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About the Institute

The Hunt Institute for Botanical Documentation, a research division of Carnegie Mellon University, specializes in the history of botany and all aspects of plant science and serves the international scientific community through research and documentation. To this end, the Institute acquires and maintains authoritative collections of books, plant images, manuscripts, portraits and data files, and provides publications and other modes of information service. The Institute meets the reference needs of botanists, biologists, historians, conservationists, librarians, bibliographers and the public at large, especially those concerned with any aspect of the North American flora.

Hunt Institute was dedicated in 1961 as the Rachel McMasters Miller Hunt Botanical Library, an international center for bibliographical research and service in the interests of botany and horticulture, as well as a center for the study of all aspects of the history of the plant sciences. By 1971 the Library's activities had so diversified that the name was changed to Hunt Institute for Botanical Documentation. Growth in collections and research projects led to the establishment of four programmatic departments: Archives, Art, Bibliography and the Library.

BALDUF, W. V.

UNIVERSITY OF ILLINOIS
DEPARTMENT OF ENTOMOLOGY
ENTOMOLOGY BUILDING
URBANA

October 27, 1944

Prof. John W. Fogg, Jr.
Department of Botany
University of Pennsylvania
Philadelphia 4, Pennsylvania

Dear Professor Fogg:

I am engaged in a study of the distribution and dissemination of the Coreid bug, Gatorhinta mendica Stal. in North America. Because it appears to feed exclusively on the wild four-o'clock, Mirabilis (Allionia, Oxybenthus) nyctaginea Michx., a knowledge of the occurrence of this plant will throw light on my insect problem.

I have already received much help from the botanists of many states, and would like to enlist your aid to the extent that you may care to share the records you may possess on the geography and habitat of the Mirabilis as it occurs in Pennsylvania.

The data accumulated thus far indicate the plant is best established in the northern states of the Mississippi drainage basin, fades out in all directions from this area, excepting eastward, where, however, it seems to decline gradually toward the Atlantic coast. Moreover, it seems not to have invaded the states east of Tennessee and Louisiana and southeast of Indiana.

Dr. T. L. Guyton, of the State Department of Agriculture, Harrisburg, informed me he and an associate discovered the plant, and the bug, at Lickdale, Pennsylvania. This is the only record I have from Pennsylvania. Yet, because the species was known from adjacent counties in Ohio for some years, I feel sure it must be present in many places in Pennsylvania, also. Whatever data you may wish to send me will, therefore, have more than ordinary value in my study and will be sincerely appreciated.

Very truly yours,

W. V. Balduf

W. V. Balduf
Assoc. Prof. of Entomology

WVB:md

from Fogg

November 9, 1944.

Dr. W. V. Balduf,
Department of Entomology,
Entomology Building,
Urbana, Illinois.

Dear Dr. Balduf:

I have examined our records of the occurrence of Oxybaphus nyctagineus in Pennsylvania and am writing now to say that we know of specimens from thirty-two localities representing the seventeen following counties:

Lackawana	Berks	Lancaster
Wyoming	Bucks	Lebanon
Luzerne	Montgomery	Erie
Schuylkill	Philadelphia	Mercer
Northampton	Delaware	Allegheny
Lehigh	Chester	

You will observe that this arrangement of counties is a geographical one from north to south and east to west across the State.

An interesting fact which emerges from this distribution is that whereas the species is fairly frequent in the eastern counties, it is known from only three of the western ones. This is no doubt partly the result of the greater collecting which has been done in the eastern portion of the State, but I question whether this can be the complete answer. I would suppose, for instance, that if the plant occurred in Dauphin, Cumberland or Perry Counties, my friend E. M. Gress, formerly State Botanist, who has pretty well scoured that area, would have found it. Another interesting fact is that the plant seems to have followed the river courses, particularly the Susquehanna and the Schuylkill. In other instances its occurrence is unquestionably that of a weed in waste places or filled in ground.

If you desire further information concerning the exact localities within these counties, I can have these data copied for you from our record sheet. I may say that our records not only include the specimens in our herbarium but that we have also incorporated the collections at the Philadelphia Academy of Natural Sciences, the State Museum at Harrisburg and the Carnegie Museum in Pittsburgh, so that I

Dr. W. V. Balduf. #2.

feel that our information concerning the distribution of species within this State is fairly complete, so far as existing records are concerned. Dr. Gayton's collection from Lebanon County is therefore included in the above list of known localities.

I may add that this plant is also known from a number of localities in New Jersey and that I have also seen it in Maryland, Delaware and Virginia, although only at scattered stations.

Trusting that this information will be of value to you, I am

Sincerely yours,

John M. Fogg, Jr.,
Professor of Botany.

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November 28, 1944

Dr. John M. Fogg, Jr.
Professor of Botany
University of Pennsylvania
Philadelphia, Pennsylvania

Dear Doctor Fogg:

I am grateful to you for the records of Oxybaphus nyctagineus for Pennsylvania; they are indispensable in the study I have in progress.

Your enlightening comments on the distributional picture in the east as compared with the western part of the state are particularly stimulating, and although I have since developed a theory that seems to apply, I should like to reflect on it further.

On the whole, it has seemed adequate in a study involving so large an area as North America to state records of occurrence in terms of counties, but since Pennsylvania may present a problem of rather unusual interest, it seems desirable to accept your offer to have the more exact data copied for me.

I would also like very much to receive such records as you may have for Virginia, Maryland, and Delaware, if you care to share them. My information for these states is meagre to date; it is, of course, possible that nyctagineus is rare in these states. I have been unable to obtain any information yet for West Virginia.

Sincerely yours,



W. V. Balduf
Assoc. Prof. of Entomology

WVB:bd

December 8, 1944.

Dr. W. V. Balduf,
Department of Entomology,
University of Illinois,
Urbana, Illinois.

Dear Dr. Balduf:

In response to your request I am enclosing a detailed list of the records of Oxybaphus nyctagineus in Pennsylvania. Thinking that you might at some time wish to cite these localities in a publication, I have added the names of the collector as well as the serial number or the date if no numbering system is employed. I have also appended a list of the records which we have from states other than Pennsylvania.

It must be confessed that our collections are particularly strong for Pennsylvania and you should bear in mind that the meagerness of records from adjoining or other states does not necessarily mean that the species does not occur more generally elsewhere.

Hoping that this information will be of value to you, I am

Sincerely yours, *John M. Fogg, Jr.*
Professor of Botany.

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February 27, 1945

Dr. John M. Fogg
Department of Botany
University of Pennsylvania
Philadelphia, Pennsylvania

Dear Doctor Fogg:

Among the Pennsylvania records of Oxybaphus nyctagineus which you kindly sent me there is one that reads, "Germantown. Wister Herb; January 18, 1859". Because of its date, this record is of unusual interest. For this reason and also because the time of collection is "January", I would be pleased if you will check on these data. I recognize that the bare heavy woody stalks are fairly conspicuous and possibly distinctive in winter but I should like to have your confirmation of the dates before I employ the record. To date it is the oldest known for this species from the East.

Thanking you for this further favor, I am

Sincerely yours,

W. V. Balduf

W. V. Balduf
Assoc. Prof. of Entomology

WVB:bd

March 19, 1945.

Dr. W. V. Balduf,
Department of Entomology,
University of Illinois,
Urbana, Illinois.

Dear Dr. Balduf:

I have finally been able to check the Oxybaphus specimen mentioned in your letter of February 27th. It happens that this sheet is in the Academy of Natural Sciences rather than our own herbarium, so that I have not been able to report upon it earlier.

Unlike many of the specimens which came to the Academy as part of the Wister Herbarium, this item bears a fairly definite statement, which reads as follows: "Brought from the West by R. Haines and escaped from his garden. Found on Walnut Lane, Germantown, Jun. 18, 1859." The month is written poorly in pencil and looks as much like Jan. as Jun., a circumstance which misled the assistant who some years ago transcribed this information to our record card.

It is also a matter of interest to note that this plant occurred as a definite garden escape rather than as an adventive of some other type. Since, as you say, this constitutes the earliest known record for the species in the East, it seems within the bounds of probability that this colony may have served as a nucleus of dispersal for other occurrences in this general vicinity. I should be glad to know whether this seems to you a reasonable hypothesis.

Sincerely yours,

John M. Fogg, Jr.,
Professor of Botany.

UNIVERSITY OF ILLINOIS
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March 29, 1945

Dr. John M. Fogg
Professor of Botany
University of Pennsylvania
Philadelphia, Pennsylvania

Dear Doctor Fogg:

In our exchange of correspondence to date concerning Mirabilis nyctaginea in Pennsylvania, you have raised two questions. I should like to offer my views on them at this time.

First, is it probable that the Haines Colony of the plant may have served as a nucleus of dispersal for other occurrences in the general vicinity of Germantown? My inquiries into agencies of dissemination have lead me to think that the local spread of nyctaginea is very slow so far as its natural means are concerned. The seeds lack flight mechanisms and are rather large and presumably heavy, hence fall more or less straight to the ground when they leave the involucre. Break winds blowing at the moment of fall might carry them a few feet beyond the base. At this rate it may spread one mile in about 1000 years at best. It is possible that resident birds may ingest them, and eliminate them without destroying their germinative powers, and therefore drop them some distance beyond their place of origin. But the seeds have never been recovered from the stomachs of birds, so far as my examination of the literature has gone.

Therefore, if the dispersal is local in character, it must have been accomplished through human agencies. Noting the extensive exchange of flowering plants in my own yard and vicinity, I can readily believe that Mr. Haines gave seeds of nyctaginea to friends and neighbors in Germantown, who, in turn, gave them to their friends and neighbors, and thereby distributed it widely. This is the more plausible because the plant was new and from the West. However, the rarity of its use as an ornamental today suggests the species is rather unsuited for this purpose and that its deliberate spread from garden to garden was probably limited, especially after a few years of probationary cultivation that may have proved it undesirable. If it was indeed spread in this way, should one not still find some evidence of this in the form of escapes around old gardens in the older parts of the city?

On the other hand, I admit it is possible also that it reached the several locations about Germantown in separate shipments of commodities by rail. I have no doubt whatever now that trains carrying its seeds in farm produce have been by far the principal long-distance distributors of nyctaginea. In Indiana, in most of Illinois, and in all the occurrences in Ohio of which I know, it grows along the embankments of railroads. Many records for other states, both in and out of the original center of distribution, show it was taken along trackways.

March 29, 1945

The other question pertains to the peculiar pattern of occurrence in Pennsylvania, - a few records for the western edge, none for the west central half, and many for the eastern part. The species was native to the plains states west of the Mississippi. Excess farm produce from that area was shipped eastward largely after 1860 and principally via the series of sectional railroads that joined that country and the east through Chicago and Buffalo. These roads have since been consolidated to form the New York Central. Previous to the establishment of this continuous roadway, considerable tonnage of produce reached Buffalo via the Great Lakes, but not much of it originated where nyctaginea was native.

It is especially significant that produce distributed from Cleveland, Erie and Buffalo was carried after 1860 by railroads operating in New York, not in Pennsylvania. Several specimens have been taken in the Mohawk Valley along the New York Central that runs into Albany, thence south in the Hudson Valley to New York City where it occurs also. Others have been found along the Lehigh Valley, which runs down into the upper valleys of the Susquehanna and Schuylkill Rivers in Pennsylvania. The Lehigh road joins the Reading road at several points; the latter traverses all the area south to Philadelphia in which nyctaginea has been collected. By checking the 31 localities of Eastern Pennsylvania in which nyctaginea is known to occur, all but one lies on some railroad, and the large majority on the Lehigh and the Reading.

The occurrences in western Pennsylvania probably also originated via railroads. East Girard is on the main New York Central and Wheatland is on the Pittsburgh-Erie division of the Pennsylvania line that joins the New York Central at Girard. The establishments at Pittsburgh could have come from seeds carried from Cleveland or Buffalo and also via the Columbus-Pittsburgh division of the Pennsylvania line. I have found it along the latter road in eastern Ohio.

If my theory of dispersal in Pennsylvania and elsewhere is sound, supporting evidence should occur along the railroads of many states. True, it migrated into adjacent grounds that afford suitable ecological conditions; this has been possible in the 85 years since the species was first introduced eastward. But the long-distance transportation was and probably still is being accomplished by railroad freight traffic.

I shall appreciate your criticisms of my explanation, particularly that pertaining to the second question.

Sincerely yours,

W. V. Balduf
Assoc. Prof. of Entomology

P.S. I would not be surprised to learn that it has been carried into west central Penna. also, but would expect it to be comparatively infrequent there.

WVB:bd