

The Maine Entomologist

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

Volume 5, Number 3 August 2001



From the President

Time sure flies! It seems like only yesterday that we were planning for our field season yet now four of our five projected trips are completed! It has been a great season and I appreciate the support of those of you who have been able to participate in these events. Our hosts put a lot into preparing for them and I would also like to send my appreciation to them. We hope that those we haven't seen also had a profitable season and have seen and learned many things from our buggy friends.

In mid-June, we were fortunate to have two beetle taxonomists from Ottawa, Drs. Anne and Henry Howden, visit us to trap those little creatures that we missed. They set up traps at my place in Mt. Vernon and, as expected, came up with some new records for my list. They confirmed a new Maine cerambycid record from specimens collected last year by Kim Foss, attended our field session at Chewonki, and participated in a hastily planned supper and beetle collecting night at my place with Chuck Peters and Reggie Webster. Anne specializes in weevils and Henry in scarabs and cerambycids. I would like to thank them for joining us and sharing their expertise. I look forward to hearing more of their findings.

Our field season began on May 19th at Runaround Pond in Pownal where our host, Sam Ristich, focussed on the rich, aquatic fauna. Those present had the opportunity to see unusual insects such as a creeping water bug nymph *Pelocoris femoratus* (P.B.) and to review Sam's impressive display of literature. On June 15th, we were treated to a tour of the Chewonki Foundation's new facilities in Wiscasset. I would like to thank host Don Hudson for setting this up for us. Sam Ristich has prepared collecting highlights from the trip in this issue. Editors Laura Stone and Chuck Lubelczyk graciously set up our July 14th trip to the Wells Reserve where everyone had the chance to collect and to use the new student laboratory. Sue Smith highlights that trip in this issue. Our Jackman trip, hosted by Don Oullette, took us to a new area of the state. Bob Nelson and I added ground beetle records to our state list while we saw many small developing larval nests on aster that were those of the Harris Checkerspot butterfly.

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Make An Insect Cage

A Good Question

Dick Dearborn recently asked me a question in reference to comments made about the Cherry Gall Blue in the "The Butterflies of Canada" (1998) by Ross Layberry, Peter Hall and Donald Lafontaine. They state that this undescribed species has several "foodplant races" and that these may be proposed as subspecies when the species is formally described. They further go on to say the status of this "new species" remains uncertain and that it may prove to be a late season "foodplant race" of the Spring Azure.

The good question is: What is a "foodplant race?" Food-plant race and host-plant race are often misused terms. The best way to describe a host-plant race is by giving an example.

The host plant of the Apple Maggot Fly, *Rhagoletis pomonella*, is apple. The females lay their eggs on apples and the larvae feed on the flesh inside the apple. The site of mating is also on the fruit. The original host plant of this endemic species was hawthorn. Prior to the arrival of man and apples this was probably the only host. However, about 150 years ago, some individuals started to use apples as a host plant and eventually these apple-using populations became a major pest of apples throughout the apple growing areas in the Northeast.

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Butterfly Count Results



The North American Butterfly Association Fourth of July Butterfly Count in Hiram, Maine was coordinated by Gail Everett. On July 7, 2001, a total of 247 butterflies of 28 different species were seen. Below is a detailed list.

<u>Common Name</u>	<u>Latin Name</u>	<u># Seen</u>
Cabbage White	<i>Pieris rapae</i>	3
Clouded Sulphur	<i>Colias philodice</i>	1
American Copper	<i>Lycaena phlaeas</i>	4
Bog Copper	<i>Lycaena epixanthe</i>	44
Coral Hairstreak	<i>Satyrium titus</i>	3
Banded Hairstreak	<i>Satyrium calamus</i>	2
Striped Hairstreak	<i>Satyrium liparops</i>	2
"Summer" Spring Azure	<i>Celastrina ladon neglecta</i>	2
Spring Azure, spring form	<i>Celastrina ladon marginata</i>	1
Great Spangled Fritillary	<i>Speyeria cybele</i>	14
Atlantis Fritillary	<i>Speyeria atlantis</i>	10
Silver-bordered Fritillary	<i>Boloria selene</i>	1
Northern Crescent	<i>Phyciodes selenis</i>	16
Question Mark	<i>Polygonia interrogationis</i>	6
Mourning Cloak	<i>Nymphalis antiopa</i>	6
American Lady	<i>Vanessa virginiensis</i>	5
Red Admiral	<i>Vanessa atalanta</i>	1
White Admiral	<i>Limenitis arthemis arthemis</i>	2
Eyed Brown	<i>Satyroides eurydice</i>	2
Common Ringlet	<i>Coenonympha tullia</i>	20
Common Wood Nymph	<i>Cercyonis pegala</i>	1
Silver-spotted Skipper	<i>Epargyreus clarus</i>	2
Northern Cloudywing	<i>Thorybes pylades</i>	1
European Skipper	<i>Thymelicus lineola</i>	84
Peck's Skipper	<i>Polites peckius</i>	2
Tawny-edged Skipper	<i>Polites themistocles</i>	2
Crossline Skipper	<i>Polites origenes</i>	3
Long Dash	<i>Polites mystic</i>	1
Dun Skipper	<i>Euphyes vestris</i>	6



Two New Maine Moths

The task of inventorying the small moths of Steuben (Washington County) continues at a much reduced rate. Nonetheless, this June brought to light two extraordinary new records for Maine. Both are Old World species, one new to the State, the second, apparently new to North America.

The first is the oecophorid, *Agonopterix ciliella* (Stainton), an umbelliferous feeder known in England as the Large Carrot Flat-body. It is known in North America from two specimens taken in Nova Scotia in 1915 and 1943. Since the June specimen, despite its fresh appearance, is undoubtedly an overwinterer, the moth is likely to be at least spottily established in the Northeast.

The second is the tortricid, *Dichrorampha acuminatana* (Zeller), a Chrysanthemum root-feeder, which has not to my knowledge been recorded elsewhere in North America.

These moths join the growing list of exotics that continue to infiltrate America from both coasts and which are not only of potential economic and ecological concern but also present some basic biological puzzles. (Chief among these is the still unexplained fact that the traffic in such so-called adventives, or accidental introductions, is almost entirely a one-way affair. Very few North American endemics end up in Europe and Asia.)

I have, in past numbers, reported on range extensions into Maine of Lepidoptera from the south, north and west. These records add a further dimension to the picture of a fauna which is constantly undergoing modification. I hope they will encourage members to keep a close eye out for such alterations in whatever specialty they pursue.

-Tony Roberts

MES to Co-Host Acadian

Entomological Society Meeting in 2002

A tentative date has been set for a joint Acadian Entomological Society and Maine Entomological Society meeting. It is scheduled for July 21-23. Taking place in Machias, this AES/MES meeting will be the first of two joint conferences. The second such meeting will happen in 2003. This 2002 meeting will also function as one of the summer MES trips. Conference details are not final, but plan on many talks, downeast field trips, and a possible entomological photography and art exhibit! Any who interested in participating are urged to contact Dick Dearborn at (207) 293-2288.

A Good Question
Continued from Page 1

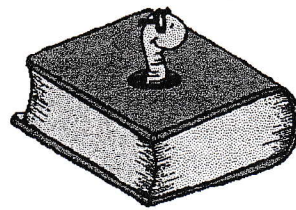
Currently, males and females from populations using apple prefer apples when given a choice between hawthorn and apple. Males and females from populations using hawthorn prefer hawthorn when given a choice between hawthorn and apple. Since the site of mating is the fruit, there is essentially behavioral isolation between these populations. This behavioral isolation has the effect of reducing gene flow between the hawthorn and apple populations. Indeed there is now a significant difference in the isozymes between these two populations due to this behavioral isolation associated with the host plant preference. This has occurred in only about 150 years. The hawthorn and apple using populations are host-plant races. Since there is behavioral isolation, the hawthorn and apple using populations are not freely breeding populations and thus they are races. They are races rather than species since crosses are completely fertile. One can see that over time these host-plant races could conceivably become separate sympatric species.

For a population to be considered a host race, one must show (1) that there is behavioral isolation that is directly linked to the host they are using, and (2) show that natural crosses are possible in nature and that the offspring are fertile. If natural crosses are not occurring or if the offspring are infertile or partially infertile then the host races may in fact be sibling species. For North American butterflies, the only examples of possible host-races that I am aware of are in the genus *Euphilotes*. The larvae of these butterflies feed only on the flowers and seedpods of their host and the site of mating is on the host plant. The entire life cycle is timed such that the adults fly when the host plant is in flower. However, many of these host-plant races are proving to be good species as more research is being done.

Unfortunately, the term host plant race is often used incorrectly such as for the Cherry Gall Blue. Although the Cherry Gall Blue larvae feed almost exclusively on the flowers of the host plant, I have seen no evidence that the site of mating is the flowers of the host or that there are even populations that prefer one host over another when given a choice. In New Brunswick the Cherry Gall Blue uses several hosts and appears to use what ever is flowering at the time the adults are on the wing. The term host-plant race or food-plant race should not be used for this species until there is evidence to support this contention.

-Reginald Webster

Book Review:



Ants at Work-
How an Insect
Society is Organized
by Deborah Gordon

This book is a good primer for anyone who wants to get acquainted with ants. One genus, *Pogonomyrmex*, the harvester ant of the southwestern U.S., was the focus of Gordon's work in the Chiracahua and Pelocillo Mountains of New Mexico and Arizona. Much of the text revolves around her research into the behavior and relations between colonies of harvester ants and other ants, such as *Ephebomyrmex* ("little ants") and *Aphaenogaster* ("big ants").

Early on, Gordon delves into some very interesting aspects of her research. Notably, she covers the daily patterns of ants, the response to differences in food availability (seeds), and ant response to intruders. She also goes into size of individual colonies and its importance in the hierarchy of the community. The latter chapters cover life within the colonies and the role of chemical signals in an ant's life. Here again, Gordon illustrates with her research, particularly disturbance experiments, how ant behavior patterns were affected.

The book does not contain any photographs but relies on drawings to depict her ants and their burrows. Some of these are very well done. She also places many graphs and charts that help to explain some of the results of her work. The other reason I enjoyed the book was because Gordon paints a sympathetic vision of the trials and tribulations of fieldwork. As anyone who has done it knows, anything and everything can happen to muck up collecting in the field, and she goes into some of the problems that can occur. Published by the Free Press in 1999, this 180-page book could be a good summer read in a couple of days.

- Chuck Lubelczyk

PLEASE NOTE: Due to scheduling difficulties, the MES collecting trip originally planned for eastern Maine in September has been cancelled.

Collecting at the Chewonki Foundation

'Twas an informative trip. We had a chance to see the new education center and collect on Chewonki's grounds. The carbon dioxide mosquito trap produced a few yet unidentified mosquitoes while larvae of the common early woodland mosquito *Aedes excrucians* (Walker) were common in the brook nearby. Pitfall traps set the night before yielded few beetles but one nice find was a new town record for the iridescent, purplish ground beetle, *Myas cyanescens* Dej. Bob Nelson found other ground beetles in a pit near the center and Gail Everett watched an Azure butterfly,



Photo courtesy of Sam Ristich

Celastrina sp. laying eggs on bristly sarsaparilla nearby. Anne and Henry Howden collected in nearby woods and their findings will add to the area list. A lot of soldier beetles, *Chauliognathus* spp. were collected on vegetation. The adults feed on pollen while the larvae are predaceous. Brilliant, brassy golden tortoise beetles, *Metriorhynchus bicolor* (Fab.) were seen on bindweed, *Convolvulus arvensis* L., along the edge of the river marsh. Larvae of this tortoise beetle are fascinating as they have caudal hooks that carry their excrement around as a deterrent for predators. Tortoise beetles are a disappointment to collectors as they fade quickly and badly when they die.

I also brought blow-up photographs of *Haplothrips* spp. which are found exclusively on poroid fungi. Immature forms are scarlet. The adults are black.

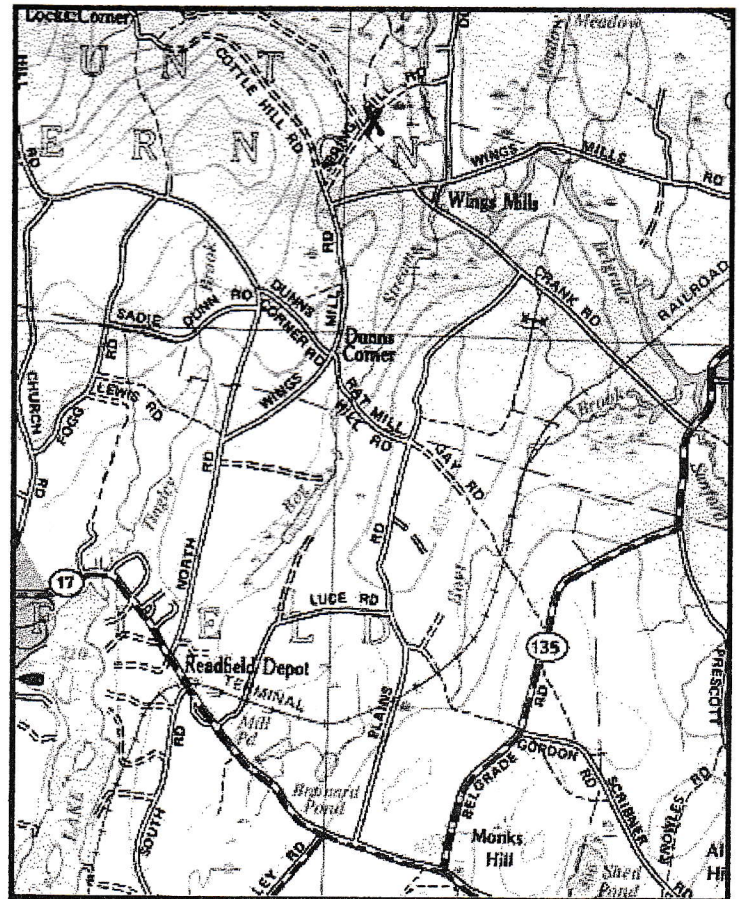
Photographs were also available of my favorite parasitic *Megarhyssa* wasp drilling in wood to deposit eggs. The larvae are parasitic on the pigeon horntail, *Tremex columba* (L.). Larvae subsist on the poroid fungus, *Daedalea unicolor*. I also brought six kinds of galls incited by mites and insects. We found cherry nipple gall, caused by eriophyid mites, and ocellate maple leaf gall (caused by the dipterous midge *Cecidomyia ocellaris* O.S.) on the grounds.

-Sam Ristich

Fall Meeting on October 8th

The fall bash and annual meeting will take place at Dick and Marj Dearborn's house in Mt. Vernon, Maine on Monday, October 8 (Columbus Day). This is an all day event, so come early and stay late! There will be a potluck lunch and chicken barbeque at noon with the annual meeting from 1 to 3 pm. This is where the MES officers for 2002 will be elected and where important business will be discussed. Collecting will take place throughout the day, so bring your gear. Advance notice of attendance is helpful. Please call Dick at (207) 293-2288 to RSVP or if you have questions.

Directions: From I-95 in Augusta, take exit 30 and follow Routes 17 and 202 west to Manchester. At Manchester, bear right on Route 17 toward Readfield Depot. After railroad tracks, turn right onto North Road and go approximately 1.5 miles. Turn right onto Wings Mill Road and follow for approximately 2.5 miles. Wings Mill Road takes a sharp right turn at the bottom of a hill. At this turn, go straight onto Cottle Hill Road. Your first right is Spring Hill Road. Dick and Marj's house is the first house on the right. Look for the signs.



Field Trip to the Wells Reserve

On July 14th, I took part in a MES Saltmarsh Insect Survey at the Wells National Estuarine Research Reserve in Wells, Maine. Eighteen people from all over Maine and other parts of the United States participated in the event.

Laura Stone, the Education Director at the Wells Reserve, had arranged to have a group of researchers demonstrate different collecting techniques for ongoing salt-marsh projects. Laura had set out pitfall traps the previous night for us to view. Chuck Lubelczyk showed how his mosquito traps collected those bothersome critters for ongoing medical research. Rich Mackenzie, a post doctorate fellow at the Reserve, discussed how his emergent traps are helping him to identify which insects use saltmarsh pannes in their different aquatic stages. Finally, I was representing the Maine Damselfly and Dragonfly Survey, a volunteer program coordinated by the Maine Department of Inland Fisheries and Wildlife that is in the process of surveying the odonates of Maine.

What amazed me most was that the interests and expertise of the participants covered the gamut from a State entomologist to a mother and her son visiting from South Carolina, who thought that a day on the marsh looking for bugs sounded like fun! The list included MES members and officers, Wells Reserve and Laudholm Trust staff, Laudholm Trust members and the general public. But our common ground was our love of nature and our interest in insects.



The day was partly sunny and if not cool, at least not scorching hot. Laura led the way on the short walk to the marsh to view the first of the traps. My job was to bring up the rear. But I couldn't believe how hard a task it turned out to be! Every few steps someone or other was stopping or wandering away to investigate some sort of creeping, crawling or flying critter! Like the proverbial saying goes, it was like "trying to herd cats!" Finally, we all made it to the marsh and began touring the various research projects.

The marsh was particularly lovely that day. The artistic display of cumulus clouds offered passing relief from the sun and reminded me how infrequently I get to view big skiescapes (living in the woods as I do). When it came time to

go off and collect on our own, the group scattered like *la cucarachas* when the lights turn on. Some people were interested in beetles, others in butterflies, and still others took a generalist approach and stalked just about anything that moved. But it didn't matter if they were swinging nets, wading knee-deep in water or tossing over logs, everyone sure looked like they were having fun.

After our allotted time to wander was up, we took our treasures back to the newly built Maine Coastal Ecology Center (MCEC) with its brand new teaching lab. After a brief break for lunch, we got to view our finds up close and personal under the lab's new stereoscopes. What we got to see was breathtaking. Some of these insects turned into works of art as we viewed boggling arrays of colors and patterns. Others impressed us with their sheer numbers as the buzzing collection of mosquitoes threatened to fly away, covered petri dish and all. Still more critters impressed us with their size as exemplified by a tarantula-sized native spider. Beetles, dragonflies, butterflies, moths, true bugs, springtails, flies, wasps...the list is still being tallied.

We may have walked only a few miles, but what we did have a chance to exercise that day was our curiosity about the natural world in which we live. To be able to be *awed* by the arrangement of scales on a butterfly's wing, or to see a shed skin of a nymph and try to imagine what it would be like to go from a water-living creature and suddenly be flying through the air...

It is this curiosity that I personally work hard at to keep alive and healthy. And to be able to do this with a diverse group of like-minded people was the frosting on the cake.

-Sue Smith



All photos on this page courtesy of Scott Richardson

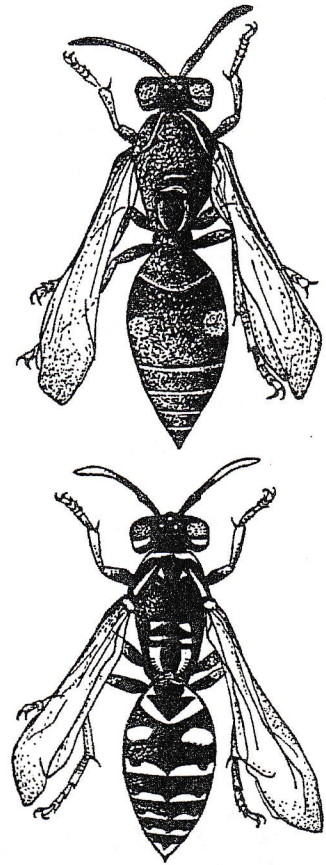
Paper Wasps in Maine

Paper wasps belong to the family Vespidae. They build multi-celled nests from chewed-up plant fibers taken from lumber, posts, or bark and their open-comb nests hang downward like tiny lampshades. Close relatives include hornets and yellowjackets in the sub-family Vespinae. Some of these species make paper nests underground while others construct arboreal nests that have the comb protected by an outer "bag."

Maine has two species of paper wasps. *Polistes fuscatus* is our only native paper wasp. Females overwinter in attics, garages and houses. An overwintering female or foundress will start a small nest in spring and will later be helped by other females. Nests can be found in overturned flowerpots, under eaves, and in barns. Females hunt for small caterpillars and other insects to chew up the malaxate into nutritious globs for their developing larvae. The colors of our native paper wasp are dark brown or chestnut with indistinct or pale yellowish lines. There may be maroon or barn-red marks alongside the eyes and occasionally two vague maroon spots on the abdomen. There is much variation in color. Females may have considerable maroon on the face. Males have yellow faces, with yellow on the undersides.

A newcomer to Maine is the more brightly colored *Polistes dominulus*, a native of Europe, Asia, and the mid-East. First caught by the author in Maine in 1995, it was reported in the June 1996 issue of SPHECOS. Specimens have been caught each year in Biddeford, Arundel, and Sanford. This non-native has also been recorded in Ohio, New York, Connecticut, Maryland, New Jersey, and Pennsylvania. Whether its spread will affect the breeding success of our native paper wasp is not known.

- Monica Russo



Polistes fuscatus (top) and *Polistes dominulus* (bottom). Drawings courtesy of Monica Russo.

Call for Newsletter Submissions

All MES members are encouraged to submit items for *The Maine Entomologist*. We will gladly accept articles, artwork, photography, sightings, editorial pieces, and other insect-related tidbits. As editors we work very hard to try and provide you with a variety of topics, however, this is your newsletter and it is only as good as MES members make it. PLEASE consider submitting something for our next issue. The deadline is November 1. You can send submissions to us by snail mail (see our address on the back cover) or by e-mail at naturbuf@gwi.net. If you have questions or suggestions, please feel free to call us at (207) 324-2849. Thanks!

- The Editors

INSECT LIMERICKS

A SCALIPHON MUD-DAUBER FLEW
TO A MUD PUDDLE CLOSE TO MY SHOE
SHE CREPT FORTH TO GATHER
CLINGY CLAY FROM THE SLATHER
YET HER LEGS' YELLOW HUE REMAINED
TRUE.

THE ANT-HUNTING WASP, APHILANTHOPS
FROM HER FRANTIC ANT SEARCH NEVER
STOPS
SEEN BY RISTIC IN LEEDS
AND BY RUSSO IN WEEDS
FOR WINGED QUEENS OF FORMICA, SHE
SHOPS.

- MONICA RUSSO

About the Maine Stream Team Program

What is the Maine Stream Team Program? How can I find out more or join one of the teams? If you want to find out more about how to monitor or improve water quality in Maine or learn about important water quality issues, here is the contact information:

Maine Stream Team Program
c/o Maine DEP
312 Canco Road
Portland, Maine 04103
(888) 769-1036

E-mail: mstp@state.me.us
or on the internet, look up:
www.state.me.us/dep/blwq/docstream/team/

Woollybear Weather Forecast

Members who wish to do a "Woolly Worm Winter Weather Forecast for 2001-2002" should watch for the familiar red-banded black woollybear caterpillars in late September or early October. You need about 20 caterpillars to work with and by the time of our October meeting it will be almost too late. Count the number of red haired segments (including half-segments) in relation to the number of black and come up with an average (4.33 red segments is a normal winter).

For details, refer to the November 2000 issue of *The Maine Entomologist* or contact Dick Dearborn, who will be doing it for the fifth year in Kennebec County. It's a fun school project as it leads to discussions of science, folklore and meteorology too.



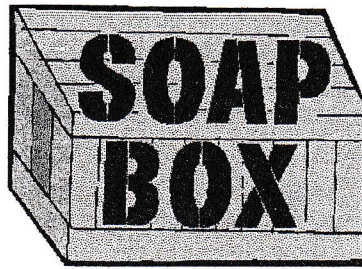
From the President Continued from Page 1

As always, member support is crucial to a group such as ours and I strongly encourage you to attend field trips, write for our newsletter, and support associated groups like the MDDS. Several members signed up for the MDDS photo workshop at Unity College on August 4th while others plan to attend the Acadian Entomological Society meeting on Prince Edward Island from August 22-24. We encourage members to talk about insects whenever the opportunity occurs. Monica Russo has graciously provided us with four eleven by thirteen-inch MES posters for display at public presentations. Copies are available for use from Laura, Edie, Bob, or myself.

Our editors have again come up again with a great issue with new sections and a couple of exciting new T-shirt offers. Read this issue, respond where appropriate, and don't forget to buy a T-shirt (we make a profit on the Maine Insects shirt!) and please pay any overdue dues!

Meet me in the field, and don't forget our "fall bash" (i.e. Annual Meeting) at my place on October 8th.

-Dick Dearborn



A Call to Arms By Tony Roberts

Any of us who are concerned with the name and nature of insects-and I suppose that includes all of us in one way or other-are inevitably dependent on the Smithsonian Institution, the quasi-governmental organization that serves as the repository and research center for America's (and increasingly, the world's) treasures, including its bugs.

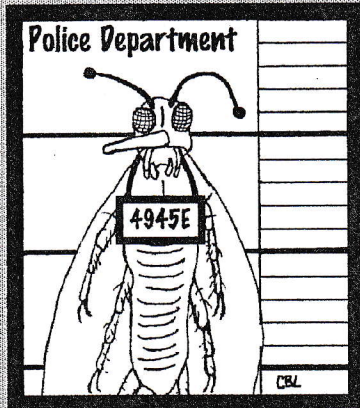
In January 2000, a new Secretary was appointed for the Smithsonian, and by all accounts, the choice has been a disaster. Apparently the incumbent, Lawrence A. Small, a former Citicorp officer, has taken it as his mission to transform this purest of scholarly institutions into a lean, mean, moneymaking machine by "rationalizing" its redundancies out of existence and selling off exhibits and programs to the highest corporate bidders.

Some of his vandalisms have already received widespread publicity. For example, his decision to close the Conservation and Research Center of the National Zoo, a facility devoted to the study and breeding of endangered species, was reversed under pressure from Congress and the public after it was exposed by the New York Times. But apart from such high-profile missteps, Small's accounting priorities and his slash-and-burn management style have already had a widespread demoralizing influence on the Institution's staff, including those in our own Natural History Museum, whose Director resigned in protest.

It's urgent that as many members as possible write to express their concern to Maine's congressional delegation, as well as to Vermont Senator Patrick Leahy and California Congressman Robert Matsui, who serve on the Smithsonian's Board of Regents. Congress holds the purse strings to seventy percent of the organization's budget and thus has considerable influence over its management, and Secretary Small serves at the direct pleasure of the Regents, who have ultimate oversight over his performance.

Please send e-mail to maroberts@acadia.net if you would like additional details, including the full composition of the Board.

Note: The Soap Box is a new column designed to allow MES members to express their opinions and viewpoints on topics related to entomology. The views expressed in this column are those of the author and do not necessarily reflect those of the Maine Entomological Society. Publication of submitted entries is at the discretion of the editors and MES board.



The Bug Mug Shot: Antlion

ORDER: Neuroptera. This order also includes lacewings, fishflies, and snakeflies.

FAMILY: Myrmeleontidae, the largest family in the order.

SPECIES: There are three species of antlions that we know of in Maine, all of which have been found south of Kennebec County and west of Penobscot Bay. *Myrmeleon immaculatus* and *Brachynemurus abdominalis* are common, and *Dendroleon obsoletum* less so. *Brachynemurus signata* may be present along the southern coast of Maine, but has not been found to date.

DESCRIPTION: Antlion larvae (sometimes called "doodlebugs") are 10 to 22 mm in length with long sickle-like jaws. The legs are long with stiff setae. Adults resemble damselflies with their long slender abdomen, but the bodies are softer and they have clubbed antennae as long as the head and thorax combined. *D. obsoletum* has a three inch wingspan with brown spotted wings while *M. immaculatus* is of similar size but with no markings on the wings. *B. abdominalis* is similar to *M. immaculatus*, but is much smaller, with a wingspan of less than two inches.

PRIMARY HABITAT: Larvae are usually found in sandy soils. Those that dig pitfalls prefer dry places such as under overhanging cliffs or beneath the eaves of buildings. Since adult antlions are feeble flyers, they are generally found near their larval residences.

FOOD: The larval diet consists of ants, termites, beetle larvae, and other insects. *M. immaculatus* and *B. abdominalis* construct funnel-shaped pitfalls in sandy soil, while *D. obsoletum* run freely about hunting on the ground at night, but conceal themselves in shallow burrows in the soil by day where they pounce on passing insects. Adult feeding habits are poorly known; some species are predaceous, and others presumably are pollen feeders.

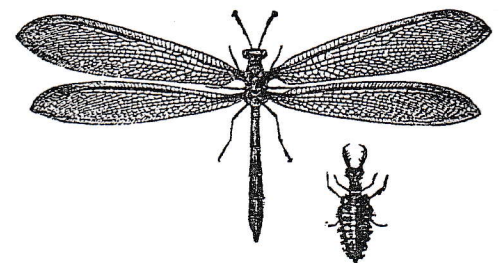
LIFE HISTORY: Adults lay their eggs singly or in small clusters in the soil. Larvae take one to two years to develop. When mature, antlion larvae pupate in the soil within a cocoon made of sand and silk. In these cocoons, they undergo complete metamorphosis. Adults live only a few weeks.

NOTES: The name antlion comes from the fact that the larvae of those species that dig pits feed chiefly on ants. Adults of many species are nocturnal and are attracted by bright lights.

Dix's Fascination with Nature

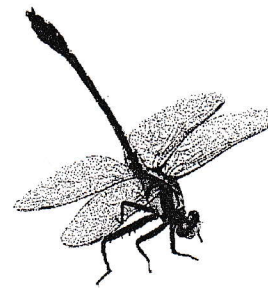
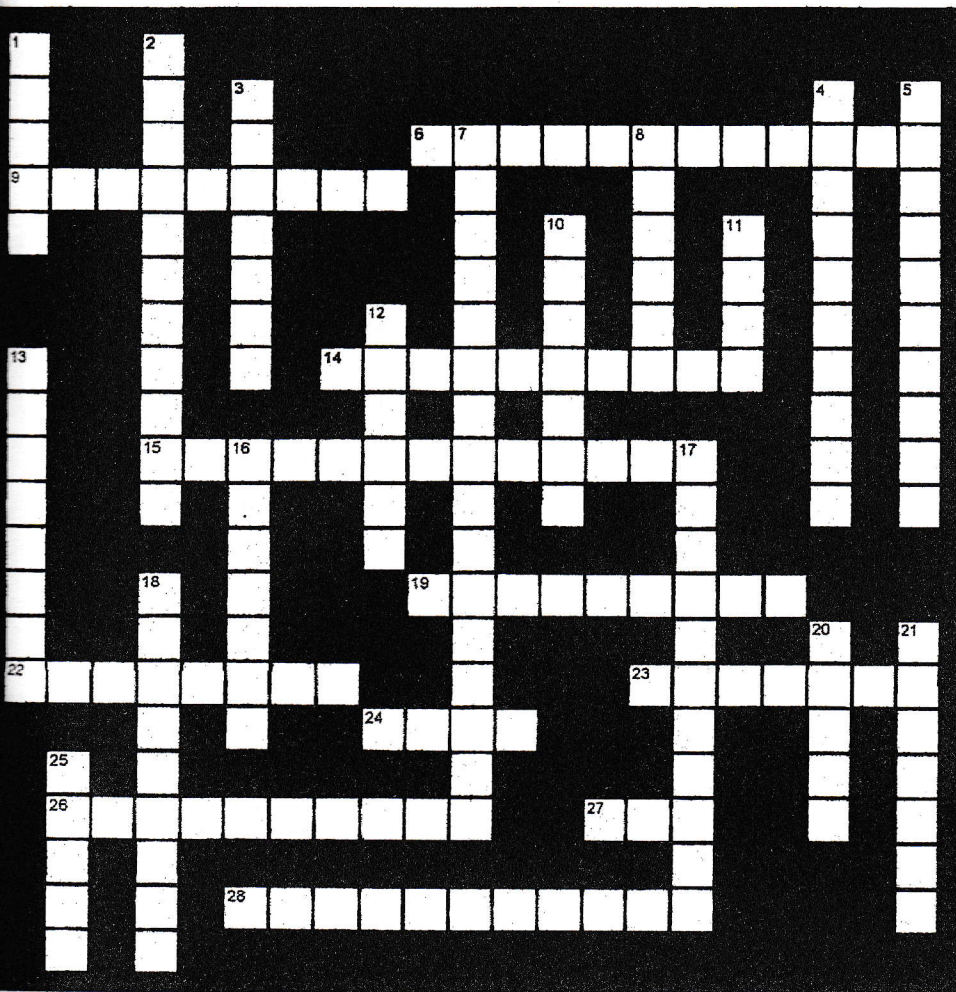
Dorothea Lynde Dix was born in Hampden, Maine and established herself as a mental health advocate, nurse, and humanitarian. Few, however, realize that she also had a fascination for nature and insects and spiders, in particular. Although she published only one article so far as is known, she was active in many natural history discussion groups of the day. Her natural history interests gave her a welcome diversion from the frustrations of dealing with the mentally ill. She states in her article, "My love of natural history and constant search after objects of curiosity and interest, had enlisted in my service the gardener, and his subordinates, who never failed of bringing forthwith to my hand, whatever they found, animate or inanimate, that was likely to become a subject of study." This very interesting account of this aspect of her life was the focus of her article published in 1831 in the American Journal of Science and Arts, Vol.19: 61-63 entitled "Notice of the *Aranea aculeata*, the *Phalaena antiqua* and some species of the *Papilio*."

- Dick Dearborn



Adult and larva of an antlion.
Drawing from *An Introduction to Entomology* by J. H. Comstock.

Maine Dragonflies and Damselflies



Today I saw the dragon-fly
 Come from the wells where
 he did lie.
 An inner impulse rent the
 veil
 Of his old husk: from head
 to tail
 Came out clear plates of
 sapphire mail.
 He dried his wings: like
 gauze they grew;
 Thro' crofts and pastures
 wet with dew
 A living flash of light he
 flew.

- From Lord Alfred Tennyson's
 "The Two Voices"

CROSS:

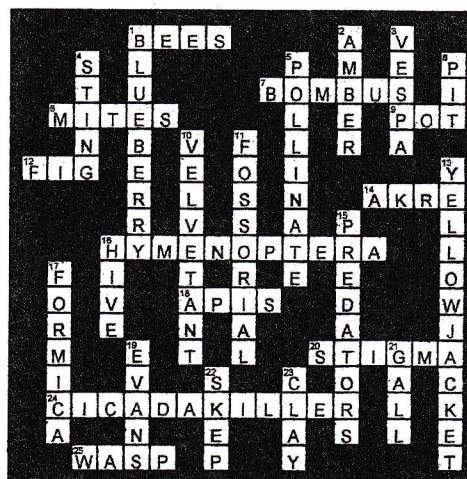
1. In some dragonflies, especially male skimmers, the body becomes covered in a waxy powder known as this.
2. The process by which a larva climbs out of the water and prepares to change into an adult.
3. A group of dragonflies with a dark band at the base of the hind wings; a piece of equipment placed on a horse.
4. A nickname for dragonflies.
5. This pennant is named after a fall holiday.
6. The largest family in the order; shorebirds with an elongated lower bill.
7. Dragonflies and damselflies belong to this order.
8. A common external parasite on dragonflies; a very small sum of money.
9. Some females use this to deposit their eggs.
10. The number of abdominal segments that a dragonfly possesses.
11. A group of dragonflies in the skimmer family named for their tendency to feed on small prey in grassy areas.

DOWN:

1. The mating pose of dragonflies and damselflies; what a hubcap goes on.
2. A blood-filled blister near the top of the wing.
3. Position where the abdomen is raised vertically into the air to avoid overheating; a stone pillar.
4. Dragonflies and damselflies undergo this type of metamorphosis.
5. This group of damselflies is known for their metallic coloration and dark wings.
7. This dragonfly is endangered in Maine.
8. The shed skin of a larva.
10. A newly emerged adult.
11. Initials for the Inland Fisheries and Wildlife program that is inventorying Maine odonates.
12. This body part of dragonfly larvae is enlarged and clawed for capturing prey.
13. Family cordulidae; green gemstones.
16. This clubtail is named for its frying pan shaped abdomen.
17. Damselflies in this family hold their wings at a 45-degree angle.
18. Scientific name for the clubtail family.

20. A snaketail named for the pine tree state.
21. A family of dragonflies notable for their large size and brilliant blue or green coloration.
25. The order name for dragonflies and damselflies is derived from the Greek word "odonto" meaning this.

Last Issue's Crossword Answers



Make Your Own Insect Cage

This inexpensive and easy to make insect cage is a fun project for kids and adults alike. It is better than a jar for holding insects since there is more air circulation and you don't need to worry about breaking glass. Keep your insects long enough to observe and identify them, but remember that this is only a temporary holding cage and insects need to be returned to where you found them.

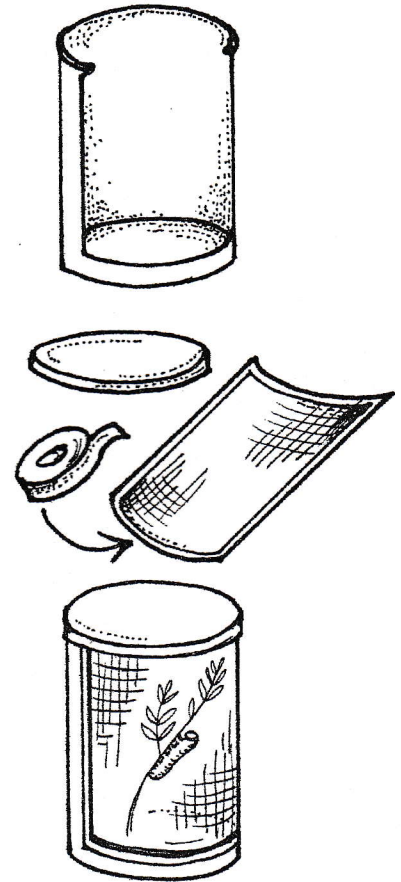
To complete this project you need an empty cardboard oatmeal container with a lid, scissors, masking tape, and a small piece of window screening (preferably fiberglass).

Step 1: Using the scissors cut away $\frac{1}{2}$ of the oatmeal container sides. Do not cut the lid or bottom of the cylinder.

Step 2: Cut a piece of window screening 1 inch wider and $\frac{1}{4}$ inch taller than the cutaway portion of the oatmeal container. Cover all edges of the screening with masking tape.

Step 3: Position the screening so it completely covers the opening in the oatmeal container. Be sure the top of the screen is flush with the rim of the container or your lid will not fit snugly. Tape the two sides and the bottom of the screening into place.

Step 4: Add your insect and a few leaves or twigs you found nearby, snap the lid back into place, and VOILA! You now have your very own insect cage! To personalize your insect cage, you can paint the outside of the oatmeal container or cover it with paper and draw your own design.



Drawing courtesy of Monica Russo

The Maine Entomologist is published quarterly by the Maine Entomological Society. Dues are \$5 per year. Checks should be made out to Maine Entomological Society and sent to Mrs. Edie King, Treasurer, at 7 Salem Street, Waterville, ME 04901. Dues are paid through the year printed on the mailing label.



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