



Hunt Institute for Botanical Documentation
5th Floor, Hunt Library
Carnegie Mellon University
4909 Frew Street
Pittsburgh, PA 15213-3890
Telephone: 412-268-2434
Email: huntinst@andrew.cmu.edu
Web site: www.huntbotanical.org

The Hunt Institute is committed to making its collections accessible for research. We are pleased to offer this digitized item.

Usage guidelines

We have provided this low-resolution, digitized version for research purposes. To inquire about publishing any images from this item, please contact the Institute.

Statement on harmful and offensive content

The Hunt Institute Archives contains hundreds of thousands of pages of historical content, writing and images, created by thousands of individuals connected to the botanical sciences. Due to the wide range of time and social context in which these materials were created, some of the collections contain material that reflect outdated, biased, offensive and possibly violent views, opinions and actions. The Hunt Institute for Botanical Documentation does not endorse the views expressed in these materials, which are inconsistent with our dedication to creating an inclusive, accessible and anti-discriminatory research environment. Archival records are historical documents, and the Hunt Institute keeps such records unaltered to maintain their integrity and to foster accountability for the actions and views of the collections' creators.

Many of the historical collections in the Hunt Institute Archives contain personal correspondence, notes, recollections and opinions, which may contain language, ideas or stereotypes that are offensive or harmful to others. These collections are maintained as records of the individuals involved and do not reflect the views or values of the Hunt Institute for Botanical Documentation or those of Carnegie Mellon University.

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.

CLARK, Austin H.

UNIVERSITY OF PENNSYLVANIA

PHILADELPHIA

THE COLLEGE

Botanical Laboratory
38th St. and Woodland Ave.

August 1, 1940

Dr. Austin H. Clark,
U.S. National Museum,
Washington, D.C.

Dear Dr. Clark:

I am writing to inquire whether you could possibly favor me with a series of reprints of your articles on Butterflies, especially those of Virginia. It has been my privilege to see some of your papers in the hands of my colleague, Dr. L.L. Woodruff, and of my students, Mr. Carroll Wood and Mr. Elod C. Carr, and I would greatly appreciate having copies for my own files. Needless to say, I should be happy to purchase these and to send you, if you would care for them, a set of botanical papers.

For some years I have been mildly interested in Butterflies, but recently as a result of my intense interest in matters of plant distribution in Virginia, Pennsylvania and elsewhere, I have become increasingly aware of the striking correlation between plant ranges and those of many Lepidoptera. I have just come from Mt. Lake, Va., where I taught a course in Plant Taxonomy, and where my family and I did a good deal of collecting of Butterflies in many sections of Giles County. We saw and took many of your interesting faunis smythii and were in general intrigued by the interesting mixture of boreal and Alleghenian types to be found in these mountains. No small part in the reawakening of my interest in Butterflies was played by your friend Carroll Wood, who took my course in Taxonomy and who was never without his collecting net. You certainly have in him an intelligent and enthusiastic contributor.

I have been working on a Flora of Pennsylvania for several years and constantly visiting the mountainous areas of the state. I wish to devote considerable attention to collecting Butterflies and shall be glad to pass on to you anything of real interest which I may find. It is my hope that a fuller understanding of some of the anomalous cases of plant distribution may be accomplished by a further knowledge of the ranges of certain insect groups.

Yours very truly,

John M. Fogg, Jr.
Asst. Prof. of Botany

from Clark

SMITHSONIAN INSTITUTION
UNITED STATES NATIONAL MUSEUM
WASHINGTON, D. C.

August 14th, 1940.

Professor John M. Fogg, Jr.,
University of Pennsylvania,
Philadelphia, Pennsylvania:

Dear Professor Fogg:

It was a great pleasure to receive your letter of 1st August, which I found awaiting me on my return from a couple of weeks in southwestern Virginia.

Papers on butterflies, unfortunately, are in considerable demand, and my supply of separates is soon exhausted. I am sending a few herewith under separate cover, and I am asking the Museum to send you those that have been published in the "Proceedings."

Our young friend Carroll Wood was delighted with your course in taxonomic botany, and was most enthusiastic in regard to you personally. He had a wonderful time at Mountain Lake.

I was sorry not to be able to get to Mountain Lake this summer; I devoted all my attention to the extreme southwestern section of the State.

It is rather curious that the unusually interesting butterfly fauna of Virginia has never been investigated. In Virginia one finds typical Canadian types (as Polygonia faunus smythi), transition zone types (as Argynnis aphrodite, Polygonia progne, etc.), Alleghanian types (as Argynnis diana), Austral types (as Euptoieta claudia, Precis coenia, etc.), and even tropical types (as Dabaus megalippe, Phoebis eubule, Atrytone dukesi, etc.), these last of course only along the coast.

An interesting little butterfly recorded from Montgomery and Nansemond Counties is Atrytone arogos. This is a typical prairie species, and in Nebraska is found only in regions where typical prairie conditions still occur.

It may be either (1) that isolated stands of prairie grasses have persisted in Virginia from very early times, or (2) that the seeds of these grasses were brought into Virginia by the herds of buffalo that came in every year from further south.

One might expect the seeds of plants to be transported either in the alimentary canal or on the fur of migrating buffaloes — and buffaloes were common in the grassy valleys of Virginia in the early days.

I have never seen buffaloes mentioned as plant distributors, but nevertheless they may have been a minor factor as far north as New Jersey.

The butterflies of any region are divisible into the following categories:

1. Butterflies once of general distribution but now of restricted and often discontinuous range. These are species that are unable to adapt themselves to changes in their environment.
2. Butterflies that have originated in an area under the special conditions obtaining there, but have not spread beyond the area of origin. Such species are always exceedingly sensitive to any environmental changes.
3. Intrusive butterflies that have entered an area from some other region as a result of changing conditions. A good example is Colias eurytheme, a recent immigrant into Virginia from the south and southwest. Deforestation and the consequent drying of the land in summer favor this species over the eastern C. philodice, which is still much commoner in the wet southwestern counties though it has almost disappeared from the piedmont.
4. Visiting butterflies; these are divisible into two types:
 - a. Irregular visitors often able to maintain themselves for a few or several generations, but not permanently. These are represented in Virginia by the beaked butterfly (Libythea bachmanni) and the gold-banded skipper (Rhabdoides cellus), both from the southwest.
 - b. Regular summer visitors unable to survive the winter. There are many of these in Virginia.

5. Casual or accidental visitors.

6. Butterflies introduced by man. The one notorious example in Virginia is the cabbage white (Pieris rapae).

Deforestation, depriving the land of an adequate protection against the strong summer sunlight, results in the disappearance of northern types which require reasonably uniform humidity and their replacement by southern types able to withstand drying of the land. Such "weed" butterflies now predominate over the piedmont in Virginia and are common in the mountains. As a result of their influx the normal differences between the Lower and Upper Austral, and between the Upper Austral and Transition zones have to a considerable extent disappeared. They do not, however, invade the Canadian zone to any great extent.

Some butterflies are confined to a special food plant. All the so-called Aristolochia Papilioes (our P. philenor, the East Indian "Ornithopteras", etc.) feed on species of Aristolochia, or sometimes of closely related genera, as Asarum.

Similarly, our beaked butterfly (Libythea bachmanni) and Chlorippe celtis and C. clyton feed only on Celtis.

Other, indeed most, butterflies have preferred food plants but will feed on other plants if necessary. Thus the cabbage butterfly (Pieris rapae) feeds on the cabbage wherever it can find it; but it also feeds on various other native and introduced Brassicaceae (on the coast including Cakile), and on species of Tropaeolaceae and Capparidaceae.

Some butterflies have different preferred food plants in different regions. Thus Strymon melinus in Virginia feeds mainly on Lespedeza hirta, further north on hops, on the coastal plain on cultivated beans, in the South on cotton, and in the Southwest on cactus. It has been raised on a very great number of different plants, including pine. Pollen-feeding caterpillars naturally have a very large range of food plants.

The little carnivorous butterfly at Mountain Lake (Feniseca tarquinius) feeds on the woolly aphids on the beech and alder, sometimes on those on Smilax.

The caterpillars of the monarch feed readily on Lactuca, but the butterfly will not lay its eggs on any plants but certain milkweeds or dogbanes.

Many caterpillars in the earliest stages are restricted to a very small range of food plants, but after they are half grown become general feeders. Thus the caterpillars of Euphydryas phaeton feed on Chelone glabra (rarely on Gerardia), but after hibernation eat almost anything, particularly Lonicera or Plantago if they can get it. They always prefer Balmoney, but they come out of hibernation before that plant appears above the ground in spring.

In the far north butterflies that further south feed on Celtis shift to Salix. So do others that feed on Fabaceae or nettles.

One thing that seems curious to me is that a number of species feed both on species of Fabaceae and on oaks, apparently without preference. Perhaps the high tannin content is the explanation.

Many butterflies feed only on Violaceae, with tropical relatives on Passifloraceae, some on both Viola and Passiflora. In the far north they substitute Polygonum. In Virginia one feeds on both of these and also on Podophyllum.

Speaking of distribution, the common copper (Lycaena phlaeas hypophlaeas) is abundant in the mountain pastures in Virginia, and equally abundant among the sand dunes along the coast, but rare or absent elsewhere. This species is found in northern Greenland and in Grant Land, and in the oases of the Sahara.

I fear I have bored you tremendously with all this. As yet we know the distribution of our butterflies, geographical and ecological, only in the most sketchy fashion, and we know even less about the details of their relations to the plants. Anyone working anywhere in the East can make valuable contributions to our present information.

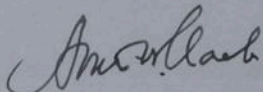
I shall be glad indeed to do anything I can to help you with butterflies. If you have any you wish identified, send them in.

Passing to plants, I have always been much interested in Lilium grayi in Virginia. I do not know of it at Mountain Lake, but I have seen it in West Virginia not far away. Dwarf individuals a foot or less high occur in the Lashorne (Picea rubra) forest near the summit of White Top; these bear only two or three flowers. Large individuals, six feet high or more, are very handsome.

Vicia caroliniana as you find it in the mountains, often abundantly, is a poor imitation of what this plant is like nearer the coast. Here it is much larger with apparently much larger and certainly much handsomer flowers. It is, however, rare in the coastal region.

With kind regards, I am

Sincerely yours,



Austin H. Clark,
Curator, Division of Echinoderms

Sept. 1, 1940

Dr. Austin H. Clark,
Smithsonian Institution,
Washington, D.C.

Dear Dr. Clark:

I really do not know how to begin to express my appreciation of your very great kindness and courtesy in writing me as you did and in sending me such a liberal series of your valued papers on Butterflies. I have profited immensely from the observations in your letter as well as from your published articles, several of which I am now reading for the second time.

My own botanical interests, as I told you, lie definitely in the field of distribution and geographical relationships. I can not tell you how stimulating it is to me to see how far you have gone in the same direction and to realize how frequently your interpretations fit closely in with mine. I permit myself to hope that we may find an occasion to sit down together and discuss these matters in a leisurely manner. Perhaps you are planning to attend the scientific meetings held in connection with our Bicentennial Celebration here the week of Sept. 16. If not, I shall certainly hope to see you in Philadelphia during the Christmas meetings of the A.S.A.S.

I was vastly disappointed to learn from my entomological friends at the Philadelphia Academy of Natural Sciences that very little has been published on the Butterfly fauna of Pennsylvania. Would that we had a Checklist comparable to yours for Virginia. Incidentally, although you did not forward me a copy of that list (I suppose it is one of those most in demand) Dr. Woodruff gave me a duplicate which you had sent him. My wife and I used it safely when at Mt. Lake. But to return to Pennsylvania; Cadbury at the Academy assures me I can be of real service by collecting throughout the state. I am doing, and shall for some years continue to be doing, considerable field-work in Pennsylvania. While Butterflies must be a side-line with me on these trips, my wife can devote herself to them wholeheartedly. Moreover, we have two daughters,

aged 6 and 7, who have really developed considerable skill in the use of the net. They can recognize several genera on the wing and often amaze us by the success of their "wild swings", as they call them. On the whole, I am genuinely thrilled at the prospect of being able to add something to the knowledge of butterfly distribution within the state and am particularly eager to see whether I can apply your distributional concepts to our own set of conditions. I am leaving in a day or two for a weeks collecting in the southwestern corner of the state. This is an area in which many mid-western and Mississippi valley species of plants occur and I am curious to see whether any of the butterflies there fit into the same pattern.

We are, of course, greatly handicapped by our ignorance, but that does not prevent us from collecting everything we see. Cadbury has offered his help and we have access to the reference collections at the Academy, which contain Skinner's material. It may be that at some future time we shall have to call upon you for help, but I shall certainly try to refrain from bothering you needlessly.

I was greatly struck by the observation in your letter to the effect that deforestation results in the disappearance of many northern types. This is equally true of plants, and I have devoted much attention to the attempt to reconstruct the Canadian zone in Pennsylvania. I should certainly like to show you some of the range maps which I have worked out.

Your reference to Lilium Grayi struck a responsive note in me. I have been much puzzled by the representation of that plant in Virginia and have even begun to wonder if we have not more than one thing passing under that name. If anything comes of my researches, I shall let you know.

Recently I forwarded to you those of my botanical papers which are concerned with geographical considerations. I hope you may find them of some slight interest. At any rate, they will serve to indicate the desire on my part to repay, in however small measure, the debt in which you have placed me.

Sincerely yours,

John M. Fogg, Jr.
Asst. Prof. of Botany

SMITHSONIAN INSTITUTION
UNITED STATES NATIONAL MUSEUM
WASHINGTON, D. C.

September 10th, 1940.

Professor John M. Fogg, Jr.,
University of Pennsylvania,
Philadelphia, Pennsylvania:

Dear Professor Fogg:

Many thanks indeed for the papers you were so very kind as to send me, and which I have read with much interest. Your memoir on the flora of the Elizabeth Islands especially I have studied with much diligence. Papers of this sort, giving a complete picture of conditions at the time, are very important in serving as a basis for the detection of later alterations.

I have never done anything in botany, further than aggravating my botanical friends. I located a small group of Cyripedium arietinum at Essex, Massachusetts, once and a few years ago near Cape Henry found a hillside in the pine woods thickly sprinkled with some species of Mamillaria. Fernald was much disturbed about this, and to make matters worse I have not been able to locate the pin-cushions since so that I could send him some. They were, I imagine, escapes from a garden.

Lilium grayi seems to be one of those distressingly variable things like L. superbum. Last summer I found some of the latter about seven feet high with a great number of flowers in Burkes Garden in Tazewell County. I have also found it somewhat over seven feet high (by measurement) in southern Maryland. But in dry fields (which were boggy in spring) I have seen it scarcely more than a foot high, with only two or three flowers.

Many butterflies have varieties comparable to those of plants, that is, they vary sometimes regularly but usually by jumps between two extremes. One or other of the varieties will be dominant in any one locality, but all the others may usually be found if one searches long enough.

These varieties simulate local races or subspecies. True subspecies are not very common in butterflies except in those that range over large island groups, or are confined to strictly localized situations.

In one Virginia butterfly we find the far northern form in early spring, the usual form in summer, the southern form in late summer, and the northwestern mountain form in late autumn. Such ethical irresponsibility is very confusing until you become aware of it. Zoologists as a rule seem unable to comprehend it, but botanists appear able to understand it easily enough.

In those larger sea-animals with a plant-like habit of growth you find variations quite comparable to those of such plants as our little friend Aster cordifolia. The natural result is, dozens of phony species in the literature. One of them has received a new name about every other year since it was first described.

Fernald's pet technique of running varieties under the same headings as species seems to me to be a bit misleading. It is more logical to subordinate subspecies and varieties under the species heading. At least, it makes a paper much easier to follow.

By the way, I have not seen Fernald since before I went to college. When I was in high school I used to see him more or less frequently, but all the time I was in college I never saw him, and I have not set eyes on him since, although we exchange frequent letters.

It is quite true, as Cadbury says, that little has been published on the butterflies of Pennsylvania — surprisingly little. There is a fine opportunity for excellent work here. Forbes list of the butterflies of New York and Comstock's recent excellent account of those of New Jersey form excellent points of departure.

The distribution of the butterflies of Pennsylvania (1) in spring, (2) in summer, and (3) in autumn should be most interesting. Many local butterflies are able to overwinter only in certain restricted regions. The next brood has a much more extended range, and the range of the third brood (if there is a third brood) is still more extended. In summer and autumn butterflies appear from the south as summer visitors that are killed out at the end of the season. There is quite a list of these.

In southwestern Pennsylvania, western Maryland, and northeastern West Virginia there are various species more or less characteristic of the Mississippi valley region that do not extend further toward the east.

Two of the butterflies of this area of which I am sure Cadbury would like to secure specimens are Zegris olympia (which passes into the form rosa, prevalent in the region from Nebraska to Texas, late in the season), found on more or less exposed ridges with Arabis lyrata in March, April, and early May, and Glaucopsyche lygdamus, found about its food plant, Vicia caroliniana, in late March and April. Both should be common. They are very common in Hampshire County, West Virginia, and just ooze over the border into Frederick County, Virginia.

The native white, Pieris virginiensis, occurs in damp rich wooded valleys in early spring, probably more or less throughout Pennsylvania. But reported stations for it are very few. It is rare in collections. This is also reasonably common in Hampshire County, West Virginia, and I once took one a couple of hundred feet east of the West Virginia line in Frederick County, Virginia.

Then there is the little Arctic skipper Pyrgus centaureae, flying in early spring about which we know very little. We know nothing about its early stages beyond the fact that the larvae feed on Malva. It specializes on the flowers of Potentilla canadensis growing on hillsides in clearings or along the borders of woods. It would be highly desirable to work out the local distribution of this supposedly rare little creature. It is very common in West Virginia and in the mountains of Virginia. Most specimens in collections are from the high altitudes of Colorado, from Scandinavia, or from western Mongolia.

I fear that I will not be able to get to Philadelphia in connection with your Bicentennial Celebration, nor do I expect to attend the A.A.A.S. meeting. I am kept so busy that I find it difficult to get away. I did succeed in getting away for a two weeks' visit to Abingdon, Virginia, this summer, but this, I am afraid, will have to suffice for the year.

I am glad that Professor Woodruff was able to give you a copy of the preliminary list of Virginia butterflies, as I have none left. When it came out I sent him some extra ones. My "Butterflies of the District of Columbia and Vicinity," in which all the local species are figured, was exhausted long ago.

I shall be glad to do anything I can to help you with butterflies, and I know that Cadbury will. There is a really excellent field open here. And you should be able to stimulate various people in strategic parts of the State to send in material. There should be a good representation of species from western Pennsylvania in the Carnegie Museum. Here you will find Dr. Kahl exceedingly helpful.

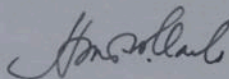
By the way, if you could turn up Enodia creola in Pennsylvania it would give all entomologists a terrific jolt. It is supposed to be one of the very scarcest of our butterflies, but it is actually common enough locally. I caught several last week.

It is always found with Arundinaria tecta, in the stands of which, being nocturnal, it hides during the day. You spot a stand of this plant, in wet pine woods or elsewhere, stir it up, and out pops the butterfly. It flies for a dozen feet or so and then perches on a leaf and looks at you. In Pennsylvania it probably flies in July. There are two broods in Virginia. Mrs. Clark and I have taken several times as many specimens as all other collectors together.

As it begins to get dark the butterfly appears from hiding. But it is then hopeless to try to catch it, as it is exceedingly quick on the wing. You can also see it in early morning, but it disappears at about nine for the day.

With kind regards, I am

Sincerely yours,



Austin H. Clark,
Curator, Division of Echinoderms

AUSTIN H. CLARK
1818 WYOMING AVENUE, N. W.
WASHINGTON, D. C.

October 21st, 1940.

Professor John M. Fogg, Jr.,
University of Pennsylvania,
Philadelphia, Pennsylvania:

Dear Professor Fogg:

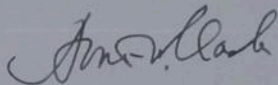
A young friend of mine, Warren Herbert Wagner, Jr., has just entered the University of Pennsylvania. His special interest is in butterflies, of which he has an unusually detailed knowledge.

He has an uncanny way of ferreting out and securing the rarer and more elusive species, and I am indebted to him for many interesting and unusual records from Virginia.

He is greatly interested in botany as a background for his entomological studies, and has a good knowledge of plants, especially of ferns.

In your work upon the flora and upon the butterflies of Pennsylvania I imagine that you would find in him a most valuable collaborator.

Very sincerely yours,



October 23, 1940.

Dr. Austin H. Clark,
1818 Wyoming Avenue, N.W.,
Washington, D. C.

Dear Mr. Clark:

Thank you for your letter of October 21. I have already met Mr. Wagner and have formed a high opinion of him. We have had several conversations concerning plants and butterflies, and I take him to be a young man of unusual ability and enthusiasm.

Next year we shall be carrying out a rather intensive program of field work in the wilder sections of Pennsylvania. I have told Mr. Wagner about this project and he has expressed his desire to accompany us as often as possible on our field trips. I hope that in this way he will be able to add materially to our knowledge of the butterfly distribution of the state and, perhaps, uncover some interesting cases of distribution which may through light upon our own botanical problems.

It was good to hear from you, and I hope that you will make it a point to stop at the University and see us whenever you are in Philadelphia.

Sincerely yours,

John M. Fogg, Jr.,
Asst. Prof. of Botany.

jmf/mj