

Maine Entomological Society Newsletter 1999



A FORUM FOR STUDENTS, PROFESSIONALS, & AMATEURS
IN THE PINE TREE STATE

Number 1, March 1999

From the President

I hope that this issue finds you all healthy and happy, and ready for a new season afoot in the field. Time to dust off and assemble the collecting gear, camera or art materials, and field books for the emerging hexapods! As you can see from this issue's feature article, you may already be missing some of our more unique winter-active species.

Our thanks go to all of you who responded to our membership directory update request. I hope you can set aside some time to attend our meetings and collecting field trips in 1999. In the months ahead, we will be keeping you updated on the Maine Dragonfly and Damselfly Survey (MDDS), and we encourage you to collect specimens for the Maine Carabid Beetle List (see our note in this newsletter). If you have survey interests, please keep us alerted to your needs. To stimulate the adrenalin flow, we are exploring a friendly collecting challenge with our counterparts in Vermont. Any suggestions? How about seeing who can collect the most species records (with specimens) from a particular niche? Rhubarb blossoms have been suggested!

We are always in need of input for our newsletters. New and unusual records, short articles, special requests, notes about members or experiences, interesting web sites, book or movie reviews, anything which touches the entomological is of interest.

In addition to our excellent guest

speaker on April 2nd, we will set aside a few minutes to discuss items for which we need your input, such as the need for MES by-laws and how to structure them. We also need suggestions for outreach to bring the fascinating world of insects to more of those who see insects as pests to be squashed. We don't need to resolve all issues on April 2nd, but we hope to get the ball rolling. I'll see you in Waterville.

-Dick Dearborn

Just a Reminder

The Maine Dragonfly and Damselfly Survey will kick off this summer. If you are interested in participating, please contact Mark McCollough of the Maine Department of Inland Fisheries and Wildlife.



(207) 941-4475

or

mark.mccollough@state.me.us

Spring Meeting at Colby College



Our spring meeting will be held on April 2 at 7pm in Mudd Room 218 at Colby College in Waterville. F. Russell Cole will speak about "The Impacts of Exotic Organisms on the Endemic Fauna and Flora of Hawaii".

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Our Hiemal (Winter) Insect Fauna

by Dick Dearborn



Winter signifies a low point in the diversity of active insect species but does it signify total inactivity? Definitely not! While most species are either hibernating or overwintering as eggs or pupae, others move about beneath snow (subnivean) or over the surface of the snow when conditions permit. Most of this activity takes place on sunny days as the temperatures hover around freezing, but some species move about when the temperatures dip below 0° F.

Winter activity phenomena have drawn the attention of naturalists for more than two hundred years. European workers described several winter-active species in the 1700s, and as early as 1847, Asa Fitch described eight winter-active species in four insect orders from eastern New York State. While both subnivean and surface activity are of interest, I will focus primarily on those species which you might find wandering over the snow from November through March. I divide these species into two groups; **Group 1:** those which occasionally appear, and **Group 2:** those which are regular winter species. I should also point out that quite a few spiders are winter-active, but I will leave that subject for a future newsletter.

Species in **Group 1** do not appear on a regular basis, but tend to appear only in mild winters and on sunny days when temperatures approach or exceed the freezing point for extended periods and snows have begun to "rot" (melt back) exposing some soil and vegetation. Some of the more common species include:

Coleoptera: Adults of the pesky Asian lady beetle, *Harmonia axyridis*,

are seen commonly on snow around infested homes, and adults of the dusky firefly beetle, *Ellychnia corrusca*, are found on tree trunks. **Diptera:** Cluster flies, *Pollenia rudis*, fraternize with our lady beetle "friends"! The winter "Musketoe," *Anopheles punctipennis* (*Culex hyemalis* of Fitch), hibernates as an adult but is often seen and felt (it bites!) in single numbers during January thaws or similar periods. **Lepidoptera (larvae):** A number of cutworms (Noctuidae) will mass over the snow when populations are high but *Xestia bicarnea* does this on a fairly regular basis in Maine. The banded woolly bear, *Pyrrharctia isabella*, is common. **Lepidoptera (adults):** A number of nymphalids may occasionally be seen. The mourning cloak, *Nymphalis antiopa*, is perhaps the most common although the Compton tortoiseshell, *N. vau (j)-album*, and on rare occasions one or more of the anglewings, *Polygonia* spp. will fly as well. A number of overwintering cutworm moths fly during warmer periods and often get in sap buckets in the spring. You may see the tiny but interesting wingless females of either the Bruce spanworm, *Operophtera bruceata*, or the fall cankerworm, *Alsophila pomataria* (both geometrids), wandering over tree bark as late as December or early January. Very early in the spring (late March on), the adults of the butterfly-like geometrid, the infant, *Archicaris infans*, fly over melting snows. **Hymenoptera:** Most of this group are absent except for the occasional confused paper wasp, *Polistes fuscata*, which prematurely leaves its winter quarters.

Group 2 contains winter insects which have adapted a portion of their life cycle to withstand harsh winter conditions. Some come out any time conditions are ideal, but many others limit their activity to a particular time of year. It is this group that seems to have fascinated so many naturalists.

Adults of species which are truly winter active tend to be rather small (<10mm), dark in color, and are either wingless or fly sparingly (a wise move to conserve energy during cold periods with little food).

Coleoptera: Larvae suspected of being those of the introduced cantharid, *Cantharis rufa*, are locally abundant on the snow from January through March. Cantharid larvae have been called "Schneewurmen" (snow-worms) in Europe because of this habit. Adults of many staphylinid beetles are active throughout the winter months but most of this activity is subnivean, and they are not often seen. However, species in the subfamily Omaliinae may be quite active in late winter on melting snow pack especially near flowing water. Winter records for Maine are rare, but this group is commonly encountered in the western states. Several entomologists consider this the most numerous (in terms of species) winter-active group.

Collembola: Two species of springtails may be especially abundant in winter months and are referred to as snowfleas. The true snowflea (of Fitch) is *Hypogastrura nivicola*. This sooty or graphite-gray species can mass over snow, snow-melt or bare ground at any time throughout the winter. Another species, *H. armata*, has been called the snow-melt springtail or snowflea. This rusty or blood-meal red species appears most often later in the season on snow-melt pools.

Diptera: While a number of chironomid midges are winter-active, one in particular, *Diamesa nivorunda*, the "Snow-born Midge", was recognized as early as 1847 (Fitch). Of the winter active species, the crane flies stand out. The fragile looking winter crane flies (Trichoceridae) are represented by relatively few species, six of which (*Trichocera* spp.) have been recorded from Maine. Even more interesting are the wingless

snow-flies or spider-flies of the genus *Chionea*. This holarctic group contains less than ten species which are active throughout the winter. They resemble spiders at first sight and may be seen wandering over the snow and even mating. The European *C. araneoides* was described in 1816 by Dalman and so named because of its spider-like appearance. One species, *C. valga*, is known from Maine, and a second, *C. scita*, likely occurs here.

Mecoptera: The wingless (or nearly so) snow scorpionflies (Boreidae) are an interesting group. Of the 15 or so species only two, *Boreus brumalis* and *B. nivoriundis*, occur in the east and both can be found in Maine. Both were described by Fitch in 1847. Our species are darker but similar in size to *Chionea* and, like *Chionea*, winter is their time of year. Unlike *Chionea*, the boreids are slightly more mobile and often seem to jump.

Plecoptera: The winter stoneflies represent primarily two families, Taeniopterygidae and Capniidae. At this point I am not certain how many truly winter species we have in Maine, but it could be more than a dozen. The two species described by Fitch occur here as well as several others. These slender and very active insects are seasonally critical in their emergence patterns and type of larval water source. These factors along with size can be used to roughly separate species. When the time is right, they literally "boil" out of the water through openings as small as pressure cracks in the ice. Snow around such places may become black with them as they disperse. Lower numbers can be found hundreds of feet from a breeding stream, brook, or pond.

References on winter insect fauna are rare few and scattered but make for fascinating reading. If you wish to research the taxonomy of a particular species or group of species you may have better luck. I have listed just a few of the more interesting references:

Aitchison, C.W. 1974-1984. A series of seven very detailed and informative articles on the subject for southern Manitoba Canada. The four on

insects are: Manitoba Ent (1974) 8:32-36 Sampling Techniques; Pedobiologia (1979) 19:113-120 Collembola; Pedobiologia (1979) 19:121-128 Coleoptera; Pedobiologia (1979) 19:176-182 Diptera and Hymenoptera. (The UMO Library has Pedobiologia!)

Chapman, J.A. 1954. Observations on snow insects in western Montana. Can. Ent. 86:357-363.

Danks, H.V. 1991. Winter habitats and ecological adaptations for winter survival. pp231-259 in R.E. Lee and D.L. Denlinger (Eds), Insects at low temperature. Chapman and Hall, N.Y. and London. 513 pp.

Fitch, Asa. 1847. Winter insects of eastern New York. Amer. Jour. Agr. and Sci. 5:274-284. A CLASSIC.

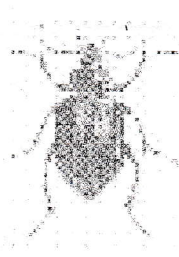
Remember to watch for insects in your winter travels. Besides date and place collected, it is also important to record time of day, temperature, weather conditions and whether or not they were found on snow. Specimens should be preserved in 70% isopropyl alcohol and sent to me to check for an ID. We'll keep a species count going just to see what we find!

Calling All Carabids

Bob Nelson and Dick Dearborn are looking for collection records and specimens of ground beetles

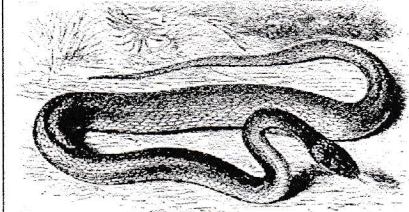
(Carabidae) from Maine for

the Maine Carabid Beetle List (MCBL). For more information on the project, contact Bob at (207) 872-3247 (e-mail: renelson@colby.edu) or Dick at (207) 287-2431 (e-mail: mo-dear@ctel.net).



GET A BACKBONE

The second edition of "Maine Amphibians and Reptiles", edited by Malcolm L. Hunter, Jr., Aram J.K. Calhoun, and Mark McCollough has just been released by Univeristy Press. Only 4,000 copies of this book will be printed, so act quickly. In addition to color photos, the new edition comes with a CD of toad and frog calls. It is available from ME Dept. of Inland Fisheries and Wildlife for \$19.95 and at booksellers around Maine.

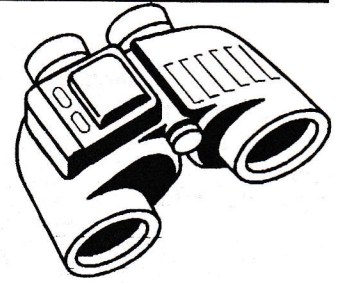


Upcoming Meetings

The 59th Annual Meeting of the Acadian Entomological Society will be held in either Corner Brook or Ste. John, Newfoundland sometime in August. The location and date have not yet been finalized. Anyone who is interested in attending can get more information at the Society's website at <http://aes.fsn.net> or by calling Lloyd H. Hollett at (709) 635-4545.

This year's Maine Biological and Medical Sciences Symposium (MBMSS), featuring topics on environmental health, is being hosted by The Jackson Laboratory in Bar Harbor from May 5 to 7. The Lucien Cuprak Student Paper cash award will be presented (deadline April 15th). For more information, visit the MBMSS website at www.mbmss.org or call Karen Kane at The Jackson Lab at (207) 288-6263. The Lab's website is www.jax.org/courses.

SIGHTINGS



More on *Blastodacna atra*

In the last newsletter, the apple pith moth (*Blastodacna atra*) was reported from Steuben, ME. The UMCE Pest Management Office (1-800-287-0279) reports that in 1991, an adult was captured from a light trap in Lebanon, ME, York County. By 1993, *B. atra* were found at the Maine Agricultural Experiment Station, Highmoor Farm in Monmouth, ME, Kennebec County. A 1993 APHIS survey discovered larvae and pupae from Oxford and Cumberland Counties. As part of this survey, fourteen pheromone blends were placed in wingtraps in various locations around the state. All specimens and trap bottoms were sent to Phil Kingsley of the Methods Development Center, Otis Air Force Base for pheromone development. Apparently this was not pursued by APHIS as the moth never attained major pest status. This past summer damage attributed to apple pith moth was observed in Fairfield, ME, Kennebec County, and its presence in Steuben was no more than a predict-

able range extension. The apple pith moth was first collected in the US in Connecticut by Dave Wagner in 1989. An apple pith moth factsheet by John Weaver and Alan Eaton, University of New Hampshire, is available on the web at <http://ceris.purdue.edu/napis/pests/p-m/facts.txt>

-Don Barry, Glen Koehler, Ron Mack, Tony Roberts

Insects on Chrysanthemums

I want to share some observations of insects found on chrysanthemums from October 10th to November 8th. Several hard frosts killed most of the flowers except a bed of orange chrysanthemums near my house. Several species of Lepidoptera including northern painted lady, blue orange Ctenucha moth (*C. virginica*), several other moth species, and a grey skipper with white dots visited the flowers as did baldfaced hornets, honeybees, thread waist *Polistes*, small greenish

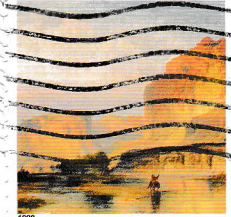
Halictus, and five to six species of bumblebees, one with an orange abdomen.

Flies included six species of syrphids including forty to fifty rat-tail maggot adults (drone flies) (*Eristalis tenax*), cluster fly (*Pollenia rudis*), big blue *Calliphora* (prob.) *vomitaria*, green bottle fly (*Lucilia sericata*), several species of large sarcophagids, and something resembling a species of anthomyid, *Phormia* sp. The most impressive sequence in this fall drama was the continued abundance of the rat-tail maggot adults until hard frost in November. It was interesting to see flesh flies such as *Calliphora* and *Lucilia* on flowers. On October 24th, a tail wagging warbler spent a few minutes on the flowers but only plucked the three species of moths!!

-Sam Ristich

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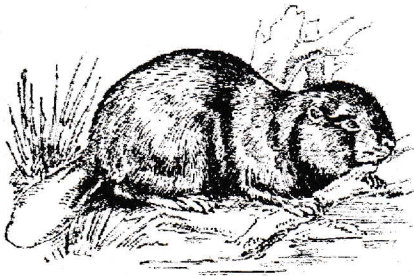
Thomas Moran (1837-1926) 32USA

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MAR 31 1999



BEAVER HUT CARABIDS



The ground beetle *Platypatrobus lacustris*, was formerly considered to be one of the rarest species. It was known from one male, collected on the north side of Lake Superior about 1880, and a female found in a light trap in northern Maine at Sinclair, about 1960. I got very excited when three more specimens came to my light trap in Elmore, VT in 1963. I contacted the discoverer of the beetle, Dr. Philip Darlington at MCZ in Cambridge, MA and he came up as fast as his jeep would carry him. We spent a whole day trying to discover the habitat of *Platypatrobus*. We spent much time tramping around the margins of some beaver ponds, looking in the dams and under bark of dead standing trees, but we failed to find the beetle. Henri Goulet, then a high school student in Quebec, solved the mystery the next year. He found that *Platypatrobus* actually lives in the beaver house, in spaces among the sticks and mud that make up the house. Since then, two other ground beetles, *Atranus pubescens* and *Pterostichus castor*, have been discovered within the same habitat.

Beaver houses seem like very restricted habitats. However, they are rich in potential prey. Beaver ponds are usually full of diving beetles and other aquatic insects, which pupate in the houses. Many other insects live there also. Two friends of mine even broke into a yellow jacket's nest in one house, which ended the collecting in a hurry! Mice and shrews also live there.

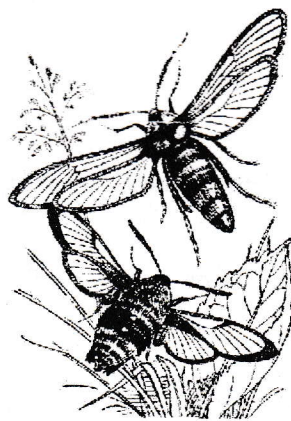
In nature preserves, functioning beaver houses are legally protected. However, now that beavers are com-

mon, dams and houses are often destroyed when they threaten roads and other human projects. A recently vacated house gives an unusual opportunity for collecting. I have also found that in rainy weather, the beetles may be up near the surface of the house and can be caught under superficial cover. Beaver houses are not easy to break into. They are mostly made of long, somewhat flexible poles which are interwoven. Beavers usually leave a thin place in the roof on the southwest side, where the afternoon sun can warm the house. I once fell through the roof at this point, and landed next to the beaver, who was not at all pleased! He exited through the underwater door, while I left as fast as possible through the hole in the roof. I forgot all about collecting for the rest of that day!

-VES President, Ross Bell

Editor's Note: *P. lacustris* and *A. pubescens* have been recorded from Maine, but records are sparse. *P. castor* has not yet been found in Maine. If you poke around in beaver houses, keep an eye out for the relatively tiny beaver-nest beetle, *Leptinullus validus*.

Sphex, Flies & No Videotape



Females of the large Sphexid moth, *Sphex pensylvanicus*, hunt independently for grasshoppers and bush katydids to stock their underground nurseries. They are fossorial wasps,

constructing burrows in which their future larvae devour the paralyzed prey the mother has provided. Known historically as the "Great Black Wasp of Pennsylvania," the big dark-winged huntress is truly impressive. At least one of my own specimens has a body length of about 29mm, or just over an inch long. Here is a short field note describing an unexpected August 14 meeting with one hard-working female at a pond alongside Route 111 in Arundel.

Near a straggling tangle of grapevines eight feet from the edge of the pond, a female *S. pensylvanicus* was preening in an open sandy site. She rested about one foot from an apparent nest entrance. The raised mound of sand (tumulus) with the entrance hole off-center in it looked like a miniature volcano. The wasp preened (cleaned her face, antennae, etc.) under a rosette of small leaves, and then proceeded directly to the nest entrance. She began excavating, going into the hole headfirst and then backing out with globs of sand which were clearly damp. She dropped each load of dirt one to three inches away from the entrance, but never much beyond the basic perimeter of the existing tumulus. The female made 15 trips in and out to excavate, without stopping.

This was tedious to watch: to remain crouched and still while she worked! After she had backed out a few times with a load of excavated material, it was evident that she carried out each load of damp sand tucked into her forelegs and her right middle leg. After dropping off this "armful" she then used her forelegs to brush the discarded sand backwards—much like a dog digging—sending a spray of sand out between her legs. How nice it would have been to videotape this action! After the 15th load, she quit on the spot to preen again, to clean her face and antennae. This lasted perhaps ten seconds.

She returned immediately to the entrance to resume work, and proceeded to back out with eleven more armfuls of excavated sand. While she did this, at least two small flies (Diptera) patrolled the immediate site. I assumed they were parasitic, and as they skated overhead without landing or entering the burrow, they could have been *Senotainia* flies. The activities of these flies, and their relationship with Maine's other species of *Sphex* (and other wasps) are described by Sam Ristich in two landmark documents: the October 1953 issue of the Canadian Entomologist and the Ohio Journal of Science, September 1956.

As the wasp worked, I belatedly noticed a large short-horned grasshopper (Family Acrididae) lying on its side at the edge of the tumulus, placed to her left, as she worked always facing the same direction. She stopped her work abruptly and ran around in loops and figure-eights beyond the perimeter of the mound, to perhaps a foot away. These could have been tactile or visual orientation runs. I remained crouched down only two feet away from her; she looked up at me once, and then ignored me.

She went to grab a grasshopper, which exceeded her in length, and

grabbed it by the head and dragged it up to the entrance hole. She then left it, went down the hole as if to check everything, reappeared, grasped the head of the grasshopper again and dragged it quickly down the hole. It disappeared in an instant.

-Monica Russo

Are You Privy to This?

If you want some interesting bathroom reading, check out "A Seventeenth Century Beetle Fauna from Colonial Boston" (Historical Archaeology 1998, 32(3): 38-48 by Allison Bain. She discusses the rich, diverse assemblage of preserved Coleoptera collected from a 17th and early 18th century Boston privy!

Migrating

Dr. Kathleen (Kathy) Murray has accepted the position of IPM Specialist with the Maine Department of Agriculture, Food and Rural Resources in Augusta. She left her position at the University of Maine and assumed her new responsibilities in January. In her new role, she will be encouraging and promoting the adoption of Insect Pest Management (IPM) practices with the goal of minimizing agriculture's reliance on pesticides.

Nancy Sferra has moved from her position as Southern Maine Preserves Manager for The Nature Conservancy to Director of Science and Stewardship. She will be overseeing the biological management and monitoring of the Conservancy's preserves in Maine.

The deadline for the summer issue of the Maine Entomological Society Newsletter is May 15, with a projected mailing date of June 1. Send your submittals to Nancy Sferra. You should have also received the latest version of our membership directory. If you did not receive your copy, contact Don Ouellette at 287-2431.



Web Sites

<http://www.state.me.us/doc/mfs/idmcoll/collcover.htm> - The Maine Forest Service insect collection database

<http://maine.maine.edu/~eaghill> - Humboldt Research Institute and Eagle Hill Field Seminars for 1999

<http://gnv.ifas.ufl.edu/~tjw/recbk.htm> - University of Florida's Book of Insect Records (kind of like a Guinness Book of World Records for insects)

www.enteract.com/~mswanson/antlionpit/welcome.html - All about antlions

<http://vega.ursus.maine.edu/menature/> - Maine Nature News, a weekly newsletter of nature events in Maine