

The Entomological Society of Manitoba *Newsletter*



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About the ESM Newsletter

The Entomological Society of Manitoba Newsletter is published three times per year. It is a forum whereby information can be disseminated to Society members. As such, all members are encouraged to contribute often. The Newsletter is interested in opinions, short articles, news of research projects, meeting announcements, workshops, courses and other events, requests for materials or information, news of personnel or visiting scientists, literature reviews or announcements and anything that may be of interest to ESM members.

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Editors' Comments

Happy 2016, everyone!
We're well into winter already, and time to grab a warm (or cold) beverage and comfortable chair and read about the news of your Society.

This issue brings news of the well-organized, well-attended 71st Annual Meeting, and the winners of the student awards. Once again, we have articles from Bob Wrigley on his insect-collecting adventures in Manitoba and Todd Lawton, who makes it to Arkansas and Oklahoma and back with some amazing beetles.

Two long-time ESM members recently passed away. We have an obituary of Glenn Wylie, who died in December. George Gerber died in early January and his obituary will appear in the next issue of the ESM Newsletter.

Marjorie Smith & Jordan Bannerman



President's Message

These are the days of miracle and wonder

The words “society” and “civilization” were bouncing around my head last fall after attending in quick succession the meetings of the Entomological Society of Canada and our own Entomological Society of Manitoba.

According to the Oxford online dictionary

society: sɒˈsiːti

Pronunciation: /səˈsaɪti/

1 [mass noun] The [aggregate](#) of [people living together](#) in a [more or less](#) ordered community: *drugs, crime, and other dangers to society*

1.3 (also high society) The [aggregate](#) of [people](#) who are [fashionable](#), [wealthy](#), and [influential](#), regarded as forming a [distinct](#) group in a community:

2. An organization or club formed for a particular purpose or activity: [*in names*]: the [Royal Society for the Protection of Birds](#)

civilization: ˌsɪvɪlɪzəˈʃən

Pronunciation: /ˌsɪvɪlɪˈzeɪʃ(ə)n/

1.1 The process by which a society or place reaches an advanced stage of social development and organization. *On the contrary, in every organic process, the antitheses always reflect a unified totality, and civilization is an organic process.*

The usage of “society” in Entomological Society of Manitoba that the original members had when they formed the society 80 years ago was that of a club or organization. However, these days I have been leaning towards the more common definition of society, as in high society. It is a testament to our civilization that we have the resources to allow a people the luxury of studying the life cycles of a parasite of a parasite of an insect that feeds on a weed. Some of the topics that we as entomologists turn our attention towards have enormous implications for how humans go about their daily life: honey bee colony collapse disorder, malaria vectors or emerald ash borer, to name a few. Some of the topics do not. Yet, I believe, they are excellent contributions to our society and civilization.

Having attended these meetings for literally half my life, I am still blown away by the beauty of insects, the intricate sculpture of the pronotum of *Sitophilus oryzae* (Fig. 1), the [colours reflected in a fly's compound eye](#), the [architecture of insect eggs](#) or a graph that traces the relationship between survival of *Aedes aegypti* and time when exposed to insecticidal extracts from legumes (Fig. 2). I am also astounded by how little I know. I walk into a presentation and there is a whole world that I didn't know existed. A case in point is the talk by [Jeff Marcus](#) on mitogenomic hypothesis testing in *Junonia* butterflies. We live in days of miracle and wonder. When we have



people that study the spots on butterfly wings and fifty people show up on a Saturday morning in October and drink it all in.



Fig. 1. *Sitophilus oryzae* (rice weevil) common pest of stored cereals. Photo credit Zoe Rempel

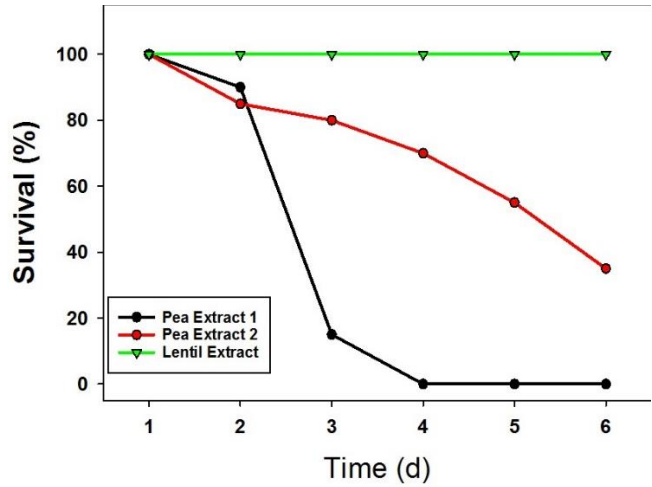


Fig. 2. The survival of *Aedes aegypti* (yellow fever mosquito) late third instar larvae exposed to legume extracts at 10 ppm.

Finally, I am reminded of the song [Boy in the Bubble](#) by Paul Simon and Forere Motloheloa:

These are the days of miracle and wonder
This is the long-distance call
The way the camera follows us in slo-mo
The way we look to us all
The way we look to a distant constellation
That's dying in a corner of the sky
These are the days of miracle and wonder

Paul Fields, President
Entomological Society of Manitoba

The 71st Annual Scientific Meeting of the ESM

The 71st Annual Meeting was held on Friday, October 23rd at the Freshwater Institute, and on Saturday, October 24th in the Department of Entomology at the University of Manitoba. Turnout was high, with 60 registered attendees.

This year's theme was "Molecular Approaches to Fundamental and Applied Entomology". In virtually all disciplines of biological research, molecular techniques are now used routinely to answer fundamental biology questions or to develop novel biotechnological applications. Many of our local entomological researchers are also using molecular techniques, and it proved very easy to find a group of eager speakers willing to share their passion for molecular biology with our audience during the Saturday symposium.

Friday morning began with the keynote address “Insect cell lines: useful models to study the mode of action of insecticides”, by Dr. Daniel Doucet from the Canadian Forest Service, Natural Resources Canada in Sault Ste. Marie. Dr. Doucet noted the difficulties in creating new insect cell lines, but also discussed their advantages when used for differential gene expression experiments. This engaging talk was followed by 16 submitted paper oral presentations (9 in the student competition), and one submitted poster presentation. Alison Partridge from Dr. Steve Whyard’s lab won the student paper competition with her talk “Characterizing putative cellular mediators of West Nile virus infections in *Aedes aegypti* and *Culex quinquefasciatus* mosquito cells” based on her M.Sc. research.

In keeping with tradition, the annual “Meet-the-Speakers Mixer” was held Friday evening, generously hosted by Pat MacKay and Bob Lamb, where ESM meeting attendees and friends gathered for refreshments and conversation. Several ESM student awards were also presented at the gathering.

The conference continued on Saturday morning, with five symposium speakers, beginning with Dr. Alberto Civetta from the University of Winnipeg. His talk “Divergent transcriptional regulation and speciation in *Drosophila*” showed how changes in the regulation of genes involved in sperm production could play a key role in speciation of this species. This was followed by the current head of the Department of Entomology at the U of M, Dr. Rob Currie, and his talk “The use of proteomics in marker assisted selection for resistance to honey bee diseases and parasites” that highlighted how proteomic analyses could complement and possibly supersede traditional phenotype selection screens to produce healthier bee stocks. Following a short refreshment break, Dr. Suresh Desai from the Department of Biological Sciences at the U of M spoke about the “Prevention of Israeli acute paralysis virus (IAPV) infection in honey bees using dsRNA”, and how RNA interference (RNAi) technology could be used to silence IAPV genes and reduce infection rates in honeybees. It was then a switch from bees to butterflies with Dr. Jeffrey Marcus, also from the Department of Biological Sciences, and his talk “Mitogenomic hypothesis testing in *Junonia* butterflies”, where he showed that comparisons of the entire mitochondrial genome of different buckeye butterfly species may be used to determine adaptations and phylogeny of high-altitude species. Finally, Scientific Committee Chair Dr. Steve Whyard ended the symposium with his talk “A molecular approach to control populations of dengue vector mosquitoes” where he described his research team’s progress in using novel RNAi approaches to producing sterile male mosquitoes for use in sterile insect technique mosquito control programs.

The Annual General Business meeting, also well attended by 32 members, was held Saturday afternoon. Many thanks to our Fundraising Committee Chair Joel Gosselin, who raised \$1,600 from our sponsors. The Scientific Committee also thanks Cheryl Podemski at the Freshwater Institute for organizing the seminar room, Ian Wise, Terry Galloway, and Sheila Wolfe for organizing registrations, Jeffrey Marcus and Kateryn Rochon for chairing the speaker sessions, and of course, thanks to all who attended the meeting!

ESM 2015 Programme Committee:
Steve Whyard (Chair)
Suresh Desai
Aditi Singh
Joel Gosselin (Chair, Fundraising Committee)

ESM Student Awards, 2015: And The Winners Are...



The winner of the **ESM Student Achievement Award** was **Kaitlyn Watts**. Kaitlyn worked as a summer technician in the Department of Entomology at the University of Manitoba last summer. Kaitlyn showed exceptional interest in Veterinary Entomology and subsequently took Introductory Entomology. She is completing her final year of a degree in Microbiology at the University of Manitoba.

The **Orkin Award** was won by **Erin McNally**. Erin worked as a student research technician in 2014 and 2015 in the Department of Entomology at the University of Manitoba. She completed projects on ectoparasites on birds including presenting a poster of her work at the Annual Meeting of the ESM in 2014. Erin has a strong interest in entomology, demonstrating originality and industriousness throughout her time in the Department of Entomology.



The **ESM Graduate Scholarship** was awarded to **Aldo Rios Martinez**. Aldo is enrolled as a MSc. candidate in the Dept. of Entomology at the University of Manitoba and is being supervised by Dr. Alejandro Costamagna. Aldo's research focuses on the role of environmental factors inducing wing development in the soybean aphid. Aldo presented a paper on "The effects of crowding and host-plant quality on soybean aphid wing induction" at the 2015 Annual ESM Meeting.

The **President's Prize for best oral presentation** at the 2015 Annual Meeting was **Alison Partridge** for her paper "Characterizing putative cellular mediators of West Nile virus infections in *Aedes aegypti* and *Culex quinquefasciatus* mosquito cells". The paper described work Alison completed for her M.Sc. degree at the University of Manitoba, in the Department of Biological Sciences under the supervision of Dr. Steve Whyard.



IN MEMORY

H. (Harold) Glenn Wylie, 1927 - 2015

Glenn Wylie, long-time member of the ESM, died peacefully on December 1, 2015 in Winnipeg, Manitoba, at the age of 87. He was predeceased in 1986 by his wife, Jean Mary (nee Hodges), whom he met in England and married in 1953 shortly after graduating from Oxford University.

Glenn's interest in biology began in his younger years while he worked on the family farm in southwestern Ontario. He graduated from the University of Toronto in 1949 with a BSc, then spent a summer with Agriculture Canada where he developed an interest in entomology. He was granted a PhD degree in entomology from Oxford University, England, in 1953.

Glenn was employed for 37 years by Agriculture Canada as a research scientist specializing in the biological control of insect pests. During this time he resided in Belleville, Ontario and Bridgewater, Nova Scotia and for several years in England, France and Switzerland before transferring to the Agriculture Canada Research Station at the University of Manitoba in Winnipeg in 1972. At the University of Manitoba, Glenn served as an Adjunct Professor in Entomology for post-graduate students until his retirement in 1987. Glenn had a long and productive career as a research scientist, making valuable contributions to Agriculture Canada's ability to cope with entomological problems in Canada. Glenn was granted honorary membership to the Entomological Society of Canada in 1987 for his outstanding contribution to the science of entomology. Glenn was also granted honorary membership to the Entomological Society of Manitoba. Glenn was a humble and giving man, and was quick to share his time, knowledge and kindness with others.

MEETING ANNOUNCEMENTS*

Annual Meeting of the North Central Branch of the Entomological Society of America
Cleveland, Ohio, 5-8 June 2016

XXV International Congress of Entomology

Entomology without Borders

Orlando, Florida, 25-30 September 2016

Webpage: <http://www.ice2016orlando.org>

Entomological Society of Canada Annual Meeting 2016

Annual Meeting of the Entomological Society of America 2016

These meetings will be held in conjunction with the 2016 International Congress of Entomology in Orlando, Florida.

The Third Hemipteran-Plant Interactions Symposium

Madrid, Spain, 4-8 June 2017

<http://www.hpis2017.csic.es/>

*If you have a meeting you would like listed in the next ESM Newsletter, contact Marjorie Smith or Jordan Bannerman with the details by **15 April 2016**.

Surveying Manitoba Arthropods in 2015

by Dr. Robert Wrigley

Like many entomologists after the long winter period, I am keen to head into the field in pursuit of favourite types of insects and other arthropods. Being retired now offers me great flexibility on when and where to go, and I managed to visit over 25 sites in various parts of southern Manitoba in 2015, selections of which are described in this article. At least 400 species (many noted below) were collected and temporarily preserved in alcohol or on cardboard mounts, awaiting preparation and identification. Almost all of the species noted below may be viewed on bugguide.net.

Several visits (day and night, in spring, summer and fall) to Labarriere Park south of Winnipeg produced a surprising number of species and over 400 specimens. In late April and May, as melting snow drifts and rains left the riparian forest soil saturated, the coppery-coloured ground beetle *Carabus meander* and the rove beetle *Dinothenarus badipes* were the only large insects active at night; the former was often seen chewing on earthworms at the edges of puddles. Two enormous Fishing Spiders (*Dolomedes tenebrosus*) were captured on the base of an elm tree close to the La Salle River. In the past, I have observed years when the large *Calosoma frigidum* ground beetle reached astonishing numbers in late spring in this forest, active both day and night, but in recent years it has been scarce. This is one of the caterpillar hunters that climbs all the way up into the tree canopy to feed at night. *Calosoma calidum* is also found here in the adjacent agricultural fields, and I once made the error of holding one too closely to my face while examining the lovely red pits in the elytra. The beetle sprayed defensive chemicals which blinded me for several minutes, causing considerable pain and copious tearing.

In late June in the Park, four species of small long-horned beetles (Cerambycidae) were found on flowers -- *Anoplodera pubera*, *Acmaeops proteus*, *Cyrtophorus verrucosus*, and *Oberea tripunctata*. *Curculio* acorn weevils (four species occur in the province), including several mating pairs, were taking advantage of the abundant mast crop this year. I swept up specimens of two species of Tumbling Flower Beetles (Mordellidae), meadow plant bugs (*Leptopterna dolobrata*), and a Poplar and Willow Borer Weevil (*Cryptorhynchus lapathi*) -- the latter on willow shrubs. Four other species of minute weevils were sent to the Canadian National Collection for identification. Black and red soldier beetles (*Cantharis aneba borealis*) and yellow soldier beetles (*Cantharis rufa f. rufa*) were abundant on several kinds of flowers. The latter species is the first record for the province; I also recorded it this summer in Birds Hill Park. Concentrating on the forest edge, I came across a nice series of the Ravenous Leaf Beetle, *Orsodacne atra*. Sweeping the grass-sedge bank of the La Salle River produced two large, attractive Banded Garden Spiders (*Argiope trifasciata*), and numerous shiny-green, long-legged flies, *Dolichopus* (Dolichopodidae). This fly is remarkable in that the male sports a conspicuous tuft of setae on each fore-tarsus -- a male secondary-sex character employed during courtship.

On the sunny (25°C) afternoon of September 19 in Labarriere Park, four common species of ladybugs were taking to the air continually, and countless numbers were observed resting on vegetation. These were *Hippodamia convergens*, *H. tredecimpunctata*, *Coccinella septempunctata*, and *Harmonia axyridis*; the latter occurring in two forms -- dark-orange individuals with the usual 10 spots on each elytron, and yellow individuals with few small or no

spots. I had surmised earlier in the day that there would not be many insects active this late in the year, but such was not the case. Almost every sweep of the net along the riparian-forest edge produced one or more species of ladybugs, tarnished plant bugs (*Lygus lineolaris*), flea beetles (Alticini), the Striped Cucumber Beetle (*Acalymma vittatum*), damselflies (e.g., *Ischnura verticalis* and *Enallagma hageni*), and many other species.

Later in the afternoon (3:00 PM), with the wind picking up considerably, I was checking the grass-shrub border along a corner of a ploughed grain field beside the same Park when I looked up to see immense clouds of tiny insects appear suddenly, which then swirled rapidly past me overhead (to a height of 15 metres), carried along with the assistance of the wind. The massive swarm extended over the field and along the forest edge for hundreds of metres, actually as far as I could see. At first I thought this was a strange place, abundance and behaviour for



Rove beetle - *Neohypnus obscurus* (photo by Tom Murray)

chironomids. To my surprise, the first sweep of the net caught over 60 rove beetles (8 to 12-mm long) which turned out to be three species -- *Neohypnus obscurus*, *Philonthus occidentalis* and *Stenus flavicornis* (in descending order of abundance) -- kindly identified for me by Drs. Ales Smetana and Anthony Davies (Canadian National Collection of Insects, Arachnids and Nematodes, Ottawa). Ten minutes later, the

insects descended rapidly, landing on the ground and forest-edge vegetation, but then minutes later returned repeatedly over the next three-quarters of an hour while I remained on site, with flights timed with extra-powerful gusts of wind. I just stood there in awe, never having observed such a spectacle before; a greatly exciting experience for an amateur entomologist. The event reminded me of the massive emergence and swarming flights of termites that I witnessed at night during the monsoons in southern Arizona, and of films of spectacular, coordinated flocking behaviour of thousands of starlings or shorebirds.



Rove beetle - *Stenus flavicornis* (photo by Richard Migneault)

Noticing some larger insects flying by in the swarm (and mainly avoiding me), I succeeded in capturing one at a time and found they were the black and brown carabid, *Anisodactylus discoideus*. There were countless numbers of these on the wing as well, coming from the field into the shady forest edge, with many, surprisingly, ascending right up into the mature deciduous-forest canopy (over 20-metres high). Occasional ladybugs joined the throng, the three kinds of insects putting on a remarkable aerial display. Sparrows, Dark-eyed Juncos and several species of dragonflies darted around, taking advantage of the enormous insect abundance. I was

uncertain whether the function of this swarming behaviour was for mating or dispersal, triggered by the warm temperature and gusty wind conditions; however I did not observe mating individuals.

Dr. Smetana published an article in 2013 in *Zootaxa*, 3652(2): 295-296, in which he described a Duluth, Minnesota collector's observations of male rove beetles, (*Oxybleptes davisii*), swarming during hot days from August to October, 2011, along a windbreak of trees and under an apple tree in a yard. The author assumed the females remained hidden in the upper layer of soil. On BugGuide.net, Patrick Coin reported a similar swarm of the same species on October 13, 2008, at Carolina Beach State Park, North Carolina; "There were just swarms of these in the air and they seemed to be landing on pine logs in this xeric Longleaf Pine forest. I thought they were gnats at first."

Dr. Anthony Davies informed me that swarming behaviour has been reported (individually) in *Oxybleptes*, *Philonthus*, and several other genera of rove beetles, particularly along seashores and forest trails in late summer to fall. He suggested that swarming rove beetles in the air and on understory vegetation; "... may be congregating for the purpose of mating, or for hibernating in one spot so that they can mate soon after their emergence in the spring. Otherwise, we really don't understand these behaviours, except that they must be attracted or excited by pheromones, since the beetles are mature and concentrated in particular areas ... The topic would make a very nice study if not for the fact that the phenomena are witnessed very seldom by humans."

What is unusual with my observation is simultaneous swarming of at least three species of rove beetles and a carabid. When I later re-entered the riparian deciduous forest, none of these beetles was present beyond about 20 metres, so the phenomenon was restricted to the windy cultivated field.

At Birds Hill Park on May 16, I collected in and alongside Shkolny Creek several species of dytiscids, carabids (*Bembidion*, *Chlaenius*), two species of water crawling beetles (Haliplidae), water striders (*Aquarius remigis*), European Skipper (*Thymelicus lineola*), other insects, and a species of large spider running on the water surface. In a nearby abandoned gravel pit with a patch of low shrubs, I came across 20 individuals of the Variegated Lady Beetle (*Hippodamia variegata*), which is an introduced species from Europe, dispersing westward in North America. Although I did not realize it at the time, these turned out to be the first records of the species' presence in Manitoba. Sweeping roadside willows revealed tremendous numbers of flea beetles, Tarnished Plant Bugs, and the clambid beetle, *Clambus gibbulus*.

On May 21, on Julius Road, east of Seddons Corner, I checked a number of ponds created by gravel extraction, but was surprised to find only one that produced a nice variety of aquatic beetles (e.g., the backswimmer *Notonecta undulata* and the haliplid beetle *Peltodytes edentulus*), and then only at the end extra-rich in submerged vegetation. This area has long been one of my choice collecting sites, and it was disheartening to see it so dramatically damaged by gravel and forestry operations; it now resembled a post-glacial landscape of till and massive boulders. It had been my preferred site for the Cowpath Tiger Beetle (*Cicindela purpurea*) which abounded here along a sandy trail each April as soon as the snow melted away. I picked up a few of these, and two species of black billbug weevils (*Sphenophorus costipennis* and *S. robustus*) in a sedge-cattail marsh. Hunters occasionally gut their deer kills here in the gravel pit, which brings in

several species of burying beetles (Silphidae) and the large rove beetles, *Creophilus maxillosus* and *Ontholestes cingulatus*.

Another site I have visited over the years while traveling west of Winnipeg on Highway 2 was the exposure of sandhills 8.5 km west of St. Claude -- the southeastern-most set of dunes of the Portage Sandhills. Back in 1973, I published a paper on the first record of the Fox Squirrel in Canada, taken by a colleague at this site, and I also recorded eastern range extensions (from the Carberry Sandhills) for the Prairie Vole and Western Jumping Mouse -- evidence of the ecological importance of this privately owned property. A small isolated and eastern-peripheral population of the Sandy Tiger Beetle (*Cicindela limbata nympha*) occurs here as well, I believe persisting in only one sand-extraction pit. Forest succession and agricultural use have all but eliminated the open-dune community. Collecting here on May 26 produced an amazing variety of insects and spiders, among them a flea beetle (possibly *Crepidodera nana*), the attractive scarab Goldsmith Beetle (*Cotalpa lanigera*) on the wing, a billbug weevil (*Spenophorus robustus*) on bulrush, the Round-headed Apple Tree Borer (*Saperda candida*) on hazel bushes, a tumbling flower beetle (*Mordella sp.*), and the light-brown carabid, *Geopinus incrassatus*, and the terrestrial hydrophilids, *Sphaeridium bipunctatum* and *S. lunatum*, hiding under dry cow pats, sheltering the last remnants of moisture from the dried-up pond.

In late May, in the Hazel Creek-Lewis Road area along Highway 15, I captured a water scorpion (*Ranatra fusca*), a haliplid beetle, the silphid, *Oiceoptomis noveboracense*, three species of tiger beetles (*Cicindela scutellaris*, *C. purpurea*, and *C. longilabris*), and noted that the scarab, *Serica tristis*, was common on low shrubs. Sweeping shrubs along the trail produced a series of the tiny (2.1-mm) Lacustrine Ladybug (*Scymnus lacustris*), and two species of checkered beetle (Cleridae: *Phyllobaenus humeralis* and *Trichodes nuttalli*). The Lewis Road ends in an abandoned forestry trail through sandy Jack Pine forest, where I have captured nine species of cicindelids over the years, including the rare, bright-green Laurentian Tiger Beetle (*Cicindela denikei*) in a grassy alder-edged trail, which is a 26-km western range extension of its customary habitat of Pre-Cambrian Shield exposures in boreal coniferous/poplar forest.

Over the years I have found here a number of species of jewel or wood-boring beetles (Buprestidae), such as the 30-mm-long *Chalcophora virginensis*, *Dicerca* and *Chrysobothris*, the latter abundant one year on Jack Pine trees blown down by high winds. These 11-mm-long, beautifully camouflaged beetles were challenging to see against the pine bark, and quick to run around the other side of the trunk or limb when I attempted to grab them. A variety of butterflies are often found here, sipping on Black Bear droppings and temporary puddles. One of my favourite butterflies, the Large or Creamy Marble (*Euchloe ausonides*), is common in May. An artificial pond (excavated by my friend Steven Bossenmaier) is a great place to observe aquatic beetles, and was inhabited on this trip by the hydrophilid beetles *Tropisternus lateralis nimbatus* (with a long sharp spine on the ventor), *Hydrochara obtusata*, *Hydrobius fuscipes*, and whirligig beetles *Dineutus nigrior* and *Gyrinus* (two species of the latter). I am always on the look-out when on the Lewis Road for Black Bears, common in this area, and twice have observed deep Cougar and White-tailed Deer tracks in the sand, indicating the predator was actively pursuing its prey.

In late May, I checked my traditional collecting site on Ducharme Road (north of Highway 15) and ladybugs again attracted my attention. I sampled several different-looking ones and when I returned home, I identified the Three-banded Ladybug (*Coccinella trifasciata*), an unspotted

Halloween Ladybug (*Harmonia axyridis*), Seven-spotted Ladybug (*Coccinella septempunctata*), Parenthesis Ladybug (*Hippodamia parenthesis*), and three Variegated Ladybugs (*Hippodamia variegata*) -- the new species to Manitoba, mentioned above. The Winter Firefly (*Ellychnia corrusca*) and a minute (6-mm) but colorful (black with red elytra) rove beetle were also quite abundant. An attractively marked Click Beetle (*Pseudanostirus heiroglyphicus*) and an ebony bug (*Corimelaena sp.*) also appeared in my sweep net. From nearby gravel-pit ponds I captured two tiny (3-mm) Water Scavenger Beetles (*Helophorus sp.*) -- 17 species of which are found in Manitoba.

Last June (2014), on Ducharme Road (north of Highway 15), low shrubs in mixed-forest openings were covered with hundreds of feeding and mating scarabs (*Serica tristis*, *Dichelonyx kirbyi* and *Hoplia trifasciata*), lightning beetles (e.g., *Ellychnia corrusca*), crane flies, and many other arthropods. In the afternoon, I collected along Highway 44 (12-km east of Whitemouth), finding the longhorn beetles *Lepturobosca chrysocoma* and *Trigonarthris minnesotana*, the tortoise beetle, *Cassida rubiginosa*, the leaf beetle, *Tricholochmaea*, and several amazing bee-mimic flies (*Eristalis flavipes*) among hundreds of bees and wasps visiting the yellow flowers of Common Tansy (*Tanacetum vulgare*). The only way I could distinguish the flies from the bees from a metre away was by the former's more-prominent eyes. This August, although the flowers were again in bloom and smelling quite pungently, the insect activity was sparse, and none of the flies was found. Perhaps the cloudy weather kept these flies inactive. I did however find other kinds of insects such as the Thirteen-spotted Ladybug *Hippodamia tredecimpunctata*, the weevils *Polydrusus formosus* and *Otiorhynchus ovatus*, plus four species of wasps and two species of bees.

As a Board member and the Chair of the Scientific Advisory Committee (on both of which Dr. Terry Galloway is also represented) for the Manitoba Region of the Nature Conservancy of Canada, I had two opportunities to travel to newly acquired properties in western Manitoba this summer. The vast Fort Ellice property near St. Lazare is a biologist's dream landscape, with relatively undisturbed mature deciduous forest, native mixed-grass prairie, cattle pasture, extensive exposed sand dunes, ponds, Assiniboine River and Beaver Creek, and numerous springs arising from the valley slopes. This and one previous visit have generated close to 200 arthropod species in 65 families (a few species have yet to be identified). Dr. Richard Westwood and Colin Murray kindly sent me their list of Fort Ellice moths and butterflies, which are included in the above estimates. In June, the SAC members travelled to five NCC properties around Riding Mountain, consisting of mixed forest, Aspen-Balsam Poplar forest, mixed-grass and fescue prairies, grass-sedge marsh, and meadows. Several hundred specimens were acquired, and significant finds will be reported for NCC's biotic inventories. Examples from the Russel Trail (NE of Inglis) were pygmy grasshoppers (*Tetrix sp.*) Dusky Sap Beetles (Nitidulidae; *Carpophilus lugubris*), and several species of damselflies (e.g., *Lestes dryas*, *Coenagrion resolutum*, *C. angulatum*, and *Enallagma ebrium*).

A water-retention pond and parking lot behind a federal office building located along Keneston Boulevard in south Winnipeg has proven to be a productive site over the years. Hydrophilids (e.g., *Hydrochara obtusata*, *Hydrophilus triangularis*, *Enochrus ochraceus*), gyrimids (e.g., *Gyrinus*), dytiscids (e.g., *Ilybius fraterculus*), carabids (e.g., *Diplocheila striatopunctata*, *Chlaenius sericeus* and *C. pennsylvanicus*), long-horned beetles (*Acanthocinus pusillus*, *Monochamus scutellatus*), elaterids (e.g., *Aeolus mellillus marginicollis*), staphylinids, several kinds of weevils (e.g., *Otiorhynchus ovatus*), Giant Water Bug (*Lethocerus americanus*), and

reduviids appear to have adapted well to these new artificial habitats, and are attracted to the night security lights. A beautiful gold-ringed cimbicid sawfly (*Abia americana*) and a Soft-winged Flower Beetle (Melyridae; *Collops vitattus*) turned up here as well.

ESM member Todd Lawton told me about finding some unusual cerambycids at King's Park in Winnipeg, and I was able to collect three specimens of *Anoplodera pubera* on the white flowers of Spirea. The many flowering plants landscaping the park hosted many kinds of flies, bees, weevils, and Bluet damselflies (e.g., *Enallagma sp.*) by the thousands.

In early June, my friend Jim Reimer and I travelled to a couple of gravel pits and the St. Malo Wildlife Management Area south of St. Malo (on Highway 59), and collected several hundred specimens of insects including an Arctic Skipper (*Carterocephalus palaemon*), whirligig beetles (*Dineutus nigrrior*) in the shallows among the cattails, water boatmen, water striders (*Aquarius remigis*), and spiders in and around the ponds. Sweeping vegetation was not as productive as expected, but then timing is everything in collecting insects. Two species of flea beetles (Chrysomelidae) and the crane fly *Tipula dorsimaculata* were quite common.

On June 25 I went on my annual trip to Spruce Woods Provincial Park, a favourite place known for its biodiversity, and where I have studied mammals and arthropods since 1970. In sweeping sedge-grass meadow and willow shrubs beside a pond near the campground, I found the damselflies, *Nehalonia irene*, *Enallagma ebrium*, and *Coenagrion resolutum*, the dragonfly *Leucorrhinia intacta*, and great numbers of the exotic (from Europe) green weevil *Polydrusus formosus*. This was a surprise because I had never seen this species before in the Park (over a 20-year period), although I had noted its presence several years ago in the Sandilands Forest Reserve in the southeastern part of the province. I wondered whether this species had recently invaded the Park, or had I just missed it before. There are a few records in Saskatchewan and even in British Columbia. A related green species (*Polydrusus impressifrons*) has also been recorded in Manitoba.



In some years, this pond in Spruce Woods remains filled from meltwater and rains to a depth of half a metre, and abounds with dozens of species of aquatic insects, which I sampled as the ice melted and all through the summer. In dry 2015, it rapidly dried out and turned into habitat for tiger beetles (*Cicindela repanda* and *C. formosa*). I always find it fascinating how quickly insects can locate and inhabit temporary habitats such as this sand pit.

I also focused my attention on Wild Rose and other flowers for Rose Weevils (*Merhynchites bicolor* and *M. wickhami*) and tumbling flower beetles (*Mordella sp.*). The Striped Leaf Beetle (*Dysonycha alternata*) was common here, as it is in many areas of southern Manitoba; there are eight species in this genus in the province. A small, day-flying moth, the Mournful Thyris, (*Thyris sepulchralis*), black with white spots, was captured while it rested on a flower. I asked Dr. Richard Westwood if he had any records of this species in the province, and he responded

that he had several records; recent distribution maps show SW Ontario and central Minnesota as the northwestern limit.

My friend Larry de March and I visited Spruce Woods on September 26 on an exceptionally warm (30°C) and windy day. Surprisingly, tiger beetles were largely absent (only 2 *Cicindela scutellaris* were seen), but a few of the usually abundant sand wasps (*Bembix americana* and *Microbembex monodonta*) were still active. Grasshoppers were diverse and abundant. Larry succeeded in photographing and identifying two sand-camouflaged species -- the Toothed Dune (*Trimerotropis agrestis*) and Mottled Sand (*Spharagemon collare*) grasshoppers; also a mating



Mottled Sand Grasshopper - *Spharagemon collare* (photo by Larry de March)



Toothed Dune Grasshopper - *Trimerotropis agrestis* (photo by Larry de March)



Saffron-winged meadowhawk- *Sympetrum costiferum* (photo by Larry de March)



Desert stink beetle - *Eleodes tricostatus* (photo by Larry de March)

pair of Saffron-winged Meadowhawk (*Sympetrum costiferum*) and the similar Band-winged Meadowhawk (*Sympetrum semicinctum*). I found a darkling beetle (*Eleodes tricostata*) walking endlessly in circles within a shallow human heel print in the sand; it failed to realize it could have easily escaped by going a mere 2-cm uphill. At the parking lot, I captured a beautiful white female Orange Sulphur Butterfly (*Colias eurytheme*), a black soldier beetle (*Rhagonycha fraxini*), and an antlike flower beetle (Anthricidae; *Stereopalpus vestitus*).

Also in late June I travelled north on Highway 6 to St. Laurent in search of the rare Crimson Saltflat Tiger Beetle (*Cicindela fulgida westbournei*), at the northeastern edge of its range (named after the town of Westbourne). Terry Galloway had informed me years ago that this species occurred here on the saltflats forming each summer in the ditches along the highway.

The high salt concentration in the soil and the passage of snowmobiles in the roadside ditch discourage plant growth, and leave patches of barren salt flats inhabited by this species. On occasion, Todd Lawton and I have found high numbers in mid-summer, but this year I was unable to observe even one individual. It is fascinating to stand at the very spot where a widespread species (south to southern New Mexico in this case) reaches the exact limit of its distribution. It is likely that the artificial salt flats along the road have allowed this species (as well as *C. t. terricola* found here) to extend its range northward.

At nearby Twin Lakes Beach on Lake Winnipeg, the vegetation (sedge-grass marsh, Sandbar Willow, Manitoba Maple, Cottonwood) and air were swarming with huge clouds of chironomids so troublesome that I had to retreat to the windy beach-side to escape them. On hands and knees I searched carefully, with success, under pieces of stranded aquatic weed and driftwood laying on the sand. I then thought of checking the edge of the metre-high, black-nylon, sand-filled, flood-control barrier that extended for kilometres along the upper beach. Here I discovered a remarkable number and variety of small insects -- weevils (e.g., *Lixus rubellus*), chrysomelids (*Zygogramma suturalis casta*, *Pachybrachis peccans*, *Disonycha triangularis*), coccinelids, histerids (*Marginotus*, *Psiloscelis*), elaterids (5 small species), buprestids (*Agrilus*), dytiscids, a haliplid (*Haliphus*), hydrophilids, staphylinids (6 species), the soldier beetle *Cantharis aneba*, the checkered beetle *Phyllobaenus humeralis*, a dung beetle (*Aphodius*), and bugs (e.g., Reduviidae). Carabids included *Chlaenius pennsylvanicus*, *Elaphrus* sp., *Amara hyperborea*, *Agonum placidum*, and four species of *Bembidion* (tentatively identified as *B. patrulele*, *B. bimaculatum*, *B. intermedium*, and *B. versicolor*). For such small beetles (3 mm), the *Bembidion* species were able to run at an astonishing speed and were quite challenging to capture with my fingers.

All these insects had sought refuge here a few millimetres beneath the sand, after having previously landed on the exposed beach. The barrier had in effect acted like a giant trap for insect life, and which also prevented countless Leopard Frogs from moving back and forth from marsh to lake. A tally of arthropods collected in 30 minutes of searching along 25 metres of the barrier was 124 specimens of about 60 species; new ones for me were the rare Winter Ladybug (*Brumoides septentrionis*) and the pill beetle, *Byrrhus americanus* (typically found in sand). I doubt I would have found even half of these species just by net-sweeping adjacent vegetation or sand sifting. Many additional species no doubt escaped my brief examination, so I plan to return next summer, and to do night collecting with a mercury-vapour light.

I then headed to a spot 5-km north of Woodlands and collected a nice series of the shiny-green fly *Dolichopus* sp, and the Aquatic Leaf Beetle, *Plateumaris*. There are 10 species listed for Manitoba, so it will be quite a challenge to identify which one(s) I have. Marsh Ladybugs (*Anisosticta bitriangularis*), which I had never come across before, were abundant on willow shrubs and in grass-sedge meadow. They were gone by the end of August, replaced on willows by *Cryptorhynchus lapathi* and *Lepyryus palustris* weevils, and numerous colourful *Calligrapha multipunctata* chrysomelid leaf beetles; evidence of the succession of insects throughout the warm season. I also made a special effort to collect many of the small and large wasps that visited flowers and hid in the grass.

In late August, I was invited to the cottage of friends on Zig Zag Island (Clearwater Bay) in Lake of the Woods, Ontario, where I made a nice collection of dragonflies, damselflies, and the bee-mimic flower chafer, *Trichiotinus assimilis*.

Last September, just east of MacGregor (on Trans-Canada Highway 1), I was surprised to see in my sweep net several large Banded Garden Spiders (*Argiope trifasciata*). In this cosmopolitan species, the female may reach a body length of 25 mm, while the male is only 5 mm. I caught two other smaller ones this year in late August a few kilometres north of MacGregor, and another two in Labarriere Park (mentioned earlier). I have captured a number of the close relative *Argiope aurantia* in several locations in the United States, and it occurs close to Manitoba south of the border, but David Wade informed me that only an imported specimen is known from the province.

Even my Winnipeg home garden produced some nice species this year -- a *Psyche casta* moth larval case of plant fragments attached to the house, the dreaded Red Lily Beetle (*Lilioceris lillii*) on lilies, *Stenolophus comma* carabids on the sidewalk, dytiscid beetles that slid off my gazebo roof, impressive female, *Pelecinus polyturator* wasps, a tiny (5-mm) Currant-tip Borer Longhorn (*Psenocerus supernotatus*) sitting on a window, a Banded Longhorn (*Typocerus velutinus*) on a flower, an ant-mimic clerid beetle (*Enoclerus nigripes*) running along a freshly cut White Spruce log, several species of buprestid beetles (e.g., *Chrysobothris femorata*) that emerged from oak firewood stored in my garage, and an impressive horntail (*Xeris melancholicus*) and colourful Willow-Oak Sawfly (*Arge quidia*) on my deck. This collection, and the one at the Keneston Boulevard ponds, demonstrated nicely just how diverse arthropods can be in a city environment.



Robert Wrigley collecting in Spruce Woods Provincial Park (Photo by Ron Boily)

These are some highlights of my 2015 collecting season in Manitoba, which will provide me with many pleasurable hours of mounting and identifying specimens. In fact, at this point in December, I have already mounted over 600 specimens of about 200 species, but have barely begun to process the entire summer's catch. From the above account it is obvious I am focusing on beetles, but I did save other kinds of insects (e.g., ants, wasps, bees, flies, true bugs) and spiders; I shall attempt identifications of these later, or forward them to professional entomologists. The diversity of insects and spiders in Manitoba is truly over-whelming, with an unending availability of new species (to me) to discover on almost every outing. As in past years, I have donated many of these specimens to the Wallis-Roughley Museum, the Manitoba Museum, the Canadian National Collection of Insects, Arachnids and Nematodes, and the Montreal Insectarium.

Lastly, from June 30 to July 27 of this year, my friend Jim Reimer and I drove through seven states to Arizona (collecting all the way there and back), where we stayed for nine days at Tony Battiste's B&B (a famous birding destination) in Hereford (south of Sierra Vista), at the eastern base of the Huachuca Mountains, and only a few kilometres from the Mexican border. We also spent a few days collecting near Portal in the Chiricahua Mountains, at Willcox (highest diversity of tiger beetles in the USA), and at Madera Canyon in the Santa Rita Mountains south of Tucson. We met and collected with a number of other entomologists from Arizona and California, and enjoyed their warm hospitality. As planned, we arrived just in time for the start of the monsoon season, with exceptional rains almost every evening due to the influence of the

strong El Nino in the Pacific. That expedition produced an extraordinary diversity of large, beautiful and interesting arthropods (hundreds of species and over 6000 specimens), some of which I hope to describe in a future article. The summer of 2015 turned out to be a marvelous field season.

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Drive-Thru Marathon

by Todd Lawton

For several years I've been studying *Scaphinotus* (Carabidae) in the Ozark Uplift of the South Central States. The *Nomaretus* subgenus (*S. fissicollis*, *S. cavicollis*, *S. infletus*, etc) is well represented in this area; typically they are medium-sized (9-12mm) and a vibrant purple colour.

During the early fall of 2014 I set approximately 175 pitfall traps in Arkansas, Missouri and Oklahoma; I checked and refreshed them in mid-October. I was surprised and encouraged by the number of *Scaphinotus* captures. I decided to check and remove the traps over an extended weekend in late November rather than waiting until spring. I admittedly had concerns about traveling such a long distance in winter conditions.

I set out immediately following work and made the three hour drive to Fargo, North Dakota, fortunately the border crossing was quick. I was in bed after a drive-through dinner. I was up at 2:00 AM to drive; patches of snow and ice fog made driving tricky but I managed to maintain a good speed through the night. I saw snow down to almost Kansas City, the only large city along my route. I wondered if I would have anything at all in my traps, it had been cold in the south in recent weeks.

I arrived at my first trap site near Nevada, Missouri at 2:30 PM. It was refreshing to strip off my coats and check my traps in a t-shirt! I had two *Scaphinotus elevatus flammeus* and three *Carabus sylvosus* plus the usual assort of smaller beetles that would be identified once I returned to Winnipeg. I spent the night at Joplin, MO, again after a quick dinner.

I was up at 3:00 AM and on the road following a shower. The roads were wet but not slippery, I made good time. I picked up supplies in the Waldron, Arkansas, Walmart; it was almost sunrise.

I arrived at my first site just as the darkness was fading. Unfortunately there was one car at the trailhead; it was hunting season and I was apprehensive about hiking through the woods in near-darkness. I started out as soon as I could see the trail. It's a one mile hike up the mountain so by the time I reached the top there was sufficient light to find my traps. I didn't need to follow the directions on my voice recorder; I had visited the scree slope enough times that I knew where the traps would be. A couple years earlier I had set traps along the trail hoping to capture *S. cavicollis*; I was surprised when I caught a far larger *Nomareetus*, (16-18mm!), that didn't resemble any of the known species. I have sent a specimen to a *Scaphinotus* authority at the Carnegie Museum in Philadelphia and he remarked, "I think you pretty clearly have something new and rather wonderful."

Many of the *Scaphinotus*, with their inflated abdomens, float in traps and it's immediately obvious if there are captures. *S. cavicollis*, and others in the *Nomareetus* subgenus, sink and it isn't until the end of the day that you know if you've been successful. Fortunately I could see vibrant purple beetles among the leaves and camel crickets in my colander; I was encouraged that my trip would be worthwhile. I also captured a *S. parisiana*; a very large species, (25 mm), that I had not seen at that site previously. I packed up my captures and traps and quickly descended the mountain. I made as much noise as I could to alert any hunters that I was passing through.

I stopped at the Walmart in Mena and bought an orange hunting cap; I didn't want to take chances. I drove into the high country, passing over into Oklahoma in very thick fog. I checked and removed four lines of traps. Again, I could see the occasional purple *Scaphinotus* specimen in the trap debris. On my previous trip, in October, I had good returns from my traps in Oklahoma establishing that my "new species" ranged beyond Arkansas.

I picked up a quick lunch at a Mena drive-through and then drove east to my next study area. This site is in a mature deciduous forest by a rivulet that flows even in very dry years. It's a favourite because I reliably catch *S. cavicollis* and an undescribed *Sphaeroderus* (Carabidae) species. Unfortunately, the local raccoons are very adept at raiding traps and I have to go to great lengths to secure my pitfalls. I stake wire mesh over the cups and cover them with metal lids. Most of the traps remain intact but the raccoons still find ways to raid as many as they can. It wasn't unusual to find a pile of dried beetles, apparently any insects that weren't palatable, near the traps. Many of my Arkansas sites have experienced dramatic changes in recent years; large numbers of trees have fallen perhaps due to the droughts and wind storms. Because of this I often have difficulty navigating; most of the large trees that I used as landmarks have fallen.

I was encouraged that I was ahead of schedule. I set out for the two hour drive to Mount Magazine, the highest mountain in Arkansas. I was surprised to see a



The north slope of Magazine Mountain in Arkansas, type locality for *Scaphinotus parisiana* (Todd Lawton photo).

road-killed Copperhead while leaving the Mena area; my understanding was that hibernation began in mid-October. Had I known they were still active I would have worn my snake boots and walked a little more slowly!

Mount Magazine was cloaked in fog but dry. Heavy rain and tornadic storms were in the forecast but I was very glad to see better conditions! A quick hike outside the park and down the north face brought me to my next set of traps. After several dry years, conditions were finally ideal and *S. parisiانا* was having a banner year! I caught 12 *S. parisiانا* and a larger number of *S. fissicollis*. Mount Magazine is the type locality for *S. parisiانا* and has always been my most reliable site for this species. Unfortunately weather conditions had prevented attempts at bait trails in September and October. I spent the night at Russellville, AR, and as usual it was early to bed, early to rise.



Scaphinotus parisiانا (Todd Lawton photo).

I was up at 3:00 AM so I could be at my next site by sunrise. Alum Cove is the type locality for *S. infletus*, a site I had not sampled previously. Unfortunately I didn't catch any *S. infletus* but I did capture a beautiful *S. parisiانا*. My final site was near Mountain View, AR, in a wooded creek valley that I knew was popular with hunters. Sure enough, there were many camps in the woods. The orange cap went back on and I checked my traps quickly; I was rewarded with a single *S. infletus* capture.

Without delay I began the first leg of the 18 hour return drive, arriving at Council Bluffs, Iowa, just after dark. I was up again at 3:00 AM, allowing myself a buffer in case snowy conditions slowed my driving. I arrived back in Winnipeg by afternoon, having traveled 4500 kilometers in 3.5 days!

Normally, a successful fall trip to Arkansas means about 20-30 *Scaphinotus* specimens; I caught 110 on the November trip, and 60 on the first check in October! The experience seemed dream-like, long stretches of driving with occasional jaunts through dark, cloudy woods. But the rewards far outweighed the efforts required and I knew this trip would be remembered as a classic!

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