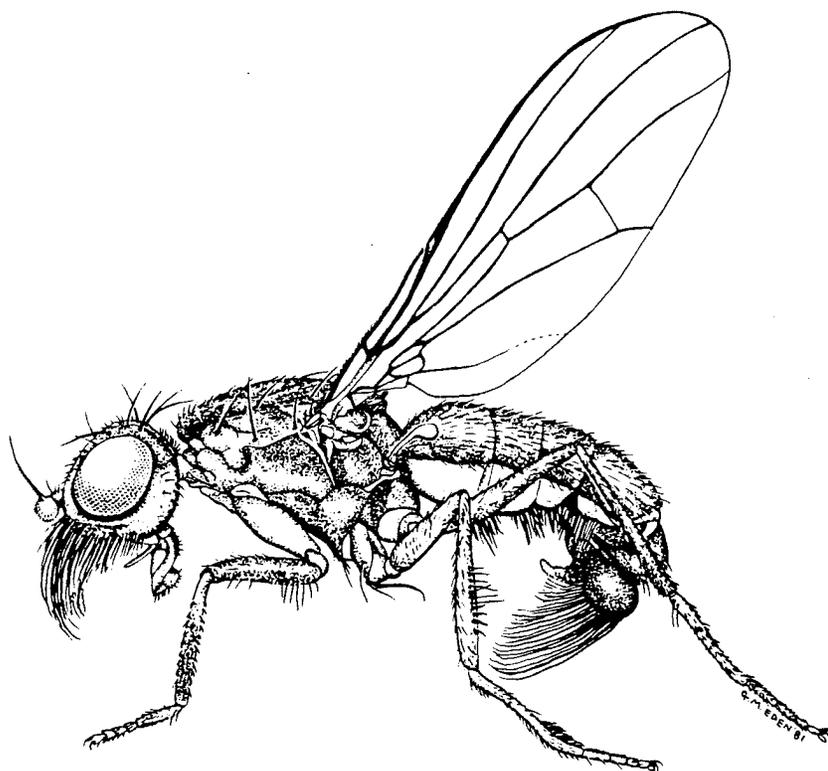


ONTARIO INSECT COLLECTORS NEWS



Sponsored by:
The Entomological
Society of Ontario

ONTARIO INSECT COLLECTORS NEWS

Introduction:

This is the first of what I hope will be a continuing series of newsletters. The last attempt to unite the 'Insect Lovers' of Ontario was made by a couple of insect collectors - (a pharmacist and a divinity student), back about 1870. That attempt was almost too successful in that the publication they started evolved into a first - rate professional journal - The Proceedings of the Entomological Society of Ontario - which no longer serves the needs of the amateur entomologists of Ontario. In recognition of the importance of amateur entomologists both within and without its ranks, the Entomological Society of Ontario is supporting this newsletter. Editing & compilation of the newsletter will be a joint effort between the Entomological Society of Ontario (ESO) and the Toronto Entomologists Association (TEA). Writing of the newsletter will be done by YOU - the insect collectors and observers of Ontario. This is YOUR newsletter, so it is up to you to send in the type of article you would like to see in the newsletter.....such things as collection and distribution notes, natural history notes, exchange requests, activity announcements, etc., etc. Your interest and participation is an absolute necessity for the survival of this newsletter. If you have anything you would like to contribute to the next issue - (tentatively scheduled for the late spring) - please send it to either:-

Steve Marshall, Dept. of Environmental Biology, University of Guelph, Guelph, Ontario, N1G 2W1.

Alan J. Hanks, 34 Seaton Drive, Aurora, Ontario, L4G 2K1.

* * * * *

Mailing List:

If you wish to receive, or continue receiving the newsletter, you must submit your name and address for our mailing list. Write to Steve Marshall at the above address.

* * * * *

Regional Activities:

Let us know what is happening in your area! In this issue there are reports from Guelph, Ottawa, Toronto and London, which appears to be the real hotbed of amateur activity.

Guelph:

The original ESO insect collection resides in Graham Hall at the University of Guelph, & has been built up to what is probably the finest collection of the insects of southern Ontario. Any questions about the collection and associated facilities should be directed to Prof. D.H. Pengelly, (U. of Guelph, Department of Environmental Biology). Organised amateur entomology at Guelph has so far been limited to occasional insect workshops run by the entomology graduate students or by the Guelph Field Naturalists' Club. Guelph students and faculty are regular contributors to insect talks, walks and displays put on by area schools and other organisations.

Ottawa:

Ottawa is really the centre of things for entomology in Canada. Aside from having two universities offering entomology programs, it is the home of the Bio Systematics Research Institute, which supports many insect systematists and one of the World's finest insect collections. The BRI is in the K.W. Neatby building on Carling Road, and should be visited by any serious amateur. It is a branch of the Canada Department of Agriculture, and handles specimens that have been sent in for identification from all over Canada. In my experience, however, the busy scientists on staff there always manage to find time to offer advice and assistance to visitors. The staff of BRI is currently involved in producing a series of identification handbooks for Canadian insects. The first book of the handbook series was called 'Collecting, Preparing and Preserving Insects, Mites and Spiders' (J. Martin - 1977), and is essential for any serious collector. The fly specialists at BRI have just published a monumental volume 1 of a two part 'Manual of Nearctic Diptera'. It is by far the best work of its sort ever produced, superbly illustrated, and well worth the \$40 cost. Volume 1 covers the basics such as Morphology and adult and larval family keys, and its coverage of the showier families such as the Bee Flies and Flower Flies should help to convince amateur collectors that there is more to life than beetles & lepidoptera, (some editorial bias!). Ottawa supports such an active group of amateurs that I am sure there are lots of keen collectors in the woodwork there. Hopefully we will hear more about what is happening in Ottawa from one of those collectors.

Another Ottawa highlight is the National Museum of Natural Sciences, which houses both a fine insect display and the offices of the Biological Survey of Canada, as described below by Dr. Danks.

London: by Jim Cushing.

Everyone is looking forward to the 1981 season with high hopes for some good collecting. I'll be happy if it just doesn't rain every weekend like it seemed to last year. Weekends are the only time the amateur collectors can get out, & bad weather can really louse up your summer. My black light moth trap captures were so skimpy last summer that I did not bother to put the trap out later in the season. Ken Thorne felt the season was not as productive as previous years, however, he pointed out that he does not get out collecting as often as he used to and perhaps he just hit the bad days. Ken is heading out to western Canada again this summer for some 'exotic collecting', Canadian style, & hopes to find some Lepids the collectors out there have missed. Jack Overduin was telling me he too did not make it out as much as he wanted to, but Jack has made progress in another way. The 33 drawers for his yet-to-be-built cabinet are all done & they are flawless! He's got about 12 already full and hopes to make good progress in the summer season in filling some more with new species of beetles.

Time is certainly the biggest limiting factor in an amateur collector's progress. I was recently talking to John Walas in Thunder Bay & he told me that he sold his house and moved in to an apartment to escape the constant time consuming labours to maintain and improve the place. Wow....that's determination to squeeze out more collecting time! I don't think I'll go that far but I am going to get out more this year. Barry Harrison here in London is likewise determined to hit the fields & woods more this year. He would like to get some live walking sticks this summer to investigate what types of food plant they can be sustained on and also investigate the reasons that Garden Tiger Moths do not seem to inhabit the area around London (I have not taken any in Middlesex County).

Bill Stewart of St. Thomas is continuing this season to collect butterflies towards the preparation of a list for Elgin County which he has been working on for a few years. This work follows his publication of 'A Guide to the Flora of Elgin County'. Ken Thorne is planning publication of something on the Machaon group of Swallowtails in the near future but must gather further data. I think a worthwhile project which the amateurs in the London area could begin & add to over the years would be a list of insects captured in Middx. Co. with locations and dates. I am sure there have been thousands of collections made in our area over the past 100 years & yet few records exist. Collectors & collections come and go, but a written record deposited in an archive would bear witness to our labours and would serve as a source of information for years to come.

Toronto: by Alan J. Hanks.

The members of the Toronto Entomologists' Association were all hoping for a

good collecting season, especially since many species had been below average in numbers in 1980. John Eberlie of Colborne planned to continue his researches on the life history and status of *C. tullia inornata* and Quimby F. Hess intended to carry on with his investigations of the range of this butterfly. Quimby is also going to continue his researches into the status of *Plebejus melissa samuelis* & *Callophrys (Incisalia) irus*. The annual field trip was held on the weekend of May 30 & 31, with visits to the Pinery Provincial Park and plotting of stands of Wild Lupine on the itinerary. Despite the cool weather, the main purposes of the trip were accomplished & an added bonus was the observation of considerable numbers of the Karner Blue (*L. melissa samuelis*) on Sunday morning. Some fairly good photographs of the insect were obtained. Other butterflies were relatively scarce, although one Monarch and a number of Skippers were observed.

The Annual Summary was a major production this year, with 35 pages of data on various aspects of Ontario Lepidoptera and a further 35 pages devoted to the Seasonal Summary of butterflies and moths. This publication will in future be listed with the Serials Department of the National Library of Canada.

* * * * *

The Biological Survey of Canada (Terrestrial Arthropods): by Dr. H.V. Danks.

The Biological Survey of Canada has been developed to discuss the scientific needs in insect taxonomy and ecology in Canada, and as a clearing house for information, in order to stimulate and guide the exploration of Canada's fauna. These roles respond to the fact that there are about 33000 described species of insects & their relatives in the country, & as many more are still undescribed.

The Survey allows studies of the fauna to be considered from a national perspective, coordinates cooperative effort and acts as a source of information on entomological resources such as personnel, projects, collections, expeditions to particular regions and field stations.

Further information is available from Dr. H.V. Danks, Biological Survey of Canada (Terrestrial Arthropods), Invertebrate Zoology Division, National Museum of Natural Sciences, Ottawa, Ontario, K1A 0M8.

* * * * *

The Amateur Role: by D.H. Pengelly.

In nearly every country of the world, Entomology has become rather frightening, especially to those who consider themselves to be amateurs. Today, in the many journals now available, we can find an almost bewildering array of topics dealing with every aspect of insect life. As studies deepened, so did vocabu-

laries until one finds the professionals digging into their glossaries too. The task facing Entomologists is enormous to say the least. Estimates of the number of species of insects yet to be described ranges from 3-8 million. All of these have to be based on preserved material, which someone has to collect. Most of the great collections in the world today had their origin in material gathered largely by amateurs. Before the middle of the 19th Century, Rev. Bethune and W. Saunders brought together a group of people interested in insects & established themselves in Society in Toronto in 1863.

As the years passed & the importance of insects in our lives was recognised, professional training became necessary. With professionalism came complexity & with complexity the waning of the ranks of amateur Entomologists. The grouping of Entomologists into two camps was regrettable. With so much to be done, it is obvious there has to be a reunion. It will call for many amateurs to leave the butterflies and moths and delve into the lesser known groups in all orders of insects. The professionals must become accessible to amateur groups and readily give assistance to help in the understanding of the insects involved. Gathering material needed for taxonomic studies will lead to progress in taxonomy & other fields of Entomology. This is the challenge that can be met by amateurs & professionals working together.

* * * * *

The Toronto Entomologists Association: by Alan J. Hanks.

In the early to middle 1960's, numbers of amateur Entomologists were living in the Toronto area & meeting informally from time to time. In 1967, a proposal was made that a definite group be formed, affiliated with the Michigan Entomological Society. The Michigan group apparently met with all the aims & aspirations of the people concerned, & affiliation duly took place. Some of the early members, such as J.C.E. Riotte & Anker Odum, were working in the R.O.M., and the other members were local enthusiasts. The membership during this time rose to approximately 30, and this state of affairs continued until 1969.

At this time, it was felt that there were sufficient members to form an independent group, and the Toronto Entomologists Association (TEA) was born late in the year. With the blessing of the membership and support from the ROM Dept. of Entomology, the first 'Occasional Publication' appeared in 1970. It was titled 'Checklist of Ontario Skippers & Butterflies & 1969 Seasonal Summary' and was 15 pages in length. The latest TEA publication is 80 pages in length, and indicates that far more material is being submitted these days, which is a very

good sign. Other TEA publications include 'The Occurrence of the Little Sulphur Butterfly in Ontario', '*Pieris virginensis* Edwards in Ontario' & 'Butterflies & Moths on Stamps'.

During this period, the membership has fluctuated from a high of about 75 to a low of about 12, and currently stands at 67. One of the members, A.M.Holmes, is working on a very large project - 'The Distribution of Ontario Butterflies', of which 3 parts have appeared in draft form. Eventually it is hoped to combine all parts and publish a book on this subject. Another member, Q.F.Hess, is the Ontario co-ordinator for the Lepidopterists' Society, and one of the founders, J.C.E. Riotte, is working in Hawaii. It is interesting to note that 12 current members names appeared in the list from 1969 when the TEA was founded, & hopefully their names will still be on the rolls after another decade has passed.

* * * * *

1980 E.S.O. Meeting.

The 17th meeting of the E.S.O. was held at Spencer Hall in London on October 17-19th, 1980, & for the first time, an amateur session was included among the events, under the Chairmanship of Mr. B.Nagy of the University of Western Ontario. This amateur session was held on Saturday morning following the address of welcome to the whole assembly by Dean J.B.Bancroft of U.W.O.

After a short address by E.C. Becker & M. Campbell of the Biosystematics Research Institute, there was a question and answer period and free time to meet other attendees and look at displays of collections and publications. A film on insects was shown and the group then travelled to the UW0 campus for a tour of the Library and a demonstration of Entomological information retrieval from one of the assistants. The UW0 insect collection was also visited with time to look at some of the material and techniques currently under investigation.

Following the return to Spencer Hall and some lunch, the regular programme, a Symposium on 'Insects and the Urban Environment' continued. Other enjoyable facets of the meeting were a wine and cheese party on Friday night, the social hour and Banquet on Saturday night, the Photosalon and a very good slide show & commentary by J. Cossey.

The 1981 meeting will be in Kingston & another amateur programme is planned. Hopefully, this programme will be well attended.

* * * * *

We must apologise for not getting the first issue out before this, but the postal strike completely ruined our plans. However, the first issue contains only introductory material, so it was not vitally important. Future issues may have meeting or event dates, so material of this nature should be submitted ahead of time.

* * * * *

The annual meeting of the Entomological Society of Ontario will be held on Oct. 23, 24 and 25 at the Donald Gordon Centre for Continuing Education, which is in Kingston, just off the campus of Queen's University. There will be an Amateur Programme, including a Photosalon for black and white prints, colour prints and slides of insects or related arthropods. Collectors are also invited to submit insect collections for competition and exhibition. Collections should be around a common taxonomic, environmental, or ecological theme which should be stated & included with the collection. A best in competition certificate will be awarded for this and the best entry in the Photosalon. Further information and an entry form may be obtained from the programme committee:-

c/o Heather McBrien,
Biology Department,
Queen's University,
Kingston, Ontario,
K7L 3N6.

All entries should be in the hands of the programme committee by October 23rd.

* * * * *

Downtown Pittsfield, Mass. mall to be smaller than original plan

Pittsfield, Mass.—This city's downtown shopping complex has moved closer to reality after a series of moves began to break a logjam in which the project has been caught.

First, the Department of Housing and Urban Development (HUD) granted a two-week extension of the March 1 deadline for use of a \$14 million Urban Development Action Grant.

Then, when city officials and The Pyramid Companies, designated developer of the center, began to make progress in working out their differences over size and configuration of the center, HUD offered another extension.

Making the deadline had seemed to be a shoo-in until former Mayor Paul Brundie, a strong supporter of the project, was defeated last fall by the new mayor, Charles L. Smith, who during the campaign advocated a scaled-down project.

With the new administration calling for a scaling-down, progress toward a contract-signing slowed when Pyramid balked at any such change. The developer felt that a smaller project in downtown Pittsfield would invite a competing mall in the suburbs. Mayor Smith has indicated, however, that he would utilize the Carter Administration's community conservation guidance to block any such project.

But now, Pyramid is working with an advisory team appointed by Smith to come to an agreement on the size and design of the center. According to Pyramid general partner Robert Congel, the project will likely have four department stores instead of five, and about 800,000 sq. ft. instead of 1,000,000.

Congel maintains that "the project, as originally proposed, would devastate existing businesses. But I do intend to give Pittsfield every opportunity to build something that is Pittsfield's own."

project's location near a new town well.

After some discussion on the appeal, DEQE classified the 85-acre former cranberry bog as wetland under the jurisdiction of the Wetlands Protection Act, subject to the control of the state and the town.

However, the city strongly supports the mall, which is otherwise well underway. Pyramid has received an order of conditions and a building permit for the \$15 million complex, which will total some 500,000 sq. ft. and have three as yet unnamed department stores.

And in New Hartford, N.Y., Pyramid was the winner in a decision handed down by U.S. District Court Judge Neal McCurn. In that case, the Sierra Club had tried to block a project on the grounds

Part of mall site set aside for butterfly

Albany, N.Y.—The rare Karner blue butterfly will have a place to call home because of a compromise offered by The Pyramid Companies, which is trying to build the 1.2 million sq. ft. Crossgates Mall in Albany and adjoining Guilderland.

The 170-acre Crossgates project has been beset by a series of delays involving the environment, traffic patterns, zoning, economic impact and the like, to the extent that it became a major local campaign issue last fall.

While the election results were generally positive for Crossgates, a number of obstacles remain, especially approval of the center's road plan.

Environmental opposition to the project has centered on the rare butterfly, ironically named after a 19th century land developer, which foes of the project have asserted would become extinct if the center is built on one of its few known habitats.

But Pyramid has offered to set aside several acres of the development site as a stand for the Karner blue, a move which the company hopes will break the environmental deadlock.

When completed, Crossgates will have a total of some 200 tenants, including Filene's and J.C. Penney.

that the U.S. Army Corps of Engineers hadn't followed proper procedures in granting a wetlands permit.

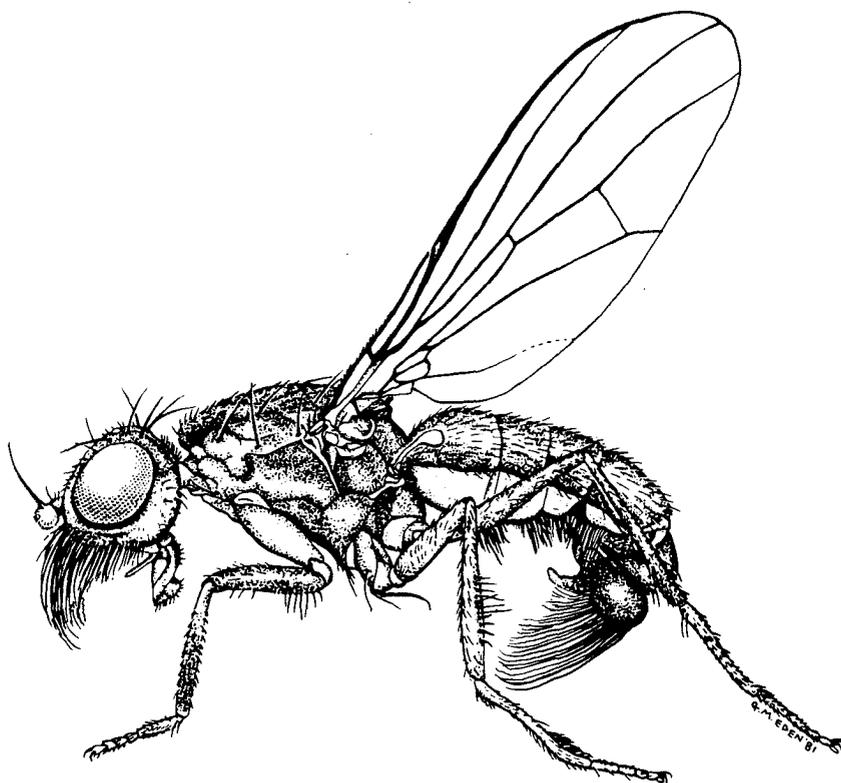
But Judge McCurn decided that while the Corps did violate "the letter of the law" in the permit procedure, it hadn't

done anything serious enough to warrant halting the \$35 million project.

Pyramid still hopes to open the project sometime this summer. It will total some 800,000 sq. ft. and have Hesse's, Sears and J.C. Penney as anchors.



ONTARIO INSECT COLLECTORS NEWS



Sponsored by:
The Entomological
Society of Ontario

ONTARIO INSECT COLLECTORS NEWS

Introduction:

Here is the second issue of the Ontario Insect Collectors News, a little later than planned and smaller than hoped. It is somewhat disappointing that we have not had a better response to our first endeavour in the form of more articles. It is almost at the borderline point of saying it is not worth the expense, but it would be a pity for a good idea to founder after one issue. So this issue goes out with a plea from the editors - SEND SOME MATERIAL! It does not matter a great deal what it is, as long as it concerns insects and would be interesting to amateur and professional alike. Please send contributions to either of the editors:

Steve Marshall, Dept. of Environmental Biology, University of Guelph,
Guelph, Ontario, N1G 2W1.

Alan J. Hanks, 34 Seaton Drive, Aurora, Ontario, L4G 2K1.

* * * * *

Regional Activities:

We need more reports from Regional areas. Only two on hand at the moment.

Guelph:

Many of the denizens of the Guelph University entomology buildings have collected insects together for years and are sometimes inclined to get a bit competitive about their abilities to ferret out and identify rare material. Last Fall these collectors, including undergraduates, graduates and staff at the University, were given the chance to test their skills in a weekend of competitive insect collecting. This event, the first J.M. Cumming memorial insect collecting competition, was named after the usually late J.M. Cumming, an ex-Guelphite renowned for his collecting exploits. The intention is that this shall be an annual event, providing lots of fun & a lot of information about your competitor's techniques, and resulting in a superb survey of the insect fauna of the Guelph area in late fall. About 220 families of insects were turned in from the first trip, and the specimens were deposited in the Guelph collection, which is the ESO collection (your collection!).

Under the rules established by G.J. Umphrey, the competition commenced at 1 a.m. Saturday morning - prior to which all the competitors convened at

a local beverage room to discuss strategy. Winners of the competition were the two-person team handing in the largest number of correctly identified insect families by Sunday night. I am looking forward to next year's event - perhaps we will be seeing some entrants from London or Toronto.

Toronto:

Firstly an apology regarding an omission from the article on the Toronto Entomologists Association in the last issue. Among the early members were Mr. & Mrs. Smythe, who organized the first meeting in High Park. Mrs. Smythe was Secretary of the Entomology Dept. at the Royal Ontario Museum. This information was missing from the records, and was brought to my attention by J.C.E. Riotte, to whom thanks are due.

Seven meetings of the TEA were held between September '81 and May '82 - the attendance varying from 10-24, with some assistance from the weather to keep the numbers down at times. Some lively discussion took place regarding the Karner Blue butterfly, which has been closely observed by TEA members at the Pinery for the last few years. A report has been forwarded to the F.O.N. regarding the endangered habitat for this insect. The 1981 Summary contained 12 pages of special notes on Ontario lepidoptera, and the summary proper was arranged according to Memoir No. 2 of the Lepidopterists Society.

It is with deep regret that we have to report the death of Walter Plath Jr., one of the charter members of the TEA. Walter passed away on August 12, 1981, at the age of 55, a victim of cancer. His special interests were the studies of the life histories of selected species of lepidoptera. His study of the West Virginia White resulted in a report for the Ontario Ministry of Natural Resources. One of his special interests was the Geometridae, and the collection made by him is in the ROM. He will be sorely missed.

* * * * *

The Triangle Spider: by Christine Schisler - Guelph

Hyptiotes cavatus (Uloboridae), a small (3-4 mm), dull grey-brown spider can be found in the underbrush of deciduous and pinewood habitats across S. Ontario. It builds a triangular web of three sections. The apex of the triangle has a signal thread attached which is held by the spider's front legs. The spider attaches its spinnerets to a twig by a silken thread which is held by the fourth leg. The body of the spider always bridges the gap between the web and the twig. The spider usually hangs dorsum down close to the twig so

that it resembles a bud. It pulls on the signal line until the whole web becomes taut and then it waits for an unsuspecting insect.

When an insect touches the web - the spider reduces the tension on the signal line & the vibration of the sticky web lines causes the insect to become entangled. The snare may be drawn tight once more and then snapped, and this procedure may be repeated again & again until the victim is completely subdued. *Hyptiotes* never bite the prey - (Uloboridae have no poison glands). Instead, the Triangle Spider covers its victims with thick bands of silk, by rolling it over and over with its legs. When the victim is completely helpless, it is carried back to the resting site where it is sucked dry.

* * * * *

Insect Collecting Techniques - Esoteric and Otherwise

Everybody has a different approach to the collection and observation of insects. Some of the approaches not intuitively obvious to the beginner include pan trapping, pitfall trapping and Malaise trapping.

Pan trapping, which can be as simple as putting a pan of soapy water in your backyard, can be really fascinating. I always leave a pan of soapy water, with some salt added for its preservative effect, in my parents compost heap. When I visit home, I drive everybody crazy by sitting this pan full of drowned insecta on the kitchen table and poring over it for hours. There are always insects in that pan that I do not get any other way, for example some Rhizophagid beetles and some of the nicer Carabids.

Pitfall trapping is another way to bring in insects you might not otherwise see. A simple trap may be made by sinking a plastic cup into the soil & arranging the lip flush with the surface - then placing some bait on a stick across the top of the trap. If that bait is dung, you will see some amazing little Scarab beetles, replete with horns & bizarre shapes. If you bait your traps with carrion, they will probably fill up with large, beautifully hued, but very odoriferous Sexton beetles. The third well-known collecting method I should like to mention is Malaise trapping. I know of several Ontario entomologists who have built Malaise traps and save the residual material - the insects accumulated in the traps but not of interest to them. I should like to get together a list of people running such traps in Ontario, & where they are trapping. (Incidentally, a design for an effective Malaise trap was published by Townes in the Entomol. News 83:239-247, 1972). Please write to J.

Heraty or S. Marshall at the University of Guelph if you are running Malaise traps & wish to donate or exchange certain groups. We will at least have you listed in the next Newsletter. Since this article promised esoteric collecting techniques by the wording of the title, I should like to describe a method of aspirating small specimens from unpleasant localities, such as mushrooms that are decaying. If you are interested in the small and rare species found in that type of habitat, but, understandably, do not want to use mouth aspirators, a vacuum aspirator is the answer. I have found that a Black and Decker rechargeable 'Car Vac' fitted with a detachable plexiglass cylinder on the end makes a great collecting tool. A screen is fixed in the plexiglass cylinder so when it is filled with specimens, it can be removed, corked and replaced with another 'chamber'. Such a vacuum aspirator has been found useful not only for collecting little flies off decaying material, but also for collecting spiders, night lighting, and emptying car nets. Car nets! Did he say car nets! That's right - the last technique I want to mention. A car net is a large net mounted in front of a car - just how effective it is will be reported and discussed next season.

* * * * *

Amateur Course on Insect Biology:

This course is part of the Education Program at the Royal Botanical Gardens in Hamilton, Ontario. It is designed for amateur entomologists, naturalists, photographers and teachers and is being taught at the Royal Botanical Gardens during the spring. This is one of a number of courses taught at RBG in their Community Educational Program. The course consists of four evening lectures in March & an all-day field trip in the local area in June. It has been taught by Mark Sears, an Entomologist in the Environmental Biology Dept at the University of Guelph, for two years.

The course is designed for the very general amateur & the enrolment has been about twenty students for the past two years. About thirty of the most common families are examined in slides, films, & under the microscope during the evening sessions. The field trip allows the students to collect insects and to observe them in their natural setting. Students are encouraged to observe, collect and photograph insects on a continuing basis during and after the course.

Comments have been favourable regarding the purpose and scope of course

content. Hopefully, it will kindle a spark of interest in insect biology in naturalists, both young and old, in the Hamilton-Wentworth area. The course will again be offered in the spring of 1983. The registration fee is about \$35 and includes the Peterson Field Guide to the Insects. Information regarding registration can be obtained from:

Royal Botanical Gardens, Box 399, Hamilton, Ontario, L8N 3H8
Telephone - (416) 527-1158.

* * * * *

The Prairie or Inornate Ringlet in Ontario.

For a number of years, the status of this insect in Ontario has been in a state of confusion. Various authorities (D.Davenport 1941; F.M.Brown 1955) have put forward views on the various subspecies and their habits. Two members of the Toronto Entomologists Association have studied the insect since 1977. John Eberlie has made rearing studies to determine seasonal status and Quimby Hess has been investigating the western limits of the butterfly in S. Ontario.

The classification of the various subspecies has also varied over a number of years. Klots in 1951 assigned four subspecies, (*inornata* Edwards, *nipisiquit* McDunnough, *benjamini* McDunnough & *mcisaaci* dos Passos) to *C.tullia* Mueller. Dos Passos in 1964 assigned five subspecies, (*inornata*, *nipisiquit*, *benjamini*, *mcisaaci* and *heinemani* Brown) to *C.inornata* W.H.Edwards. Howe, in 1975, follows a similar arrangement except that *nipisiquit* and *heinemani* are assigned to *C.nipisiquit*, & the other three subspecies to *C.inornata*, implying two separate and distinct species. Finally, Miller & Brown in 1981 (Lep. Soc. Memoir # 2), follow the same arrangement as that used by dos Passos in 1964 (Lep.Soc. Memoir # 1).

Another factor which has caused considerable discussion is the number of broods in various areas and their relationships to one another. Where broods appear in June and August, some authorities have maintained that they are in fact separate subspecies, not related to one another. With the availability of John Eberlies rearing studies, some clarification of the situation may be in order. The subspecies of *C. inornata* W.H.Edwards, are as follows:

- a. *i.mcisaaci* dos Passos - TL - Doyles Station, Newfoundland.
- b. *i.nipisiquit* McDunnough - TL - Bathurst, New Brunswick.

This subspecies appears to be univoltine, and is in general much darker than the other subspecies. It is possible that it does not, at present, occur in Ontario, although it was recorded in the past.

c. *i.heinemani* F.M.Brown - TL - Grindstone Is., Jefferson Co., New York.

This subspecies is bivoltine & extends throughout southern Ontario to a line drawn approximately from Owen Sound to Hamilton. J. Eberlies rearing studies have shown that ova laid in August give rise to June adults in the following year. Ova laid in June give rise to adults in August of the same year, but a few larvae hibernate through winter and produce adults the following June.

d. *i.inornata* W.H.Edwards - TL - Between L.Winnipeg & The Pas, Manitoba.

This subspecies is univoltine, and extends into Ontario from the west as far as Algonquin Park. There is clearly a cline between *inornata* and *heinemani*, ocelli become less frequent and the brown basal areas of the hindwing undersides become grayer as one goes north.

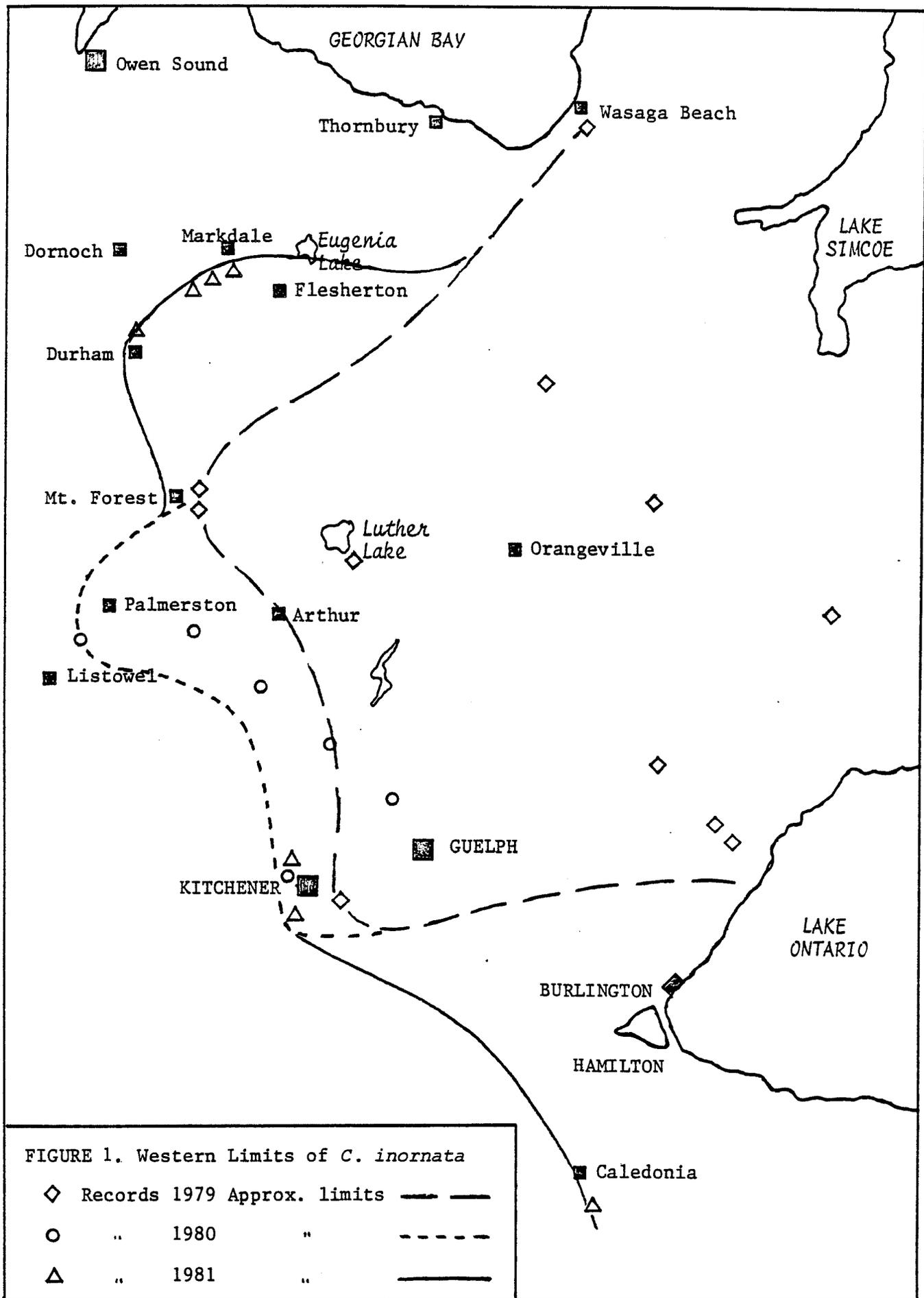
e. *i.benjamini* McDunnough - TL - Waterton Lakes, Alberta.

There is a cline between this subspecies and *inornata* in Manitoba.

There appears to be no question that the butterfly is extending its western limits in southern Ontario. Quimby Hess has conducted detailed studies during June and August, & has found a westward progression from 1979 through 1981. These results are summarized in Figure 1.

The foregoing has been summarized from data published in TEA Occasional Publications #'s 10-79, 11-80, 12-81 and 13-82, as well as other publications mentioned. It gives a good indication of the valuable contributions that may be made by amateur entomologists.

* * * * *



Nearctic Entomology - The joint ESA, ESC and ESO meetings.

The combined meetings of the Entomological Society of America (ESA), the Entomological Society of Canada (ESC) & the Entomological Society of Ontario (ESO), will be held November 29-December 3, 1982, at the Royal York Hotel in Toronto. The theme of the meeting is Nearctic Entomology & promotional projects are planned for the Ontario Science Centre. In addition, a photo salon is planned, with slides being shown in the Planetarium on the Sunday.

The Toronto Entomologists Association is planning some activities in the Royal Ontario Museum on Sunday, November 28. It is also anticipated that the permanent gallery of the Dept. of Entomology will be open at this time, so a visit to the R.O.M. during the meetings should prove interesting. If enough interest is generated, a meeting will be held to discuss the future of this publication, and also the future plans of amateur entomological societies in Ontario. Please let Steve Marshall or Alan Hanks know if you can attend.

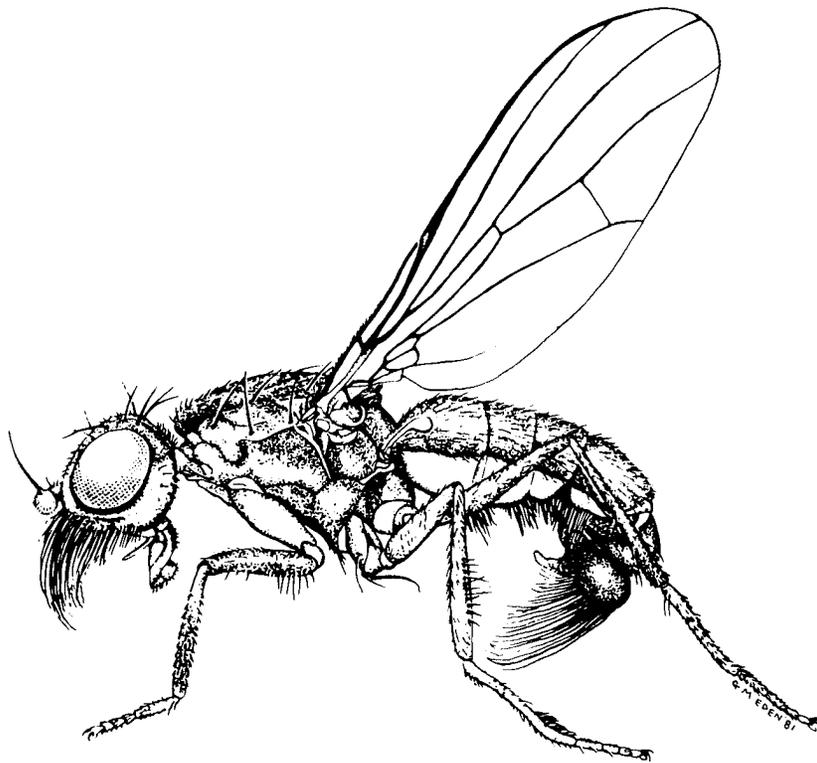
* * * * *

Mailing list.

We have compiled a partial mailing list of those interested in receiving a copy of this publication as and when it appears. Particular interests are only available for a few of the names. If you receive this copy, please send us the details of your interests in entomology, & they will be added to the list. In addition, if you wish to receive a copy of the list, please enclose a stamped addressed envelope, and one will be forwarded as it is completed.

* * * * *

ONTARIO INSECT COLLECTORS NEWS



Sponsored by:
The Entomological
Society of Ontario

ONTARIO INSECT COLLECTORS NEWS

Volume 1, number 3, February 1984.

1. INSECT COLLECTING IN THE HUDSON BAY LOWLANDS, by E.R. Fuller (R.O.M.).

During the summer of 1981, I had the opportunity to collect insects at Kiruna Lake in the Sutton Ridges. The trip, made for the Department of Entomology, Royal Ontario Museum, lasted from July 1 to August 9. The Sutton Ridges are a 60 square mile outcrop of Precambrian rock about 50 miles south-east of Winisk. The area is somewhat unusual for the Lowlands. The ridges rise to an elevation of about 500 feet, and are ecologically rather diverse. Terrestrial habitats range from barren rock outcrops to peat bogs and upland subarctic forest. Aquatic habitats range from small bog pools to medium size lakes, with many small streams flowing into the lakes. The flora is dominated by black spruce and tamarack, with willow and Potentilla in the clearings. Discontinuous permafrost was found about 2 feet below the surface of the ground.

When someone mentions insects of the north, the first to come to mind are the biting flies. Kiruna Lake was certainly no exception. Mosquitoes, black flies, horse flies and deer flies were always present during the summer. The mosquitoes and black flies could be ignored with the aid of insect repellent and a head net. The tabanids were considerably more persistent. A Malaise trap set on top of a ridge trapped over 1 000 tabanids in a 12 hour period!

Fortunately, the biting flies were not the only insects present. Several species of the northern butterfly genera Boloria, Erebia, Oeneis, Colias and Purgus were in flight. A forest fire two years previously had provided ample habitat for cerambycid and buprestid beetles. We could often hear the larvae of the cerambycid Monochamus burrowing in the logs we had chosen for our tent poles!

At night, when the air temperature was above 8 deg. C, I was able to operate a light trap. Noctuid and geometrid moths and limnephilid and leptocerid caddis-flies (as well as the ubiquitous mosquitoes) were commonly collected at the light.

Kiruna Lake and the surrounding bodies of water supported a rich and diverse aquatic fauna. We have identified 27 caddis-fly genera, 9 water mite genera, 8 may-fly genera and 3 stone-fly genera, as well as 6 dipteran families, 4 coleopteran families and 3 odonate families from the material collected.

The summer of 1981 was reported to be an unusually dry year in northern Ontario. The good weather certainly contributed to the success of the insect collecting on this trip. The specimens gathered represent a significant contribution to the understanding of the insect fauna in this poorly collected area.

2. USE OF AN INEXPENSIVE BERLESE DEVICE TO COLLECT UNUSUAL BEETLES, by

Brian V. Brown.

Many small beetles, although common, are poorly represented in collections of insects. In the University of Guelph collection, for instance, there are very few fringed-winged beetles (Ptiliidae), which are very abundant insects. The reason for this small amount of material is probably that there are few general collectors who bother using a Berlese device, which is an apparatus for separating insects from litter, leaves, rotting wood, carcasses, fungi, or just about anything. The construction of such an instrument is so easy and inexpensive that there is really no reason for not using one if one wishes to expand their beetle collection.

The main item needed is a funnel, and the ones that I prefer are those commonly sold in hardware stores for use with lawnmowers and tractors. They are about 8 to 10 inches across the top and have the advantage of being that size for most of the depth of the funnel, allowing larger samples to be processed. Other material needed is some plywood (about 1/2 inch thick is suitable), some screen (about 1/4 inch mesh), a jar to catch specimens (a glass orange juice jar is perfect), some paradichlorobenzene (PDB) or naphthalene (mothballs) and some 70% alcohol.

Some screen is cut in a circle to fit the bottom of the funnel (8 to 10 inches) and is put inside to stop the sample from falling through. The plywood is cut about 12 inches square and in the centre, a square of screen is stapled down on three sides, the fourth being left open to hold the PDB.

Once the sample is collected, it is put in the funnel on top of the screen. Some PDB or naphthalene is wrapped in a kleenex and put in the screen pocket on the plywood and the plywood is placed on the top of the funnel, like a lid, with the screen and PDB down. The funnel is placed in the jar with some alcohol in the bottom to catch the sample. Usually all of the beetles are out within 24 - 48 hours.

The sample material depends only on your imagination, but the more different types of material used, the more different beetles you will get. Some examples of beetle groups I have obtained by this method are listed below. Note that this method can be used in the winter if the samples are brought in and allowed to warm to room temperature before extracting them.

<u>SAMPLE</u>	<u>FAMILIES OBTAINED</u>
Year old grass clippings from a lawnmower.	Ptiliidae, Pselaphidae, Anthicidae, Phalacridae, Staphylinidae, Scarabaeidae.
Bird nests.	Lathridiidae, Staphylinidae.
Leaves.	Leptodiridae, Helodidae, Carabidae.
Debris from a cave.	Clambidae, Cryptophagidae.
Moss.	Scydmaenidae.

3. INSECTS ATTACK TEA.

According to a report from Dr. B. Banerjee, insects do not seem to mind caffeine -- if one can judge by their tendency to feed on tea plantations in northern India. In plantations, tea plants have a productive life of as much as 40 years, and during that time experience attacks by as many as 200 different species of insects, including 54 species of Lepidoptera. One butterfly, a Pierid named Delias descombesi Boisd., is also listed among the tea lovers. (Ecological Entomology, vol.8, no.2, May 1983).

4. BUTTERFLY ORIENTATION AT REST.

The Grayling, (Hipparchia semele L.) is a satyrid which flies in mid-summer in England. These butterflies rarely spread their wings when settled on the ground or on vegetation, holding them instead, tightly erect over the back. They do, however, adjust the direction in which they are facing with respect to the direction of the sun, and even tilt the body and wings in response to the height of the sun in the sky. One explanation of this behaviour suggested that orientation and tilting were performed to minimize the size of the shadow cast by the resting butterfly and so make it less conspicuous to predators. The competing theory is that the wings are oriented so as to present the maximum surface area to the sun's rays when it is cool, thus promoting heat absorption. When the air temperature is high, the same Grayling should try to present the minimum wing surface to the sun to minimize overheating.

Robin Findlay, Mark Young and John Findlay recorded the sitting positions of wild Graylings in Wales, together with elaborate measurements of air temperature, climatic conditions and the position of the sun. Their data showed that when the sun is not obscured by clouds, the butterflies presented the maximum wing surface to sunlight at low temperatures (the "sunning" position) and the minimum wing surface to sunlight at high air temperatures ("heat-avoiding" position). Not only that, but during a long sunny day, "sunning" positions were adopted in early morning and late afternoon, while "heat-avoiding" positions were used during the hottest part of the day. Graylings also rest with their bodies closer to the ground ("ground-hugging" behaviour) in cold air and farther away ("stilting" behaviour) when it is very hot. They fly mainly in the shade on hot days and are even capable of shivering to raise body temperature in cold weather. The entomologists concluded that temperature regulation is the most plausible explanation for the behaviour of the Graylings at rest.

(Ecological Entomology, vol.8, no.2, May 1983).

5. FLY EATS TOAD.

In a reversal of normal roles, entomologists have observed the larvae of a horsefly (Tabanus punctifer) feeding on young spadefoot toads in a small

pond near Portal, Arizona. The mature tabanid larvae (2 - 3 cm long) are aquatic and normally feed on other insect larvae and aquatic invertebrates. They bury themselves in the mud bottom of shallow ponds until only their large hooked mandibles are flush with the mud surface. When the tadpoles of spadefoot toads mature in the same waters, thousands of the young toads (1.5 - 2 cm long) make for the shore, attempting to leave the water. When one of them brushes the mouthparts of a horsefly larva, it is attacked and dragged under water. The toad's blood and body fluids are sucked out, and it is invariably killed. Toads that survive to take up a terrestrial existence may eventually feed on the adult horseflies which as larvae attacked the toads' siblings. (Jackman et al., 1983. Science, vol.222, pp.515-516).

6. CYANIDE AND THE SOUTHERN ARMYWORM.

Still think cyanide is the best chemical to use in killing jars? Maybe not for the southern armyworm (Noctuidae: Spodoptera eridania). Its larvae feed on many plants but show a preference for Lima beans which contain up to 30 parts per million of cyanide in their leaves. It has now been found that armyworm larvae grow as well, or better, when small amounts of cyanide are included in their diet, and cyanide-fed sixth instar larvae can withstand doses of the lethal chemical (up to 1% KCN in the food) that would kill any other lepidopteran.

(Brattstein et al., Ecological Entomology, vol.8, no.2, May 1983).

7. BIRDWINGS.

Subscribers have recently received part 2 of volume 2 of A Monograph of the Birdwing Butterflies by J. Haugum (Scandinavian Science Press Ltd., Klampenborg, Denmark - 240 pages). This volume is on the genus Iroides, the amphrysus and haliphron species groups. As in previous parts this monograph includes keys, species descriptions, evolutionary histories, distribution maps and illustrations of wing patterns and genitalia. There are also eight photographic colour plates of the magnificent black-and-yellow patterned adults.

8. FOREST INSECTS.

Environment Canada has released a new Guide to the Insects of Eastern Hardwood Trees by A.H. Rose and O.H. Lindquist (Canadian Forestry Service, Forestry Technical Report 29, Ottawa, 1982 - \$14.95). Accounts of about 450 species of insects and mites causing noteworthy forest damage are grouped according to the species of tree that serves as food. As might be expected, the majority of these are gall-makers, beetles, flies and moths of the families Noctuidae, Notodontidae and Geometridae. Nevertheless, quite a number of the larger Lepidoptera are also treated, usually with colour plates of larvae and adults in addition to a general account of the biology. Examples are Mourning Cloak and Question Mark (on elm), Cecropia Moth (on maple), Luna and Polyphemus Moths and Tiger Swallowtail (all on birch), and the Big Poplar Sphinx Moth (on poplar). A key of the visual, flow-chart type is provided for the identification of insects feeding on each type of tree. Considering the illustrations, this book is a bargain at the price.

9. CRICKETS FOR PROFIT!

An October 1 article in the Toronto Star reports that Mel Rowe and Rose Gale of Brantford, Ontario, raise house crickets for sale at a wholesale price of 2 1/2 cents each. Their business, Mel & Rose Enterprises, is said to be the only cricket farm in Ontario. The insects are reared in glass tanks on the third floor of a warehouse, supplied with grain feed and kept at 27 deg C. Stock at any given time consists of about 5 million crickets, with 3 million shipped during the first 9 months of 1983. Customers for the orthopterans include the Metro Toronto Zoo, universities and pet stores.

REGIONAL ACTIVITIES.

1. GUELPH.

Early in November 1982, 5 people from the University of Guelph went to Clarkesville, New York, to investigate the fauna found in nearby caves. Three caves were searched and each had its own unique assemblage of insects. Cave crickets and daddy-longlegs were common inhabitants of the caves, found on the walls not too far from the entrance. Here there were also Drosophilids,

Psychodids, Culicids, Phorids, Sphaerocerids (including a new North American record) and Trichocerids among the Diptera. Farther into the caves, Heleomyzid flies were common on the walls, and where there was a pile of debris deep in one cave, we found Sciarids (including a wingless female), Collembolans, Isopods and Diplopods. Other insect families collected included Clambidae, Cryptophagidae, Leptodjiridae (Coleoptera) and Mycetophilidae (Diptera).

Above ground, the collecting was not as good due to cold weather, but an interesting specimen of the family Boreidae (Mecoptera) was taken by one of the group. This trip leads us to believe that visiting caves in other places, including Ontario, would be of value to insect collectors.

(Brian V. Brown - University of Guelph).

2. TORONTO.

The Toronto Entomologists' Association continued its usual activities during 1983, with meetings being held during the winter months at the Planetarium in Toronto. The 1983 field trip was unsuccessful due to adverse weather conditions. The butterfly season in 1983 was abnormal due to the excessively mild weather conditions during the winter affecting the whole weather pattern for the season. The Monarch butterfly was late in the annual migration, and the numbers were much reduced over the Province. There were no records from northern Ontario at all. Studies were continued with respect to Coenonympha inornata and Lycaeides melissa and some interesting facts emerged. The former was recorded from much further east than it had appeared previously, being found in Huron County near Goderich. The Karner Blue appeared to maintain the same number of individuals near the Pinery in Lambton County. However, the location is now offered for sale, presumably for some kind of development, and plans are in progress to see if the piece of land concerned may be purchased and preserved. The other location where the Karner Blue has been recorded somewhat intermittently is the Forest Nursery area near St. Williams in Norfolk County, but the colony there seems very precarious, if indeed in existence at all. Many butterflies were not seen at all in Ontario during 1983, and others were apparently greatly reduced in numbers. Other interesting records included Euphydryas phaeton from near Windsor.

An exhibition is planned by members for Saturday, March 24th, in the Royal Ontario Museum, and it is hoped to make this an annual event, with the

aim of eventually making it a public show. The annual Summary of Lepidoptera encountered in Ontario appears to be very popular, and Quimby Hess is to be congratulated on the amount of work he puts into it.

* * * * *

A Note on the Royal Ontario Museum

From its inception the Toronto Entomologists' Association has had the support of the Museum's Department of Entomology to become a focal point to encourage the interests of serious amateur entomologists. Members know that the collections of the Department are accessible to them for inspection, and special efforts are made to provide access to the collections at any regular meeting of the Association for which such interest has been expressed. The Museum collections now comprise one of the most extensive holdings of Ontario Lepidoptera available, due in no small way to the efforts of the Rev. J.C.E. Riotte, who was also one of the founders of the TEA. Recognizing that the Museum collection provides permanent protection for significant records, several TEA members have deposited specimens in it.

To encourage deposition of significant collections of insects, the Department in recent years has been able to offer receipts acceptable as a tax reduction for the fair market value of specimens deposited because the Museum is registered as a charitable institution. Subject to certain conditions specified by Revenue Canada, the value of this tax receipt is deductible from net income up to 20% per year for five years.

Recently, the Department has had experience to indicate that outstanding collections of insects or of insect photographs, certified as significant cultural property by the Canadian Cultural Property Export Review Board, can be donated to the Royal Ontario Museum in return for a tax receipt for the fair market value of the gift which is deductible from 100% of the taxable income, and with provision to carry forward any unused part of the receipt for five years. Moreover, under these conditions capital gains realized on the gift are not taxable. Submission of an application to the Cultural Property Review Board is made by the Museum; collections need not necessarily be of Canadian materials, but their significance to scientific or educational activities in Canada must be demonstrated.

These provisions enable owners of important material to ensure long-term protection, use and appreciation of their collections, to enrich the Museum's resources for research and education, and to receive fair market value as a deduction from taxable income. Anyone interested in learning more about the arrangement should contact Glenn Wiggins (416-978-8743) or David Barr (416-978-3793) of the curatorial staff in the ROM Department of Entomology.

FUTURE PROSPECTS

Some of the contents of this issue do not deal with insects in Ontario, but were included due to the fact that insufficient information in the way of articles was forthcoming from the readers of previous issues. In order to have a publication of any kind, there must be some input, and this appears to be very difficult to obtain. I cannot convince myself that no-one is working on any interesting projects in the field of 'Amateur Entomology' in Ontario.

This will probably be the last issue of this publication unless more material is forthcoming. It will be sad to drop a publication which has had the financial support of the Entomological Society of Ontario, and would appear to be an ideal vehicle for the dissemination of interesting information for both amateur and professional entomologists.

If you wish to contribute anything to this publication, please send it to the following:

Alan J. Hanks,
34 Seaton Drive,
Aurora, Ontario,
L4G 2K1,



ONTARIO AMATEUR ENTOMOLOGISTS NEWSLETTER

VOLUME 1, NUMBER 1

APRIL 1989

Rebirth of a newsletter

Briefly, in three short notes, I will tell you what this Newsletter is all about.

The E.S.O. was spearheaded in 1863 by a young divinity student from Toronto (Charles Bethune), and a pharmacist from London (William Saunders). The Society's rooms in those early days were open to interested youngsters as well as adults, and meetings took place around tables covered with notebooks, reports and cigar boxes full of insects. The people at these meetings were mostly amateurs. Even after 25 years the Society only had two professional entomologists (Baker, 1939).

At present, the E.S.O. is a full-grown professional society answering to the demand of its time. This is why in 1981, Steve Marshall and Alan Hanks saw the need for something to favor the unity of amateur entomologists in Ontario. That something was called "The Ontario Insect Collectors News" and was published for three issues, until lack of material coming forward for the Newsletter brought it to an end. This was not a complete end as you can see since you are holding in your hands a copy of the "Ontario Amateur Entomologists Newsletter". The title has changed, so has the format only to keep pace with new vision of what the purpose of the Newsletter will be.

The objectives of the Newsletter will be to exchange information between amateur entomologists of all ages, help and encourage those which are interested in entomology. Also, to bring knowledge on how to observe or collect insects and their close relatives and permit the professional entomologists to share their knowledge with amateurs. The last

objective will also permit the professionals to spend some time with what primarily attracted them to entomology.

Finally, this project might be the beginning of what could become the O.A.E.A., Ontario Amateur Entomologist Association. So, with the participation of everyone, this Newsletter will become the backbone of amateur entomology in Ontario. For any comments, ideas, advertisements or articles, no matter how small, to the next issue which will be published at the beginning of November 1989, would be greatly appreciated.

Please write to:
Richard Gagne
O.A.E.N.
Dept. of Environmental Biology
University of Guelph
Guelph, Ontario
N1G-2W1.

INSECT COLLECTING AT SPRINGWATER CONSERVATION AREA MAY 27-28, 1989

Many entomologists, both amateur and professional, share a great interest in collecting insects. There are many good reasons for this, including tradition, the pleasure of being in the field, the excitement of making new discoveries, or the realization that there is just no better way to learn about insects. Whatever their reasons for collecting insects, either for a permanent collection or just for field study of living specimens, insect collectors have a common interest in discussing good places to collect. I hope future issues of this Newsletter will contain useful information on collecting insects in Ontario, and would like to offer a few comments on a good collecting site that several of us plan to visit this spring. You are welcome to join us, so if you are interested in collecting insects in Carolinian Canada in the last weekend of May, read on!

As you are probably aware, collecting of any animals or plants is strictly prohibited in all national and provincial parks. Even though insect collecting has no impact on insect populations, this rule seems fairly inflexible, so we are forced to look for interesting habitats outside the parks system (or risk burial in red tape). Fortunately, one of the finest mature deciduous forests in Carolinian Canada belongs to the Catfish Creek Conservation Authority, an organization which has been highly supportive of research on the insect fauna of southern Ontario. They have authorized us to organize a group collecting trip there on the last weekend in May. "Organize" is a bit cont'd on next page

IN THIS ISSUE

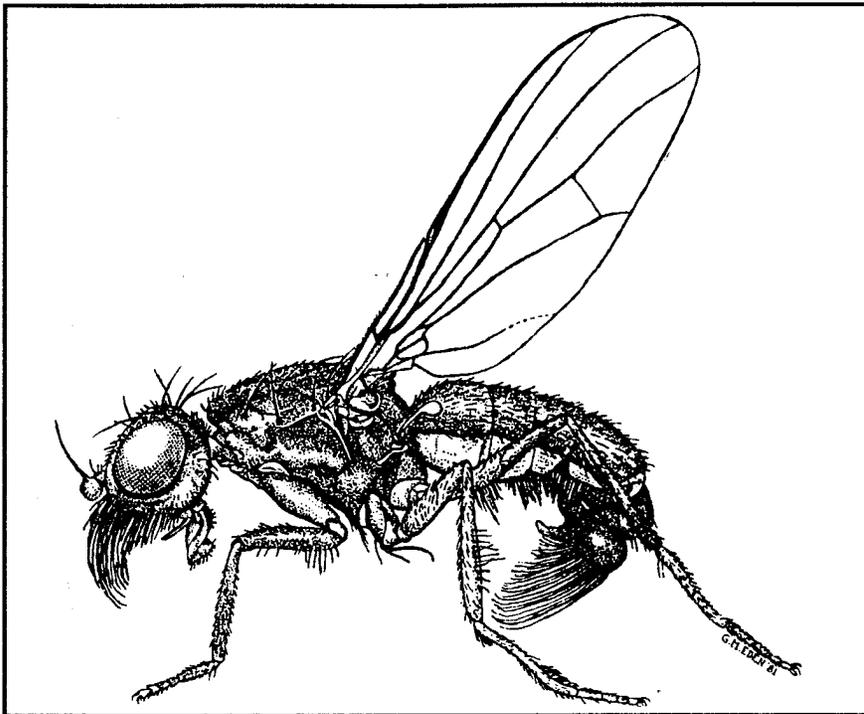
- Rebirth of a Newsletter
- Springwater collection trip
- The learning corner
- Field macrophotography
- Tropical nightmares-the dark side of collecting
- Collecting in the Dominican Republic
- Miscellanea-a poem
- Insect seasonality
- Insect perspectives
- Crossword Puzzle
- Subscription Information

too strong a word, since all we will do is tell you that some of us will be there all day Saturday and part of Sunday, collecting insects. I'll probably walk the trails from 9-12, come back to the camping area for lunch and take a look at the morning's catch, then do the same in the afternoon. There will be an opportunity Saturday night to look over the insects collected, and we might do some night-lighting. Campsites at the conservation area are \$9.00 per site, and you are responsible for arranging your own site. The Conservation Authority will provide firewood. It is expected that anyone associated with our group will show extreme consideration for the habitats we are allowed to study (if you turn over a log, put it back the way it was; don't damage any vegetation, etc), and it is hoped that significant records will be deposited in the University of Guelph Collection.

In addition, to its developed camping area, with over 120 sites, Springwater has a pond, a stream, and a fantastic 150 hectares of mature forest. The forest, including massive hardwoods and pines, should harbour many species not normally collected elsewhere. The last time I was there (a couple of years ago) I collected dozens of species under a newly fallen tree. That particular collection included a brand-new species of wingless fly and some rarely collected beetles.

Springwater Conservation Area is easy to find, 10 km southeast of St. Thomas and 5 km southwest of Aylmer. It is 3 km south of Orwell on County Road 35. Bring your net, bottles, pinning box, pins, and whatever else you need for a day or weekend's outing.

FOR FURTHER INFORMATION, OR TO LET US KNOW YOU WILL BE JOINING US, CALL ME (STEVE MARSHALL) AT (519) 824-4120 EXT. 2720, RICHARD GAGNE AT (519) 823-8773 OR JOHN SWANN AT (519) 824-4120, EXT. 2582. THE NUMBER OF THE CONSERVATION AUTHORITY IS (519) 773-9037.



The Learning Corner for Insect Fauna

The fly seen here was drawn by Gary Eden for the front page of the first issue of the "Ontario Insect Collectors News" in 1981. It belongs to the genus *Amphipogon* of Mycetaulini tribe of the family Piophilidae.

Family Piophilidae Diagnosis

Diagnosis Moderately small (length 3.0 - 6.0), black to dull brownish-yellow flies, somewhat similar in general appearance to dung flies (Scatophagidae) and flutter flies (Pallopteridae). Body usually with strong black bristles, sometimes densely hairy. Frons usually yellow on anterior half or more. Wings frequently glassy hyaline, commonly with brown markings.

The genus *Amphipogon* has only two described species, one from the Palearctic, *A. flavus* and one from the Nearctic, *A. hyperboreus*. The biology of this genus is not very well known, only that the larvae live and most likely feed on fleshy fungi.

Reference

McAlpine, J.C. 1977. A revised classification of the Piophilidae, including Neottiophilidae and Thyreophoridae (Diptera: Schizophora). *Memoirs of the Entomological Society of Canada* No. 103.

This section of the Newsletter will be repeated at each issue, naturally mentioning a different family at each time. So if you have some talent in drawing insects or their related friends, we sure would welcome the input from a different artist next time with or without the concerning literature. If you are interested, send the material to Richard Gagne, O.A.E.N.

A FIELD TECHNIQUE FOR INSECT MACROPHOTOGRAPHY

by David C.A. Blades

Anyone who has collected insects is aware that preserved specimens pale in comparison to the beauty of the live insect. The only method available at present to preserve the color and form of many insects is macrophotography. In this article I will introduce a technique for photographing insects that is easy to master, inexpensive, and yields photographs of excellent quality.

The basic outfit required for this technique is outlined below.

Required

1. Single lens reflex camera with a flash synchronization outlet and manual focus capability.
2. 50mm (or longer) focal length lens.
3. Extension tubes (rings) with automatic aperture coupling.
4. Small, low-powered electronic flash and synchronization cord.
5. Kodachrome 25, 64 or Fujichrome 50 slide film.

Optional

6. Flash bracket (highly recommended).
7. 2X teleconverter (a cheap one is fine).

The advantages of low speed (ASA or ISO) film are twofold - slow films are fine-grained, giving increased color saturation and allowing greater enlargement. Secondly, slow speed films bring the electronic flash closer to the subject thereby creating more favorable (ie. natural) lighting. Normally, slow speed films produce blurry images because of slow shutter speeds required for their use. However, electronic flash durations are shorter than 1/3000 sec. - eliminating blur in all but the fastest movements (like hummingbird or bumblebee wings). Another advantage of using a flash is that it allows for the greatest possible depth of field. In macrophotography, depth of field is critical because it decreases drastically with increased magnification. Maximum depth of field is achieved by "closing down" the lens aperture to minimum (usually f16 or f22).

The following paragraphs outline the steps necessary to determine the proper exposure settings for your lens, film and flash combination. Once you have determined the proper flash to subject distance for the f-stop and film chosen, you will never have to do this little bit of math again!

Flash Macrophotography:

Definitions, exposure calculation, and tips on use

Magnification is the relative size of the image to the actual object ie. an object 10mm in length appearing 20mm in length on the film is magnified 2X.

FORMULA 1:

$$\text{MAG. OBTAINED} = \frac{\text{ADDED EXTENSION}}{\text{LENS FOCAL LENGTH}}$$

$$\text{eg. } \frac{50\text{mm extension}}{50\text{mm lens}} = 1\text{X magnification}$$

Exposure calculations:

- * Set flash on "manual" position.
- * Use smallest lens aperture ie. f16 or f22.

FORMULA 2.: Guide Number Calculation (GN).

- i) Pick film speed (ISO) on flash exposure chart of flash unit.
- ii) Multiply f-stop by corresponding distance in feet to obtain guide number rating of flash unit.

*****Macro-flash rule: Divide this guide number by 2 for remaining calculations*****

FORMULA 3.: Effective Aperture (EA) ie. real f-stop after adding extension to lens.

$$\text{EA} = \text{f-stop on lens X (magnification + 1)}$$

-pick magnification of 1 for simplicity.

FORMULA 4.: Flash to Subject Distance (FD).

$$\text{FD} = \frac{\text{GN}}{\text{EA}}$$

Example calculation

Film = ISO 25, Flash GN (ISO 25) = 40, f-stop = 16, 50mm lens, 50mm extension.

1. Magnification = $\frac{50\text{mm extension}}{50\text{mm lens}} = 1\text{X}$
2. GN rule - $\frac{40}{2} \text{GN} = 20$
3. EA = f16 X (1 + 1) = f32
4. FD = $\frac{20}{32} = 5/8 \text{ foot} = 7.5 \text{ inches flash to subject.}$

Now focus camera (at 1X magn.) on an object and hold flash computed distance from subject at a 45 degree angle. Note where flash is relative to lens. This flash position (the "reference point") will yield correct exposures at any magnification between 1/4X and 2X. Now shoot a test roll of varying flash distances and f-stops, noting all relevant information. I suggest that you make a table of flash distances for all flash/film/lens combinations you are likely to use and keep it in your camera bag.

Do's and Don'ts

A. Approach your subject only after you are sure of the following conditions:

1. The film is wound (ie. the shutter is cocked).
2. The flash is charged and positioned over the reference point.
3. The f-stop is set to minimum (or calculated) aperture.

cont'd on next page

cont'd from previous page

4. The shutter speed is set at (or below) flash sync speed.

B. Point lens at subject, then move eye to viewfinder.

C. Move camera until focus is achieved, press shutter. The focus ring on the lens should only be used to make fine adjustment of image magnification (turning the focus ring extends or shortens the lens, thus changing the focal length to extension ratio).

D. Composition

1. Have the eyes of subject in sharp focus.

2. Try to get your subject against a background, otherwise your background will be black.

3. Choose a lighting angle that will best illuminate your subject without creating distracting shadows or an unnatural look. An angle of 30-60 degrees overhead of subject is the best in general, but feel free to experiment whenever a subject is particularly cooperative.

4. Avoid "faking" your photos- shoot them as you find them.

5. Learn about your subjects and respect nature.

Appendix

Use of teleconverter:

1. Placed between lens and tubes, a teleconverter doubles the focal length of your prime lens. This reduces magnification and increases working distance. Recalculate flash distance for the new focal length and remember to account for the 2 f-stop increase (eg, f16 becomes f32) added by the teleconverter.

2. Placed between tubes and camera body, a teleconverter doubles magnification without losing working distance and yields superb results. Opening-up the prime lens from f16 to f8 will compensate for the doubling effect or the flash distance can be recomputed for the two stop increase.

References

Shaw, J. 1984. *The Nature Photographers Complete Guide to Professional Field Techniques*. Amphoto. N.Y.

Shaw, J. 1987. *Closeups in Nature*. Amphoto. N.Y.

TROPICAL NIGHTMARES - THE DARK SIDE OF COLLECTING

by Terry Wheeler

Entomological newsletters seem to be filled with glowing accounts of rewarding collecting expeditions to tropical climes. We frequently read about the 27 new species found under one rock, the quiet little hotel where everyone is friendly and beer is cold and free, and the excitement of a perfect specimen of a rare butterfly at the end of a two hour stroll through lush rain forest (which, incidentally, is never hot, humid, or sticky). Armed with these images and my suitcase full of entomological impedimenta, I recently made my first tropical collecting trip to the breezy, sun-drenched isle of Jamaica. Somehow things seemed to go horribly wrong; I had blundered into the Dark Side of collecting.

I realize, in retrospect, that none of these aforementioned expeditions could have been as wildly successful as they appeared. Perhaps it is a case of selective memory loss, with the mind blocking out the more horrifying aspects of the trip. On the other hand, maybe these people were simply much more fortunate than I.

In the interest of space I will not elaborate on the interrogation by cus-

toms officials on the contents of my collecting bag; nor will I bore you with the details of the earthquake, the robbery, or the auto accident, since these incidents have little bearing on the eventual failure of the trip. Instead, I will move directly to the hurricane.

Since my interest lies mainly in saprophagous Diptera, I had spent much of the first week setting out baited pitfall traps and flight intercept traps. The general collecting that I did during the first few days was largely uninspiring, due to a lack of undisturbed habitats and some very dry weather. By the 11th of September, however, I found myself at Whitfield Hall, a coffee plantation and guest house located at 4200 feet in the Blue Mountains. After a full day setting traps and some encouraging sweeping we received word that a tropical storm off the east coast had been upgraded to a hurricane. The ensuing evacuation from high ground cancelled my plans for collecting at the peak of Blue Mountain and sent us quickly back to Kingston. The following day Hurricane Gilbert devastated most of the island, especially

those portions of the island covered with insect traps. Two weeks later the gas rationing and curfew had been lifted and roads cleared (more or less) and I returned to the high country. My traps were conspicuously absent. The trees they were under and the soil they were on were also, for the most part, absent as well.

Looking back, the complete loss of all my traps was not the most disappointing part of my trip. This came during the hurricane itself. We were waiting out the storm with some friends in Kingston when the majority of the roof lifted off the house. Actually not all of the roof was lifted, one beam managed to fall inwards...onto my Schmitt boxes.

For those of you contemplating a tropical collecting trip, may I suggest sturdy hardwood Schmitt boxes. The folding cardboard models, although easy and compact to transport, just do not hold up well to a good cave-in. Also, if any of you are in Mexico this spring and find a yellow plastic garbage bag washed up on the beach I would appreciate receiving at least the Diptera portion of the catch.

Collecting in the Dominican Republic

• Part One

John Swann

Every insect collector I know gets a certain glint in their eyes when you ask them about collecting in the tropics. My first chance to experience the tropics was this January, when I went on a two-week collecting trip to the Dominican Republic with Dr. Steve Marshall from Guelph, and Dr. Lubomir Masner from BRC. Of course, prior to the trip, I had never been south of Point Pelee and could not understand a word of Spanish, but I jumped at the chance to go.

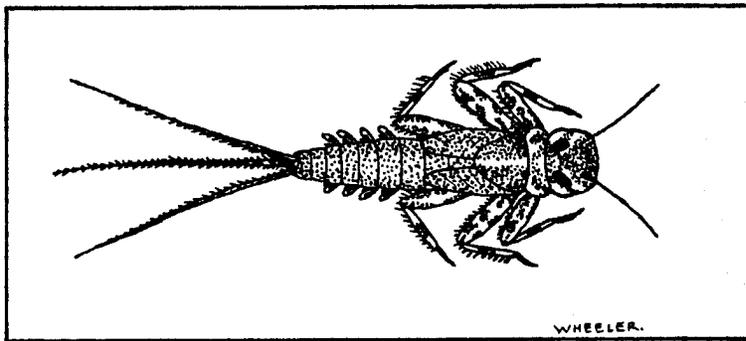
Most of our time collecting was spent in two locations: Pico Duarte, in the Cordilleras; and Cabo Rojo, in the Sierra Baoruco. Originally, we had intended to go to Cabo Rojo first; however, we had been advised that we had to get collecting permits from the National Parks Service in Santo Domingo for both places. After losing an entire day getting through government red tape, we ended up going to Pico Duarte first since they would not give us a collecting permit for Cabo Rojo until the following week.

The trip to La Cienega, at the base of Pico Duarte, was an experience I won't soon forget. We ended up taking local buses and taxis up the mountain roads. The taxis in the mountains usually were beat-up, rusted-out, little Toyota pickup trucks. At one point there were twelve of us in the box of a truck with all our luggage and collecting gear, plus several 50 lb bags of grain for some of the locals. Not wanting to go to Manabao with only a partially full load the driver ended up with three more people in the cab and had three others sit on the cab roof.

When we had originally planned the trip we were told that January was the start of the dry season in the Dominican and we could get to the top of the mountain in a day since the trail would be dry. Of course none of

this turned out to be quite right. While it was supposed to be the start of their dry season/winter, it rained at least part of every day that we were there. As well, it would have taken four days to go up Pico Duarte and back and the trail was so muddy that you ended up covered in mud half way up to your knees. The thing that surprised me the most was the "lack" of insect activity even though the temperatures were comparable to late spring in southern Ontario. All of the park rangers told us that it was abnormally cold and wet while we were there but even so it became obvious that the local fauna just requires much higher temperatures that are comparable to Ontario fauna.

When we went there for the first four days we set a series of malaises, flight intercepts and pan traps to empty at the end of the two weeks. Then each day we went out collecting in the forest. No doubt, a lot of my friends had visions of me sitting on the beach all day, staying in high class hotels and eating in fine restaurants, and basically they were right. Take La Cienega for example. We stayed at the ranger station and hikers cabin which was pretty high class. At night we slept in our sleeping bags on the hard plank floor with cockroaches and mice running around the room. That did not bother me. The fact that with all the heat and humidity our sleeping bags started to mold after the first day did not bother me. The only thing I found a little bit hard to handle was eating cold canned sardines on dry bread for breakfast along with a bottle of Coke. After three days of periodic rain we gave up collecting at La Cienega and made the three-hour hike out to Manabao to catch a taxi back out of the mountains and head to Cabo Rojo. As things turned out, the collecting there, even in January, would more than make up for any disappointment I got from Pico Duarte.



Drawing by Terry Wheeler

MISCELLANEA

- Retrieved from a Waste-Paper Basket

*Cricket balls are red and round,
So make the cricket skip and bound,
Moth balls, however, are six-sided
So walks the moth its legs astrided!*

*So now you know the reason why
Moths mostly will prefer to fly,
Whilst crickets generally are found
Merrily chirping on the ground!*

D. Keith McE. Kevan

Insect Seasonality

Neil Morris

In Ontario, we are fortunate to be able to experience the well marked seasonal changes that occur in our environment. Many of the changes or signs of change are well known and obvious, but the changes in the abundance and behavior of the insects can often go unnoticed, even by collectors. Taking note of the seasonal changes of insects not only helps add to a collection but it also adds to the understanding of insect biology and life cycles.

Most people associate the arrival of the robin and other migratory birds or perhaps the emergence of skunk cabbage with the arrival of spring. Close inspection will also reveal changes in insect abundance and activity that occur as winter comes to an end. One of the first insects to be noticed is the snow flea. This minute insect is not really a flea but rather a Collembola, better known as springtails. The snow flea spends the winter in decaying organic material or in soil beneath the snow. As the snow begins to melt, these insects come to the snow surface to prevent from drowning in the meltwater. Large numbers of these tiny, dark insects appear as soot on

the snow surface. This does sometimes occur on warm days in winter but is prominent with the spring thaw.

Other insects that appear in early spring are the winter crane flies. Like the snow fleas, these flies can be seen on the warmer days of winter. However, their peak activity occurs in the fall and in early spring. There are actually many fly species from various families that spend the winter as adults or well-developed pupae that become active or emerge as soon as spring temperatures arrive. The same applies to many other types of insects including beetles, true bugs, ants, and others. So, as spring comes in, keep a watch for these insects.

Later in spring, we start to see the mayflies. The seasonal aspect of these insects is well known, hence their name. While not all mayflies emerge in May, many do emerge in the spring and often in large numbers. The adults usually live for only a day or two so it is a good idea to take note of their short, seasonal presence.

The seasonality of the mosquitoes, although perhaps annoying, is also worth following. The first ones to appear usually come around mid or late May. These are the spring Aedes or snowmelt mosquitoes. These insects over-winter as eggs and the meltwater in spring supplies the aquatic habitat needed for development to adults. Next come the sum-

mer Aedes. These also spend the winter as eggs but require slightly warmer water temperatures in order to develop. The adult mosquitoes first appear around mid-June. By August, peak populations of Culex mosquitoes occur. These insects spend the winter as adults and lay eggs during the spring and early summer which give rise to adults later in summer. This is at the same time as the emergence of the cicadas. For a few weeks of July and August, the peak of summer heat is signalled by the high singing of the dog-day cicada. When the singing has faded away, summer will be ending and fall on its way.

During the beginning of fall, there is an increase of encounters with the monarch butterflies as they begin their southward migration to warmer climates. Autumn is also the time for flights of winged male aphids in search of mates so that eggs can be laid for the winter. And when the winter crane flies come out in the fall, winter is not too far away.

Following the changes of insects throughout the year is an excellent way to observe more insects and to learn about their lives. You can also try to relate the seasonal cycles of insects to the presence of plants, birds, mammals, or other insects. At any rate, when the seasons change, keep your eyes open. There is a lot to be gained.

Insect Perspectives

Alan Watson

Well, have you seen it? I was at the Guelph Eaton's Centre last weekend (March 4-5), and I couldn't have missed the Raid sponsored "The Incredible World of Bugs Exhibit" (a collection of John G. Powers). It certainly is an impressive collection of pinned insects (plus a few other arthropods) from around the world. As I looked at it and at the people who were there a few thoughts came to my mind:

1. What is the purpose of the exhibit? There were lots of people eagerly looking at the generally large, often colourful, sometimes terrific specimens, so one of the purposes

must have been attention getting, that is, advertising. Attention of the public held, is the purpose of this attention to increase interest in insects, to enlighten people about insects and their ecological role, to shock, or to further horrify insect-phobic folks to purchase more Raid?

2. A four-page handout that was available at the exhibit had one page of identification "Identify these bugs at the exhibit", one page of "Insect Trivia", ie. "The venom of the Black Widow Spider is said to be _____ times more powerful than that of the rattlesnake" (honest!). These two pages were followed by "Household Pests" and "Insect Pest Trivia". Very little information, if any, was presented about the insects' habitats. No one

looking at the display would have learned about the relationships of insects to their environment or vice-versa. The insect displays were basically pinned specimens with names... that's all.

3. It was related to me that there was at least one "endangered" species of insect was in the display, yet their was no information about insect conservation and/or habitat conservation. How many insects are collected for collectors like Mr. Powers? What are the ecological costs of collecting "trophy" insects?

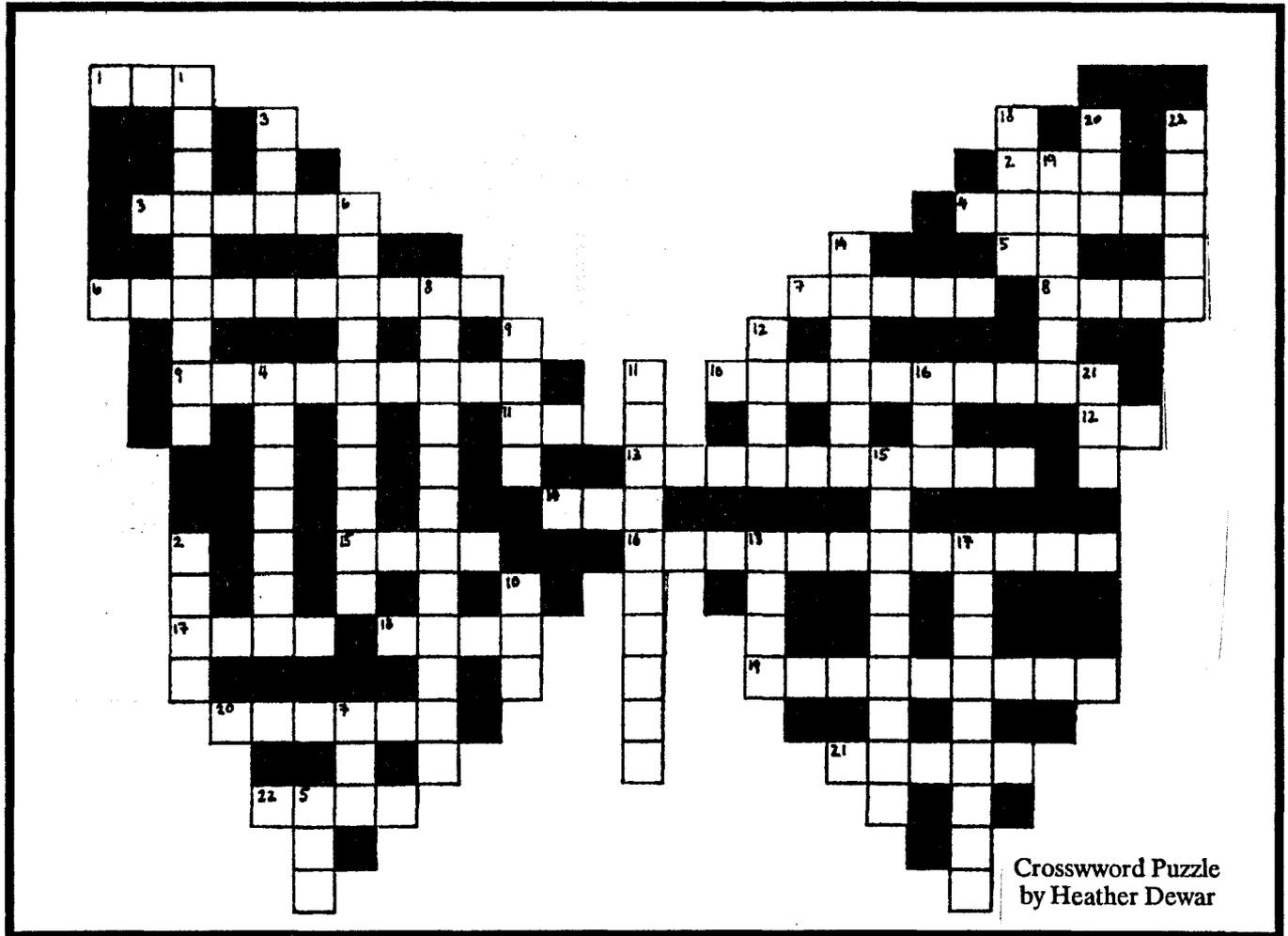
4. The insects displayed were spectacular! Colourful, big, grotesque, and yes, scary to some (non-insects were there too, eg. scorpions). Yes, they were real attention getters.

they were real attention getters. "Kinda makes the insects around here sorta plain, and bothersome don't it? Yup, easier ta zap 'em cuz, ya know, there's real pretty ones and more interestin' ones other places."

My feeling is that it is important to help the general public learn more about insects and their ecology including the inter-relationship be-

tween people and insects. That is, that insects play a very important role in the ecosystems of the world and generally are not the dangerous, bothersome, ugly, yucky, gross, nuisances that they are often portrayed to be. Insects should be presented to the public as more than separate entities pinned in glass topped cases and presented in a

"freak" show atmosphere. With the amount of time and money that has obviously been spent on this display, "Raid" (S.C. Johnson and Son Limited) could have, and in my opinion, should have, developed a more educational and interpretive insect display rather than the sensational sideshow that "The Incredible World of Bugs Exhibit" represents.



Crossword Puzzle
by Heather Dewar

ACROSS

1. Colorado potato beetle (abr.)
2. not new
3. ventral sclerites
4. cockroach genus
5. Ph.D. (title)
6. plant-eaters
7. bristles
8. relating to circulatory system
9. seed bugs (family)
10. "knee"
11. amino acid (abr)
12. egg (German)
13. egg-laying apparatus
14. we're all striving for one
15. ___ worm
16. picky eater

DOWN

1. lepidopteran
2. developmental stage
3. auditory receptor
4. cricket genus
5. Gypsy moth's preferred food
6. warning
7. in Boston even beans do it
8. Handsome fungus beetle (family)
9. foliage
10. Honey___
11. most studied insect
12. monitoring tool
13. small usually biting fly
14. abdominal appendage
15. lacewings (family)
16. Formicidae
17. naughty bits
18. ___blooded
19. immature form
20. C14H9CL5
21. rufous
22. reproductive stage

Answer in the next issue

Keep in Touch and Join the Crowd

The O.A.E.N. will be published semi-annually, with the next issue coming out at the end of september, 1989. Please, be ahead of the game and send your contributions by the end of august. For anyone who would like to be on the mailing list for the future issues, or can not stop their hands from creating or writing something or have any questions, please write to:

**O.A.E.N.
Richard Gagne
Dept. of Environmental Biology
University of Guelph
Guelph, Ontario
N1G-2W1**

**O.A.E.N.
Editor: Richard Gagne
Associate Editor: Steve Marshall
Production Manager: Gary Eden
Contributors:
Neil Morris
John Swann
Terry Wheeler
D. Keith McE. Kevan
Alan Watson
Heather Dewar
David Blades
Steve Marshall**

Ontario Amateur Entomologists Newsletter
Department of Environmental Biology
University of Guelph
Guelph, Ontario, Canada
N1G-2W1

POSTAGE

Mail to: