estimated No. Broods
	M	A	M	J	J	A	S	O	N	
Callophrys gryneus (Hbn.)*		X	X	X	X					2
C. henrici (Grote & Rob.)	X	X	X							1
C. irus (Godt.)*			X							1
C. niphon (Hbn.)*		X	X							1
C. polios (Cook & Wats.)		X	X							1
Calycopis cecrops (Hbn.)*		X		X		X		X		2+
Celastrina argiolus (Linn.)*	X	X	X	X	X	X	X			2+
Chrysophanus titus (Fabr.)*				X	X	X				1
Euristrymon ontario (Edw.)			X							1
Everes comyntas (Godt.)*		X	X	X	X	X	X	X		3+
Feniseca tarquinius (Fabr.)*		X	X	X	X	X	X			2+
Glaucopsyche lygdamus (Dbldy.)*		X	X							1
Hemiargus isola (Reak.)				X	X	X	X	X		2
Lephelisca muticum (McAlp.)*			X							1
Leptotes marinus (Reak.)							X			1
Lycaena helloides (Bdv.)			X	X	X	X	X	X		2+
L. phleas Linn.*		X	X	X	X	X	X	X		3+
L. thoe Guer.*			X	X	X	X	X	X	X	2+
L. xanthoides Bdv.*				X	X	X				1
Panthiades m-album (Bdv. & Lec.)*		X	X		X	X		X		2+
Plebejus melissa Edw.*			?							1
Satyrium acadica (Edw.)*				X	X	X				1
S. calanus (Hbn.)*			X	X	X					1
S. caryaevorus (McD)					X					1
S. edwardsi (Saund.)*				X	X					1
S. liparops (Bdv. & Lec.)*			X	X	X					1
Strymon melinus (Hbn.)*		X	X	X	X	X	X	X		3+

* Reported by Worthington, 1880.

Flight period data are given in Table 1. Since local conditions may affect adult emergence and longevity in any one area, the flight periods may vary in different populations from north to south or from year to year. Physical factors may also influence the number of broods per year so that the numbers given in Table 1 are only estimates for the multiple-brooded species.

Several species have been collected in only one county. In the case of *caryaevorus*, *niphon*, *ontario* and *polios*, captures on two or more dates, or in two or more years, suggest that resident populations are established. More extensive collecting will very probably show each of these species to have a wider distribution in the state. Both the *irus* and *melissa* records stem from single specimens in the collection of the Illinois Natural History Survey. The former species is labeled "Beach" (Illinois Beach State Park, Lake County) while the *melissa* specimen is labeled only "N. Illinois." Although other Illinois specimens referable to these species may eventually be located in private collections, it would appear that both species are considerably rarer than published records might indicate. Both species are given

by Worthington (loc. cit.), and their occurrence in Illinois is mentioned by Klots (1951). In the case of *Plebejus melissa samuelis* Nab., a hasty or careless judgment of the "vic. Chicago" citation by Nabokov (1949) could lead to error. Whereas that author was justified in his citation, and actually gave the Hartman Farm locality from which the original specimens were obtained, the site is in Indiana as Kwiat (1908) makes perfectly clear. On the basis of the single specimen mentioned above, and the possibility of its occurrence in the northeast part of the state, *melissa* is retained in the list and given the same flight period as specimens from Hartman Farm, Hessville, Indiana. This species is also entered as a Cook County record in Table 2 although it may have been taken elsewhere in the northern part of the state.

Table 2 gives the distribution of the species of Lycaenidae by county. County records of and by themselves are not the desired feature; rather, as indicated by their use here, they do serve as an index of geographical coverage, and should provide some valuable information on general distribution. Six of the 102 counties have no lycaenid records and for that reason probably no other records of diurnal Lepidoptera. In addition, 54 counties have only one or two species of lycaenids reported. In fact, were we to take the eastern-tailed blue, *Everes comyntas*, from our data sheets, 31 of our counties would have no lycaenids recorded. This situation is shown graphically in Figure 1, where the concentration of Lepidopterists (and collecting) is reflected by those counties with the largest number of species. Counties with no records, or only *comyntas*, have had the least amount of reported collecting, and future efforts might well be directed toward obtaining specimens in these areas. It is interesting to note that the location of state supported universities (indicated on the map) is not correlated with areas

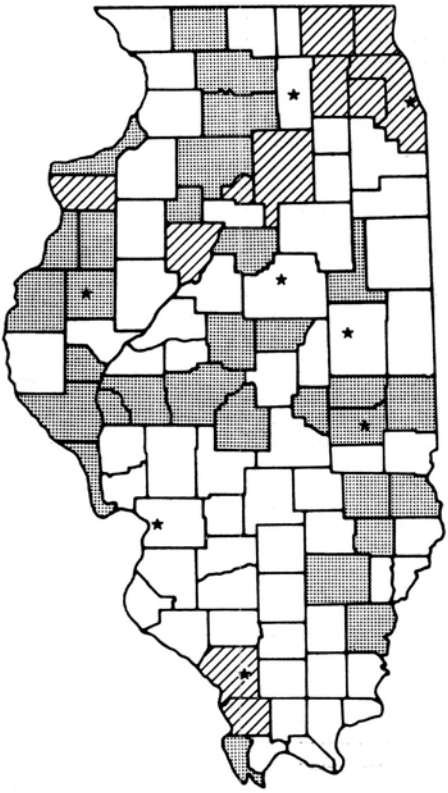

FIGURE 1. Map of Illinois showing counties from which Lycaenidae have been reported. Counties marked with oblique stripes have 10 or more species reported and also have resident lepidopterists. Counties marked with stiples have either no records or only one species (*Everes comyntas*); unmarked counties have two to nine lycaenids in the list. Stars indicate the campuses of state Universities (see text).

TABLE 2.—County Distribution Records of the Species of Lycaenidae in Illinois.

County	acadica	argiolus	calanus	caryaevorus	cecrops	comyntas	edwardsi	gryneus	helloides	henrici	irus	isola	liparops	lygdamus	m-album	marinus	melinus	melissa	muticum	niphon	ontario	phleas	polios	tarquinius	titus	thoe	xantholdes
Adams			X					X																			
Alexander						X																					
Bond		X				X											X										
Boone			X						X					X													
Brown						X																					
Bureau						X																					
Calhoun						X																					
Carroll						X											X										
Cass						X											X										
Champaign		X	X			X											X					X		X		X	
Christian						X																					
Clark						X							X				X					X			X		
Clay						X																				X	
Clinton		X				X											X					X					
Coles						X																					
Cook	X	X	X	X	X	X	X	X	X			X	X	X	X	X	X	X	X			X		X	X	X	X
Crawford						X																					
Cumberland						X																				X	
De Kalb						X																				X	
De Witt						X																					
Douglas						X																					
Du Page	X	X	X			X	X		X				X				X							X	X	X	X
Edgar						X																					
Edwards						X																				X	
Effingham						X																				X	
Fayette		X	X			X											X									X	
Ford						X																					
Franklin		X				X																				X	
Fulton						X											X					X					
Gallatin						X											X										
Greene						X						X										X					
Grundy		X				X																X					
Hamilton						X																				X	
Hancock																											
Hardin			X			X		X					X				X										
Henderson																											
Henry						X																				X	
Iroquois						X			X													X					
Jackson		X	X		X	X		X		X			X				X			X	X	X			X	X	
Jasper																											
Jefferson						X																X				X	
Jersey						X						X			X		X									X	
Jo Daviess			X					X					X													X	
Johnson						X				X							X					X					
Kane	X	X	X			X	X		X			X	X	X			X		X			X				X	X
Kankakee						X																X		X			
Kendall																									X		
Knox						X											X										
Lake	X	X	X			X	X		X		X	X		X			X		X			X	X		X	X	
LaSalle		X	X			X		X	X								X					X		X	X	X	X
Lawrence						X											X					X					
Lee																											

TABLE 2.—Continued.

County	acadica	argiolus	calanus	caryaevorus	cecrops	comyntas	edwardsi	gryneus	helloides	henrici	irus	isola	liparops	lygdamus	m-album	marinus	melinus	melissa	muticum	niphon	ontario	phleas	polios	tarquinius	titus	thoe	xanthoides
Livingston	..	X	X	..	..	X	..	..	..	..	..	..	..	..	X	..	X	..	..	..	..	X	..	X	..	X	X
Logan	..	..	..	..	..	X	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Macon	..	..	..	..	..	X	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	X	..	..	..	..	..
Macoupin	..	..	..	..	..	X	..	..	..	..	..	..	..	..	..	..	X	..	..	..	..	X	..	..	..	..	..
Madison	..	X	..	..	..	X	..	..	..	X	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	X	..
Marion	..	X	X	..	..	X	..	..	..	..	..	X	X	..	..	..	X	..	..	..	..	X	..	..	X	X	..
Marshall	..	X	..	..	..	X	..	..	..	..	..	..	..	..	..	..	X	..	..	..	..	X	..	..	X	X	X
Mason	..	..	X	..	..	X	X	X	..	..	..	..	..	..	..	..	X	..	..	..	..	X	..	..	..	X	..
Massac	..	..	..	..	..	X	..	X	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
McDonough	..	..	..	..	..	X	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
McHenry	X	X	X	..	..	X	X	..	X	..	..	..	..	X	..	..	X	..	X	..	..	X	..	..	..	X	..
McLean	..	X	..	..	..	X	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	X	X
Menard	..	..	..	..	..	X	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	X	..	..	..	..	..
Mercer	..	X	X	..	..	X	..	..	..	..	..	X	X	..	..	X	X	..	..	..	..	X	..	X	X	X	X
Monroe	..	..	..	..	..	X	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	X	X	..
Montgomery	..	X	..	..	..	X	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	X	..	..	..	..	..
Morgan	..	..	..	..	..	X	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Moultrie	..	..	..	..	..	X	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Ogle	..	..	..	..	..	X	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Peoria	..	X	X	..	..	X	..	X	X	X	..	..	X	..	..	..	X	..	..	..	..	X	..	X	X	X	X
Perry	..	..	..	..	..	X	..	..	..	..	..	..	..	..	..	..	X	..	..	..	..	..	..	..	..	X	..
Piatt	..	..	X	..	..	X	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Pike	..	..	..	..	..	X	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Pope	..	X	X	..	X	X	..	X	..	X	..	..	..	..	..	..	X	..	..	..	..	..	..	X	X	..	..
Pulaski	..	..	X	..	..	X	..	..	..	..	..	..	..	..	..	..	X	..	..	..	..	X	..	..	..	X	..
Putnam	..	X	X	..	..	X	X	X	..	X	..	..	..	..	X	..	X	..	..	..	..	X	..	X	X	X	X
Randolph	..	..	..	..	..	X	..	X	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Richland	..	..	..	..	..	X	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Rock Island	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Saint Clair	..	..	..	..	X	X	..	..	..	X	..	..	..	..	X	..	..	..	..	..	..	..	..	..	..	..	..
Saline	..	X	..	..	..	X	..	..	..	X	..	..	..	..	..	..	X	..	..	..	..	X	..	..	..	..	..
Sangamon	..	..	..	..	..	X	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Schuyler	..	..	..	..	..	X	..	..	..	..	..	..	..	..	..	..	X	..	..	..	..	..	..	..	..	..	..
Scott	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Shelby	..	..	..	..	..	X	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	X	X	..
Stark	..	..	..	..	..	X	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Stephenson	..	..	..	..	..	X	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Tazewell	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	X	..	..	..	..	..
Union	..	X	..	..	X	X	..	X	..	X	..	..	..	..	X	..	X	..	..	..	..	X	..	X	..	X	..
Vermilion	..	X	..	..	..	X	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Wabash	..	..	..	..	..	X	..	..	..	..	..	..	..	..	..	..	X	..	..	..	..	..	..	..	X	..	..
Warren	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	X	..	..	..	..	..
Washington	..	..	..	..	X	X	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Wayne	..	..	..	..	..	X	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
White	..	..	..	..	..	X	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Whiteside	..	..	..	..	..	X	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	X	..	..	..	X	..
Will	..	X	..	..	..	X	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	X	..
Williamson	..	X	..	..	X	X	..	..	..	..	..	..	..	..	..	..	X	..	..	..	..	X	..	..	X	X	..
Winnebago	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	X	..	..	..	..	..	..	..	..	X	..
Woodford	..	..	..	..	..	X	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..

from which we have the greatest amount of information even though some of these institutions have large insect collections, and all have departments offering courses in entomology.

It may be determined from Table 2 that almost half of the lycaenid species in the state are broadly distributed, though not necessarily common. Widespread species include: *argiolus, calanus, comyntas, gryneus, henrici, isola, liparops, m-album, melinus, phleas, tarquinius, titus* and *thoe*. Eleven species have a Northern or North-central state distribution: *acadica, caryaevorus, edwardsii, helloides, irus, lygdamus, marinus, melissa, muticum, polios* and *xanthoides*. Only three, *cecrops, niphon,* and *ontario* appear to be limited to the southern part of the state, and *cecrops* has been recorded once from Chicago (*casual?*).

It is hoped that this list will indicate to the reader that in spite of a rather large number of collectors, the butterflies are not as well known as may people believe, and even the basic questions of "what" and "where" need to be answered. With continued cooperative efforts much can be learned in a relatively short time.

Acknowledgments

I am most grateful to the following people for distributional records: G. L. Adams, R. Arnold, J. L. Boughner, T. G. Brady, M. L. Bristol, H. K. Clench (Carnegie Museum), P. J. Conway, M. Davis, Dr. H. Dybas (Chicago Natural History Museum), M. O. Glenn, R. R. Irwin, D. A. Lawrence, D. Oemick, D. R. Parkinson, L. S. Phillips, Dr. H. H. Ross (Illinois Natural History Survey), L. Schatz, T. Taylor, G. Zelnick, and A. K. Wyatt. Acknowledgement is also made to the National Science Foundation (Grant No. G23560) and to the Graduate School, Southern Illinois University for the support of longer ranged studies of Lycaenidae.

Literature Cited

Ehrlich, P. R., and A. H. Ehrlich, 1961. How to know the butterflies. Wm. C. Brown Co., Dubuque, Iowa. Pp. 262.

Klots, A. B. 1951. A field guide to the butterflies of North America, East of the Great Plains. Houghton Mifflin Co., Boston, Mass. Pp. 349.

Kwiat, A. 1908. One day's collecting, with a description of a new noctuid. Ent. News. 19(9): 420-424.

Nabokov, V. 1949. The Nearctic members of the genus *Lycaeides*. Bull. Mus. Comp. Zool. 101(4): 479-541.

Remington, P. S. Jr. 1948-1951. Central [States]. *In* the field season summary of North American Lepidoptera . . . Lepidopterists News, 2 (supplement): pg. VI. 3(8-9): 94. 5(8): 100.

Worthington, C. E. 1880. A list of diurnal lepidoptera inhabiting the state of Illinois. Canad. Ent. 12(1): 46-50.

Manuscript received December 17, 1965.