

NOTES ON THE CARABIDAE OF OHIO

I. TETRAGONDERUS FASCIATUS HALD., BEMBIDIUM LAEVIGATUM SAY, AND GEOPINUS INCRASSATUS (Dej.) IN OHIO (COLEOPTERA—CARABIDAE)

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While perusing some of the earlier volumes of Entomological literature, one is impressed by the wealth of observations recorded as notes, particularly upon the abundance and distribution of various species of insects. It is regrettable that such a faculty for observation and writing of such notes is lacking in the majority of the present day workers in entomology, although there appears to be an increase in the publication of such records in recent years.

It is with this thought in mind, that the information here presented may be of use to others in not only extending the knowledge of the fauna in areas similar to Ohio, but also to extend and enlarge the collections already extant in this state, rather than the assumption that these records present a complete picture of the distribution of these species in Ohio.

On June 24, 1933, while on a collecting trip in Hocking County, the first specimens of *Tetragonderus fasciatus* Hald. were observed in their natural habitat. This occurred quite accidentally while seated upon a bank of white sand along Salt Creek, about three miles west of South Bloomingville, resting from the exertions and the heat of the day. It was noticed that when the base of the clumps of grass and other plants growing in the sand were disturbed, a small whitish-appearing beetle, later identified as the above species, scurried to a new hiding place. The smallness of the insects and the instability of the loose sand, made capture rather difficult without injury to the specimen. A rather intensive search resulted in the capture of six specimens. Upon returning the next day to same locality, four more specimens were secured.

Prior to this date, only five specimens of *T. fasciatus* had been taken. The first of these was collected among stones close to the water edge, along the Portage River, two miles northwest of Pemberville, in Wood County, Ohio, on June 13,

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1931. Two other specimens were taken on May 25, 1933, and the remaining two on June 5, 1933, in Lucas County (Adams Township, Section 23), along a gravel road, about two miles north of Maumee. These specimens in both instances were attracted to the headlamps of the automobile, while parked collecting other insects.

Since this observation was made in Hocking County, some 122 specimens have been taken. The largest collection was made in this same county, just south of Logan, along the west bank of the Hocking River, just south of the Chesapeake and Ohio railroad bridge (Falls Township, Section 14), on August 5, 1934, when 54 specimens were collected. In Gallia County, along the sandy banks of a small stream a few miles north of Vinton (Huntington Township, Section 13), 40 individuals of this species were secured on August 7, 1934. The only other locality where this species was noted in rather abundant numbers was in Holmes County along Paint Creek, a few miles south of Holmesville (Prairie Township, Section 9), where 14 specimens were collected on August 3, 1934. One specimen was taken in Fairfield County (Berne Township), near Sugar Grove, along Hocking River, on June 1, 1935.

While examining material in this family in other collections made in this state, only seven other specimens of this species were noted. One was in the Dury collection at Cincinnati, and was labeled Cincinnati, Ohio, 6-27-5, no collector indicated. Mr. Ralph Dury, Director of the Cincinnati Museum of Natural History, states that this species is quite abundant in the vicinity of this city in habitats similar to that described above. Four are in the collection of the Ohio Agricultural Experiment Station, at Wooster, Ohio, one from Ashtabula, Ohio, and three from Cedar Point, Ohio, and two are in the collection of the Ohio University at Athens, Ohio, collected by Dr. Stehr on white sand along Hocking River at Athens.

In the records of the Ohio Biological Survey there is a record of this species being taken by Mr. Sim in Erie County, at Cedar Point, on July 15, 1912. There is no statement as to the number collected, nor were any specimens seen.

The following tabulation summarizes the present knowledge of the distribution of this species in Ohio, so far as it is known:

ATHENS COUNTY, OHIO.		
Athens, Ohio, May 21, 1935.....	2 sp.	W. C. Stehr.
ASHTABULA COUNTY, OHIO.		
Ashtabula, Ohio, 6-9-1899.....	1 sp.	(?).

ERIE COUNTY, OHIO.		
Cedar Point, Ohio, July 15, 1912..... ?		Sim (O. B. S. record).
Cedar Point, Ohio, 7-10-1899..... 3 sp.		(?)
FAIRFIELD COUNTY, OHIO.		
Berne Twp., Sugar Grove, June 1, 1935..... 1 sp.		R. T. Everly.
GALLIA COUNTY, OHIO.		
Huntington Twp., Sec. 13, Aug. 7, 1934..... 40 sp.		L. W. & R. T. Everly.
HAMILTON COUNTY, OHIO.		
Cincinnati, Ohio, 6-27-5..... 1 sp.		(?).
HOCKING COUNTY, OHIO.		
Scenic Inn, near Ash Cave, Aug. 5, 1934..... 4 sp.		L. W. & R. T. Everly.
Conckle's Hollow, Aug. 6, 1934..... 1 sp.		L. W. & R. T. Everly.
Falls Twp., Sec. 14, Aug. 5, 1934..... 54 sp.		L. W. & R. T. Everly.
Salt Creek Twp., Sec. 24, June 24, 1933..... 6 sp.		L. W. & R. T. Everly.
Salt Creek Twp., Sec. 24, June 25, 1933..... 4 sp.		L. W. & R. T. Everly.
HOLMES COUNTY, OHIO.		
Prairie Twp., Sec. 9, Aug. 2, 1933..... 3 sp.		R. T. Everly.
Prairie Twp., Sec. 9, Aug. 3, 1933..... 14 sp.		R. T. Everly.
LUCAS COUNTY, OHIO.		
Adams Twp., Sec. 23, May 25, 1933..... 2 sp.		L. W. and R. T. Everly.
Adams Twp., Sec. 23, June 5, 1933..... 2 sp.		L. W. and R. T. Everly.
Adams Twp., Sec. 23, Sept. 8, 1933..... 2 sp.		R. T. Everly.
Washington Twp., Sec. 8, in sandy tomato field, Aug. 4, 1934..... 2 sp.		R. T. Everly.
WOOD COUNTY, OHIO.		
Freedom Twp., Sec. 1, June 13, 1931..... 1 sp.		R. T. Everly.

Another species taken in close association with *T. fasciatus* was *Bembidium laevigatum* Say. This latter species was not nearly so abundant, and has been taken in habitats other than that where *T. fasciatus* is commonly found. In Hocking County, south of Logan (Falls Township, Section 14), where 54 specimens of *T. fasciatus* were collected, 7 specimens of *B. laevigatum* were also taken on August 5, 1934. In a similar habitat in Holmes County (Prairie Township, Section 9), on July 31, August 2, and August 3, 1933, six individuals of the latter species were secured. In the Dury collection there were four specimens from Cincinnati, two without dates, the others dated 7-12-5 and 7-11-13. None of the specimens bore collector labels. Mr. Ralph Dury corroborates the observation that this species occurs in a similar habitat and at the same time as *T. fasciatus*.

The first specimens of *B. laevigatum* observed were collected just north of Lake Alma in Jackson County, under stones on the western slope of a bare hill, on April 3, 1932, and on June 23, 1933, two specimens were collected in Hocking County (Salt Creek Township, Section 24), along Salt Creek, three miles west of South Bloomingville, where the largest series of this species was secured on August 5, 1934. The stream had been high recently and with the abatement of the water, had

deposited a heavy layer of silt upon the bank. This deposit dried rapidly, forming large cracks. By pressing these cracks together with the feet, a number of insects were forced out by the pressure, and among these were nine specimens of *B. laevigatum*. One individual of this species was taken on the bank of the Ohio River near the Gallipolis Airport on August 7, 1934, four specimens were secured along the banks of the Auglaize River, just north of Cascade, Ohio, in Putnam County (Perry Township, Section 21), on May 21, 1934, and in Coshocton County one was secured along the Walhonding River near Six Mile Dam near Warsaw (Bethlehem Township, central portion), and three from along the Koskosing River near its confluence with the Mohican River (New Castle Township, northwest portion), on May 25, 1935.

In addition to the specimens in the Dury collection, the following specimens have been seen. Two specimens are in the collection of the Ohio State Archaeological and Historical Society at Columbus, Ohio, one from along the Olentangy River north of the University Campus, and the other from Fairfield County (Berne Township), and one specimen labeled Columbus, Ohio, is in the Hines collection at the same place. Two are in the Ohio University collection at Athens, one from Athens, Ohio, and the other from Meigs County. In a thesis presented for the degree of Master of Science at Ohio State University in 1916 by T. L. Guyton, is recorded one specimen of this insect, collected upon milkweed in Guernsey County, Madison Township.²

Four of these specimens herein recorded as *B. laevigatum* show marked differences and may be characteristic enough to warrant at least a variety name. However, rather than retard the publication of this data by the necessary study required to verify these differences, they are here included as this species.

The following list summarizes the distribution of *B. laevigatum* in Ohio:

ATHENS COUNTY, OHIO.		
Athens, Ohio, 4-28-34.....	1 sp.	H. Bauman.
COSHOCTON COUNTY, OHIO.		
New Castle Twp., N. W., May 25, 1933.....	3 sp.	R. T. Everly.
Bethlehem Twp., C, May 25, 1933.....	1 sp.	R. T. Everly.

²Although this specimen was not seen, its identification can be reasonably assumed, as the species is very characteristic in both shape and coloration, and not easily confused with other species of Carabidae.

FAIRFIELD COUNTY, OHIO.		
Berne Twp., X-15-33.....	1 sp.	H. Goslin and E. S. Thomas.
FRANKLIN COUNTY, OHIO.		
Columbus, Ohio, (?).....	1 sp.	(?).
Columbus, Ohio, May 27, 1933.....	1 sp.	William Ross.
GALLIA COUNTY, OHIO.		
Gallipolis Airport, Aug. 7, 1934.....	1 sp.	L. W. and R. T. Everly.
GUERNSEY COUNTY, OHIO.		
Madison Twp., (?).....	1 sp.	T. L. Guyton.
HAMILTON COUNTY, OHIO.		
Cincinnati, Ohio, 7-12-'5.....	1 sp.	(?).
Cincinnati, Ohio, 7-11-13.....	1 sp.	(?).
Cincinnati, Ohio, (?).....	2 sp.	(?).
HOCKING COUNTY, OHIO.		
Salt Creek Twp., Sec. 24, June 23, 1933.....	2 sp.	L. W. and R. T. Everly.
Salt Creek Twp., Sec. 24, Aug. 5, 1934.....	9 sp.	L. W. and R. T. Everly.
Falls Twp., Sec. 14, Aug. 5, 1934.....	7 sp.	L. W. and R. T. Everly.
HOLMES COUNTY, OHIO.		
Prairie Twp., Sec. 9, July 31, 1933.....	1 sp.	R. T. Everly.
Prairie Twp., Sec. 9, Aug. 2, 1933.....	1 sp.	R. T. Everly.
Prairie Twp., Sec. 9, Aug. 3, 1933.....	4 sp.	R. T. Everly.
JACKSON COUNTY, OHIO.		
Lake Alma, April 3, 1932.....	2 sp.	L. W. and R. T. Everly.
MEIGS COUNTY, OHIO.		
Syracuse, Ohio, 8-16-33.....	1 sp.	W. C. Stehr.
PUTNAM COUNTY, OHIO.		
Perry Twp., Sec. 21, May 21, 1934.....	4 sp.	L. W. and R. T. Everly.

On the evening of May 25, 1933, returning from a collecting trip along the Maumee River just after dark, while driving along a by-road surfaced with very fine gravel, in Lucas County (Adams Township, Section 23), several large beetles were observed in the light from the headlamps of the automobile, crawling upon the road. Upon stopping these were found to be *Calosoma calidum* Fab. and *Scarites substriatus* Hald. While these specimens were being secured, another large, robust, light brown colored beetle, later identified as *Geopinus incrasatus* (Dej.), began coming to the light in large numbers. Unfortunately the collecting jars being used were shell vials, one inch by six inches, and as these insects are rather large, the remaining vials were soon filled, some 37 specimens being taken. Upon the returning the next evening, no specimens were secured, but the night of June 3, 1933, 10 more were taken, and on June 8, 1933, 8 more were secured at the same location. During the same year 7 more individuals were collected at lights in East Toledo, Ohio, from June 5, 1933, to June 30, 1933. Of a total of 63 specimens collected in 1933 and 1934, all but one from Lake County, were taken at lights.

Dr. W. C. Stehr has taken one at Athens, Ohio, on October 29, 1931, at lights.

In addition to the last mentioned specimen, there are in the Dury collection six specimens bearing a Cincinnati, Ohio, label. Two specimens are in the collection of the Ohio State Archaeological Museum at Columbus, Ohio, one is from Cincinnati, collected by Miss Annette F. Braun on September 29, 1908, and the other is from Geauga County, taken by Mr. M. E. Crago, and three specimens in the University collection at the same location, one collected from Columbus, Ohio, on May 25, 1906, by Dr. James S. Hine, and two specimens from Geneva, Ohio, Ashtabula County, taken in June, 1909, by Mr. R. J. Sim. In the collection of the Department of Zoology and Entomology of the Ohio State University, there is one other specimen from Ashtabula County, taken by Mr. Sim, at Ashtabula, Ohio, on August 27, 1911. The records of the Ohio Biological Survey show this species as having been taken by Mr. Sim in Erie County, at Cedar Point, on July 1, 1912; there was no indication of the number of specimens.

The following summarizes the known distribution of *G. incrassatus* in Ohio:

ATHENS COUNTY, OHIO.		
Athens, Ohio, 10-29-1931.....	1 sp.	W. C. Stehr.
ASHTABULA COUNTY, OHIO.		
Geneva, Ohio, 6-09.....	2 sp.	Robt. J. Sim.
Ashtabula, Ohio, Aug. 27, 1911.....	1 sp.	R. J. Sim.
ERIE COUNTY, OHIO.		
Cedar Point, Ohio, July 1, 1912.....	(?)	Sim (O. B. S. record).
FRANKLIN COUNTY, OHIO.		
Columbus, Ohio, V-25-06.....	1 sp.	Jas. S. Hine.
GEAUGA COUNTY, OHIO.		
(?), 1934 (?).....	1 sp.	M. E. Crago.
HAMILTON COUNTY, OHIO.		
Cincinnati, Ohio, Sept. 29, 1908.....	1 sp.	Annette F. Braun.
Cincinnati, Ohio, (?).....	6 sp.	(?).
LAKE COUNTY, OHIO.		
Perry Twp., N. E. on beach, June 17, 1934....	1 sp.	L. W. Everly.
LUCAS COUNTY, OHIO.		
Adams Twp., Sec. 23, May 25, 1933.....	37 sp.	L. W. and R. T. Everly.
Adams Twp., Sec. 23, June 3, 1933.....	10 sp.	L. W. and R. T. Everly.
Adams Twp., Sec. 23, June 8, 1933.....	8 sp.	L. W. and R. T. Everly.
East Toledo, Ohio, June 5, 1933.....	2 sp.	L. W. and R. T. Everly.
East Toledo, Ohio, June 6, 1933.....	3 sp.	L. W. and R. T. Everly.
East Toledo, Ohio, June 7, 1933.....	1 sp.	L. W. and R. T. Everly.
East Toledo, Ohio, June 30, 1933.....	1 sp.	L. W. and R. T. Everly.
PUTNAM COUNTY, OHIO.		
Ottawa, Ohio, May 19, 1934.....	1 sp.	R. T. Everly.
Ottawa, Ohio, June 1, 1934.....	1 sp.	R. T. Everly.

For invaluable service rendered through making available other collections and records of Ohio Carabidae, thus enlarging our knowledge of the distribution of these and of other species, which records in Ohio it is hoped to assemble and present at a later date, acknowledgment is hereby made to the following: Mr. Ralph Dury, Director of the Cincinnati Museum of Natural History; Mr. J. N. Knull, Curator of Insect Collections of the Department of Zoology and Entomology at the Ohio State University; Mr. Harold L. Madison, Director of the Cleveland Museum of Natural History; Dr. August E. Miller, of Zanesville, Ohio; Professor Herbert Osborn, Director of the Ohio Biological Survey; Mr. John C. Pallister, formerly Curator of Insects at the Cleveland Museum of Natural History; Mr. Paul E. Schaefer, of the Department of Zoology and Entomology, Ohio State University; Dr. W. C. Stehr, of the Department of Biology, Ohio University, Athens, Ohio; and Mr. E. S. Thomas, Curator of Natural History, Ohio State Archaeological and Historical Museum, Columbus, Ohio.
