THE 62nd ANNUAL MIDWESTERN CONFERENCE OF PARASITOLOGISTS

Program and Information

Western Illinois University
Macomb, Illinois

June 3-5, 2010

Papers and Posters by Students and Faculty

Symposium – Can Parasitic Worms Treat Autoimmune Disorders?

Banquet Address – Frankenflukes: Parasitic GMO's.
AMCOP 62, June 3-5, 2010  
Western Illinois University  
Macomb, Illinois

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Eastern Illinois University

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Secretary/ Treasurer ..................Dr. Douglas Woodmansee  
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For support of the Herrick Award.

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For support of speakers’ travel expenses.

THE MEMBERSHIP OF AMCOP
For support of the LaRue, Cable, and Honorable Mention Awards and other expenses.

2010 AMCOP DUES

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Faculty & Emeriti ($10), Student ($5): $_________

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Schedule

THURSDAY, JUNE 3, 2010

After 2:00 pm  Arrival and Check-in at Thompson Residence Hall.

6:00 -9:00 pm Opening Mixer, Prairie Lounge of the University Union.

FRIDAY, JUNE 4, 2010

Capitol Room, University Union

8:00am  Continental Breakfast & Silent Auction Setup

8:40  Opening Remarks and Welcome
- Dr. Shawn Meagher, Program Officer
- Dr. Richard Anderson, Associate Dean of the College of Arts and Sciences
- Dr. Paul Nolen, Professor Emeritus, Biological Sciences

CONTRIBUTED PAPERS

9:00  1. A Parasitological Survey of Pen-raised Bobwhite Quail (Colinus virginianus) in Illinois. **BRYAN ROLFSEN (UG)** and **JEFFREY LAURSEN (MP)**, Department of Biology, Eastern Illinois University, Charleston, IL 61920.

9:20  2. Ecology of Pinworms (Thelastomatidae) in the Australian Cockroach. **KRISTA WINTERS (GS)**, **KENNETH W. MCCRAVY (MP)**, and **SHAWN MEAGHER (MP)**, Biological Sciences, Western Illinois University, Macomb, Illinois 61455.


10:00  Break & Silent Auction Bidding
10:20 4. Investigation of the seasonal prevalence of gastrointestinal nematodes and protozoal parasites of naturally infected alpacas, Lama pacos, in the Midwest. **KATHY JOHNSON (GS) and JOSEPH CAMP, Jr. (MP), Comparative Pathobiology, Purdue University, West Lafayette, IN 47907.**

10:40 5. The role of damselflies (Odonata: Zygoptera) as paratenic hosts in the transmission of *Halipegus eccentricus* (Digenea: Hemiuridae) to anurans. **MATTHEW G. BOLEK (MP), HEATHER R. TRACY (GS), and JOHN JANOVY JR (MP).** 1Department of Zoology, Oklahoma State University, Stillwater, Oklahoma, Stillwater, OK 74078, and 2School of Biological Sciences, University of Nebraska-Lincoln, Lincoln, NE 68588.

11:00 6. Redescription of the African *Chordodes albibarbatis* Montgomery 1898, and description of a new species of *Chordodes* (Gordiida, Nematomorpha) and its non-adult stages from Cameroon, Africa. **MATTHEW G. BOLEK (MP), BEN HANELT (MP), ANDREAS SCHMIDT-RHAESA (MP), and DENNIS J. RICHARDSON (MP).** 1Department of Zoology, Oklahoma State University, Stillwater, OK 74078, 2Department of Biology, University of New Mexico, Albuquerque, NM 87131, 3Zoological Museum and Institute, Biocenter Grindel, Martin-Luther-King-Platz 3, 20146 Hamburg, Germany, and 4School of Health Sciences, Quinnipiac University, Hamden, CT 06518.

11:20 7. The role of damselflies (Odonata: Zygoptera) as paratenic hosts in the transmission of *Halipegus eccentricus* (Digenea: Hemiuridae) to anurans. **MATTHEW G. BOLEK (MP), HEATHER R. TRACY (GS), and JOHN JANOVY JR (MP).** 1Department of Zoology, Oklahoma State University, Stillwater, Oklahoma, Stillwater, OK 74078, and 2School of Biological Sciences, University of Nebraska-Lincoln, Lincoln, NE 68588.

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11:20 7. **DR. GEORGE CAIN**, President, The American Society of Parasitologists

11:30 Lunch

**THE AMCOP SYMPOSIUM**
Capitol Room, University Union

Can parasitic worms treat autoimmune disorders?

1:30pm 7. Helminths: Do they belong in our Immune Ecosystem? **DAVID ELLIOTT**, Department of Internal Medicine, University of Iowa, Iowa City, IA 52242
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2:30  8. Parasites as Old Friends: Multiple Sclerosis. **JOHN O. FLEMING**, Department of Neurology, University of Wisconsin, Madison, WI 53792

**POSTER SESSION**

Prairie Lounge, University Union

3:45  9. Survey of Alpacas within the Chippewa Valley (Wisconsin) for the parasites *Cryptosporidium* spp. and *Eimeria macusaniensis*. **KAYLA WILLIAMS** (UG) and **DARWIN WITTROCK** (MP), Department of Biology, University of Wisconsin-Eau Claire, Eau Claire, WI 54701.

10. Methodology for determining alarm substance cell (ASC) density in relation to black spot parasite load in the creek chub. **KATE PISCHE** (UG), **MEGAN MELLER** (UG), **DAVID LONZARICH** (MP), and **DARWIN WITTROCK** (MP), Department of Biology, University of Wisconsin-Eau Claire, Eau Claire, WI 54701.

11. Survey of rural farm cats for the presence of the parasite *Trichomonas foetus*. **EMILY PIERCE** (UG), **CHELSEA SAGER** (UG), and **DARWIN WITTROCK** (MP), Department of Biology, University of Wisconsin-Eau Claire, Eau Claire, WI 54701.

12. Host Switching and Parasite Diversity in Invasive Carp of Illinois. **JUSTIN WILCOX (GS)** and **JEFFREY LAURSEN** (MP), Department of Biology, Eastern Illinois University, Charleston IL, 61920.

13. Egg production by pinworms living in Australian cockroaches. **SHAWN MEAGHER** (MP), **KRISTA WINTERS** (GS), **JAMAAL ADAMS** (UG), **KEVIN BRADT** (UG), **SHELBRY LEUDERS** (UG), **TERESA MCDONNELL** (UG), **STEPHANIE STENTER** (UG), **TABITHA WILLIAMS** (UG), and **MEGAN WOODRUM** (UG), Biological Sciences, Western Illinois University, Macomb, IL 61455

14. Size and fecundity of two pinworm species living in Australian cockroaches. **DANYA BOKHARIY** (GS), **KENNETH W. MCCRAVY** (MP), **KRISTA L. WINTERS**
Investigation of Biomphalaria glabrata plasma factor(s) possessing in vitro toxicity to Fascioloides magna miracidia.

BANQUET
Lamoine Room
University Union

Mixer 6:00 – 6:30 pm
Dinner 6:30 – 7:30 pm
After Dinner Presentation 7:30 pm

Invited speaker: Dr. Tim Yoshino, The University of Wisconsin.

Frankenflukes: Parasitic GMO's.

SATURDAY, JUNE 5, 2010.
Capitol Room, University Union

8:00 am Continental Breakfast
Silent Auction

9:00 Silent Auction Bidding Closes

CONTRIBUTED PAPERS

9:00 17. Differential lethality of the Culex pipiens midgut for filarial worms. SHELLY MICHALSKI¹, SARA ERICKSON (GS)², LYRIC BARTHOLOMAY³ AND BRUCE CHRISTENSEN (MP)IV Department of Biology and Microbiology, University of Wisconsin Oshkosh, Oshkosh,
9:20  18. Endemism of parasites shapes the parasite communities of didelphid marsupials.  **F. Agustin Jimenez**  
Department of Zoology, Southern Illinois University, Carbondale Illinois 62501

9:40  19. Re-examination of *Neopolystoma liewi* (Monogenea: Polystomatidae) from the conjunctival sac of *Cuora amboinensis* (Testudines: Geomydidae) from Malaysia, and the importance of specimen preparation in taxonomic studies.  **Thomas R. Platt** and **Andrea Firth** (UG), Department of Biology, Saint Mary’s College, Notre Dame, IN 46556

10:00  20. Parasitic organisms and parasitic ideas: More than meets the eye?  **Kevin S. Baldwin** (MP), Department of Biology, Monmouth College, Monmouth, IL 61462

10:20  Break

10:40  Business Meeting and Award Presentations.  Dr. Jeffrey Laursen, Presiding.

**Abstracts**

1. A Parasitological Survey of Pen-raised Bobwhite Quail (*Colinus virginianus*) in Illinois.  **Bryan Rolfsen** (UG) and **Jeffrey Laursen** (MP), Department of Biology, Eastern Illinois University, Charleston, IL 61920.

This survey of intestinal parasites of bobwhite quail (*Colinus virginianus*) was conducted in Casey, IL between the months of May and November 2009. Parasites were sampled from a total of 43 pen-raised quail; using necropsies, fecal examinations, and blood smear analyses. Litter egg burdens were also estimated. Three endoparasites, including two nematodes (*Heterakis* sp., *Capillaria* sp.) and one protozoan (*Eimeria* sp.) were found throughout the sample period. *Eimeria* sp. occurred in young birds, but those that
survived developed immunity. *Capillaria* sp. was present in older birds, and high intensity infections caused fatalities. *Heterakis* sp. occurred periodically at low levels throughout the study. Potential management techniques meant to lower parasite levels are discussed – vigilant sanitation ranks as the number one priority in prevention.

Parasites are associated with almost every species on earth. Pinworms are small parasitic roundworms that live in the digestive tract of most animals, including cockroaches. This research project dealt with a common greenhouse pest, *Periplaneta australasianae*, the Australian cockroach and the pinworms associated with them. Three major aspects of the cockroach/pinworm association were investigated: 1) what species of pinworms are found in the cockroach, 2) does cockroach age or sex affect levels of infection, and 3) if multiple pinworm species reside in the cockroach, does competition occur? A total of 356 cockroaches were trapped and disected and 2146 pinworms were recovered. Of the 356 dissected cockroaches, 208 had identifiable pinworm communities, which were composed of both *Leidynema appendiculata* and *Thelastoma* spp. We found that age is a factor in determining infection levels of all pinworms combined, as well as *L. appendiculata* and *Thelastoma* spp. alone. Older (larger) cockroaches had more pinworms. Age also affected the prevalence of infection. Prevalence tended to increase with increasing age, then decrease from late-stage juveniles to adults. This change was statistically significant in *Thelastoma* spp. I found that sex did not affect pinworm intensity but did seem to affect the prevalence of *L. appendiculata* and *Thelastoma* spp. in an age-dependent manner. In both cases, prevalence decreased from late-stage juveniles to adult in males, but not females. Finally, I found evidence for competition between *L. appendiculata* and *Thelastoma* spp. Both species occurred together less often than expected by chance.

Evaluation of synlophe and bursa as taxonomic characters for Vianniaiae (Nematoda: Trichostrongyloidea). **R. PHILIP**

**Membership Directory**

(Dues Paid in Either 2009 or 2010)

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33
The superfamily Trichostrongyloidea (Travassos, 1937) Durette-Desset, 1985 includes numerous diverse groups of parasites divided into 14 families and 24 subfamilies. Each family contains genera of varied morphology, yet much emphasis has been placed on characters of the caudal bursa and the synlophe as keys to classifying the nematodes and understanding their morphological evolution. Bursal arrangement types based on disposition of rays came about in order to group the parasites according to family and subfamily. However, variation in bursal arrangement can exist even within a genus, as in the case of Viannaiinae Travassos, 1914. In this study, I compare and contrast the similarities and differences in bursal arrangement and synlophe in Viannaiinae Neveau-Lamaire, 1934. The examination of representative species of Travassostrongylus Orloff, 1933, Viannaiinae, and Hoineffia Diaw, 1976, allows the understanding of the intra and interspecific variability of this structure. I hypothesize that significant bursa type variation exists between the genera in this subfamily. Inconsistencies in bursa types across Viannaiinae would suggest that bursal arrangements are not reliable diagnostic characteristics. Additionally, the positions of cuticular ridges on the synlophe are structures that provide another level of analysis. In examining these parasites I attempt to answer the following question: is bursal variability also observed in sister genera? In this study, this work would reexamine the key characters of Trichostrongyloid classification and work towards a taxonomic revision of the family Viannaiidae Durette-Desset, 1982.

Investigation of the seasonal prevalence of gastrointestinal nematodes and protozoal parasites of naturally infected alpacas, Lama pacos, in the Midwest. KATHY JOHNSON (GS) and Joseph Camp, Jr. (MP), Comparative Pathobiology, Purdue University, West Lafayette, IN 47907.

Alpacas, Lama pacos, have increased in popularity in the United States. Their gentle dispositions, low feeding costs and high selling prices for quality breeding age males and females have led to an increased demand for alpacas. Due to these qualities, owners from various backgrounds are now raising alpacas, including those with limited farm experience. Small ruminants often have problems attributed to gastrointestinal parasitism. Frequently, a decrease in productivity of the animal occurs and with severe infections death can result. The types of parasites, infection levels, and effects that seasonal changes have on the prevalence of gastrointestinal (GI) parasites in alpacas located in Indiana were unknown. Previously,
most of the information regarding GI parasitism in alpacas has been extrapolated from research done in South America. The objectives of this study were to determine the types of gastrointestinal nematode and protozoal parasites and their infection levels in naturally infected healthy alpacas living in the Midwest, and the effects that seasonality may have on the prevalence of GI parasites. One-hundred forty-three alpacas selected from 11 farms located in Indiana and Illinois were sampled in the year-long study. Questionnaires were submitted to the farm owners regarding husbandry practices currently in use. Dewormer resistance is a major problem in small ruminants and is expected to occur among the cameldil as well. Under-dosing and frequent use of anthelmintics are contributing factors to the emergence of dewormer resistance. Currently, there are no approved dewormers for use in cameldils, and questions exist as to correct dosages. By determining the effect seasonal variations have on the prevalence of GI parasites, the frequency with which dewormers are used may be reduced, thereby slowing the emergence of dewormer resistance.

The role of damselflies (Odonata: Zygoptera) as paratenic hosts in the transmission of *Halipegus eccentricus* (Digenea: Hemiuridae) to anurans. 1MATTHEW G. BOLEK (MP), 1HEATHER R. TRACY (GS), and 2JOHN JANOVY JR. (MP). 1Department of Zoology, Oklahoma State University, Stillwater, Oklahoma, Stillwater, OK 74078, and 2School of Biological Sciences, University of Nebraska-Lincoln, Lincoln, NE 68588.

*Halipegus eccentricus* is a common hemiurid trematode in the eustachian tubes of North America frogs. However the life cycle of this species has never been completely elucidated. Studies on *H. eccentricus* suggest that it has a 3-host life cycle. Here, we show through fieldwork and host specificity experimental infections that the life cycle of *Halipegus eccentricus* utilizes 4 hosts. Metamorphosed anurans become infected with *H. eccentricus* by feeding on infected damselflies; worms reside in the stomach of anurans, migrate to the eustachian tubes within 32-39 days post-exposure (DPE), and release eggs 50-60 DPE. Cystophorous cercariae develop in *Physa gyrina* snails within 32-35 DPE, infect ostracod (*Cypridopsis* sp.) second intermediate hosts, and develop to metacercariae. Fifteen- to 19-dayold metacercariae from ostracods are infective to both damselfly larvae and metamorphosed anurans. Field surveys of damselflies and tadpoles along with laboratory exposure of damselfly larvae, metamorphosed anurans, and tadpoles

1991 University of South Dakota, Vermillion, SD, (XLIII) K. R. Kaszas
M. Dryden, What You Always Wanted to Know About Fleas on Fluffy and Fido but were Afraid to Ask. PO=A. D. Johnson, ST=D.M. Miller, H=D. Royal, L=R. Clopton, S= Host Specificity

1992 Univ. Wisconsin-Eau Claire, WI, (XLIV) Omer Larson
PO=D. Wittrock, ST=D.M. Miller, H=S. Storandt, L=D. K. Howe, S=Teaching of Parasitology-New Methods; Visit by ASP President J. Seed

1993 St. Mary's, Notre Dame, IN, (XLV) R. A. Grassmick
J. Sites, AMCPs Peragreanni, Homines, Exitus

1994 Murray State Univ. Murray, KY (XLVI) Gary Uglen
E. Christiansen, Come out, come out, we know you are in there

1995 Univ. of Wisconsin-Milwaukee (XLVII) Darwin Wittrock
E.S. Loker, Schistosomiasis in Kenya: A Copernican point of view
PO=J. Coggins, ST=D.J. Minchella; H=J. Curtis; L=M. Dwinell
S=Water-borne Diseases

1996 Northeast MO State Univ., Kirksville, MO (XLVII) Daniel Snyder
PO=L. C. Twining, ST=D.J. Minchella, H=V. G. Mehta, L=H. Yoder, S=Immune Aspects of Protozoan Infections; Malaria and Amoebiasis

1997 Butler University, Indianapolis, IN, (XLIX) Joe Camp
R. Hengst, Paleoparasitology, PO=D. Daniell; ST=D.J. Minchella; H=A. Bierberich, L=S. Kappe, S=Molecular Biology in Solving Problems in Parasitology

1998 Indiana State University, Terre Haute, IN (L) Jim Coggins
W. Coil, J. Crites, & T. Dunagan, AMCP 50 - Fifty Years Revisited;
PO=F. Monroy & D. Dusanic; ST=D. Wittrock; H=M. Bolek; L=K. Page
S=Cytokines and Parasitic Diseases; Visit by ASP President John Oakes

1999 Wilmington College, Wilmington OH (LI) Dennis Minchella
P. LoVerde, Molecular Biology of Schistosomes, PO= D. Woodmansee, ST=D. Wittrock; H=J.B. Green; L=J. Curtis; S=Parasite Biochemistry by J.D. Bangs and C.F. Fioravanti

2000 University of Notre Dame, Notre Dame, IN (LI) Peter Pappas
J.A. Oaks – The Art of Tapeworms
PO= J. H. Adams; ST= D. Wittrock; H= A. Eppert; L= M. Bolek; HM= C. Dresden-Osborne & K. VanBuskirk
S=Life Style Choices of Parasitic Protozoans by T. Sinai and J. Lebowitz

2001 Eastern Illinois University, Charleston, IL (LIII) Lin Twining
R.D. Smith - Environmental contamination with Cryptosporidium parvum from a dairy herd. PO= J. Laursen; ST= D. Wittrock;
H= B. Foulk; L= M. Michalski ; HM= M. Gilliland III; B. Bahu and P. Blair S= Use of Molecular Data in Parasite Systematics by M. Mort and M. Siddall

2002 Millikin University, Decatur, IL, (LIV) David Williams
P. Brindley – Mobile genetic elements in the schistosome genome
PO=Tom McQuiston; ST= D. Wittrock; H= Stacy Pfugler; L= Greg Sandland; HM= Kelly VanBuskirk and Michelle Steinauer
S= Parasite Transmission and Control in Domesticated Animals by M. McAllister and L. McDougald

2003 Michigan State University, East Lansing (LV) Tom Platt
Robert Pennock – Darwin and the Parasitic Wasp: Teaching Evolutionary

with infected ostracods indicated that only metamorphosed anurans and damselflies become infected with H. eccentricus, whereas field collected tadpoles and laboratory exposed tadpoles were never infected with H. eccentricus. Because little morphological change occurred in the metacercaria stage of H. eccentricus between the ostracod second intermediate host and damselfly host, and metamorphosed anurans became infected with H. eccentricus metacercariae recovered from both host groups, we suggest that odonates serve as permissive hosts in this life cycle. Additionally, our field work and experimental infections provide data on the use of odonates as the route of infection by another North American Halipegus sp. that matures in the stomach of frogs. Our data indicates that when the life cycles are known the use of odonates as the route of infection to anurans is common in life cycles of Halipegus spp.; and all species exhibit remarkable site fidelity in their amphibian hosts. (Supported by NIH grant number 1 P20 RR16469 from the INBRE Program of the National Center for Research Resources)

Redescription of the African Chordodes albibarbatus
Montgomery 1898, and description of a new species of Chordodes (Gordiida, Nematomorpha) and its non-adult stages from Cameroon, Africa. 1MATTHEW G. BOLEK

6 1 BEN HANELT (MP), 2 ANDREAS SCHMIDT-RHAESA (MP), and 3 DENNIS J. RICHARDSON (MP).
1 Department of Zoology, Oklahoma State University, Stillwater, OK 74078, 2 Department of Biology, University of New Mexico, Albuquerque, NM 87131, 3 Zoological Museum and Institute, Biocenter Grindel, Martin-Luther-King-Platz 3, 20146 Hamburg, Germany, and 4 School of Health Sciences, Quinnipiac University, Hamden, CT 06518

We redescribe Chordodes albibarbatus Montgomery 1898 from the original holotype male and the originally described female specimen using Nomarski interference contrast microscopy. Our reinvestigation indicates that C. albibarbatus is sexually dimorphic and contains five types of areoles in the male and six types of areoles in the female. Our reinvestigation of C. albibarbatus indicates that it is a distinct species, and is most similar to the African Chordodes garziuzzi Camerano 1902 and Chordodes heinzei Sciachitano 1937, all of which share simple “blackberry”, bulging, tubercles, and thorn areoles. In addition, we describe a male and female of a new species of Chordodes collected from West Province, Cameroon, Africa using both morphological (light and scanning electron microscopy) and
molecular data, and designate types for this species. The new species of *Chordodes* belongs to a large group of *Chordodes* in which simple areoles are smooth or superficially structured less so than "blackberry" areoles. Present among the simple areoles are clusters of crowned and circumcluster areoles along with thorn and tubercle areoles, whereas bulging areoles are absent. We also describe the egg strings, eggs, larvae, cysts, and oviposition behavior of this new species of *Chordodes* and compare these non-adult life stages to other nematomorph genera and species for which such life cycle stages are known. Finally, we discuss the use of non-adult stages and the use of molecular tools in future studies of nematomorph systematics and biodiversity. (Supported by NSF grant number 0949951).

7 Helminths: Do they belong in our Immune Ecosystem? **DAVID ELLIOTT**, Department of Internal Medicine, University of Iowa, Iowa City, IA 52242.

There is an epidemic of immune-mediated inflammatory disease in highly developed industrialized countries. Diseases like inflammatory bowel disease, type 1 diabetes and asthma increase in prevalence as populations adopt modern hygienic practices. These practices prevent exposure to parasitic worms (helminths). Epidemiologic studies suggest that people who carry helminths have less immune-mediated disease. We study the effect of helminth exposure on intestinal inflammation. In mice, helminth exposure alters the immune response of the gut, promoting Th2 and Treg activity, while inhibiting Th1 and Th17 function. This alteration protects against colitis. In people, helminth exposure appears to activate similar circuits and reduces disease activity. It is possible that much of the recent increase in immune-mediated disease results from loss of natural exposure to helminths.

Parasites as Old Friends: Multiple Sclerosis. **JOHN O. FLEMING**, Department of Neurology, University of Wisconsin, Madison, WI 53792.

Clearly, pathogenic parasites are ancient foes, and their control is a prime mission of world wide public health. On the other hand, immunologists have postulated that the highly sanitary conditions in developed countries are evolutionarily abnormal and may increase the risk of allergy and autoimmunity in susceptible individuals, since exposure to infections early in life may be necessary for proper immunoregulation to develop (the hygiene or "old friends"
Trematodes. ST=W.D. Lindquist

1956 Iowa State University, Ames, IA (VIII) W.D. Lindquist
W.H. Headlee, ST=F.J. Krudenier

1957 Univ. of Michigan, Ann Arbor, MI (IX) J.E. Ackert
A.C. Chandler, ST=F.J. Krudenier

1958 Kansas St. Univ., Manhattan, KS (X) G.B. LaRue
H.W. Manter, Trematodes of Many Waters. ST=F.J. Krudenier

1959 Northwestern Univ., Evanston, IL (XI) G.E. Otto
H. Van der Schalie, Contrasting Problems in Conrol of Schistosomiasis in Egypt and the Sudan. ST=D.T. Clark

1960 Purdue Univ., Lafayette, IN (XII) F.J. Krudenier
P.P. Weinstein, Aspects of Growth and Differentiation of Parasitic Helminths in vitro and in vivo. ST=D.T. Clark

1961 Ohio State Univ., Columbus, OH (XIII) N.D. Levine
B. Schwartz, Parasitology Old and New. ST=D.T. Clark

1962 Univ. of Nebraska, Lincoln, NE (XIV) G.W. Kelley, Jr

1963 Univ. of Minnesota, St. Paul, MN (XV) M.F. Hansen
F.G. Wallace, Observations on the Louisiana State University Inter-American Program in Tropical Medicine. ST=D.T. Clark

1964 Univ. of Chicago, Chicago, IL (XVI) D.T. Clark
R.E. Kunz, Paragonimiasis in Formosa. ST=E.J. Huggins
Kellogg Biological Station, Gull Lake, MI (XVII) P.E. Thompson
L. Jacobs, Toxoplasmosis. ST=E.J. Huggins

1966 Univ. of Illinois, Urbana, IL (XVIII) M.J. Ulmer
D.L. De Guisti, The Acanthocephala. ST=E.J. Huggins

1967 Iowa State Univ., Ames, IA (XIX) P.J. Silverman
N.D. Levine, Parasitology, Problems and Promise. ST=E.J. Huggins

1968 Univ. of Wisconsin, Madison, WI (XX) F.G. Wallace
D.R. Lincome, The Goodness of Parasitism. (with APS & AIBS) ST=J.H. Greve, H=W.G. Barnes

1969 Univ. of Cincinnati, Cincinnati, OH (XXI) H.W. Manter

1970 Loyola Univ., Chicago, IL (XXII) J.L. Crites
M.J. Ulmer, Helminths from Midwest to Mediterranean. ST=J.H. Greve, H=H. Blankespoor

1971 Univ. of Louisville, Louisville, KY (XXIII) F. Egges
H. Van der Schalie, Dam Large Rivers-Then What? ST=J.H. Greve, H=R. Campbell

1972 Southern Illinois Univ., Carbondale, IL (XXIV) B.J. Jaskowski

1973 Notre Dame Univ., Notre Dame, IN (XXV) R. Shumard
R.F. Rick, Babesiosis and the Development of Babesia in Ticks. PO=R. Thorson, ST=J.H. Greve, H=D. Danley

1974 Univ. of Michigan, Ann Arbor, MI (XXVI) D. Ameel
M.J. Ulmer, Snails, Swamps and Swimmer’s Ich. ST=J.H. Greve, H=H.P. LaVerde and D. Prechel

1975 Iowa State Univ., Ames, IA (XXVII) W. Bemrick
P.M. Nollen, Studies on the Reproductive Systems of Parasitic Flatworms or All You Wanted to Know About Sex in Worms and Were Afraid to Ask. ST=J.H. Greve, H=D. Wittrock, L>V.M. Nelson [FIRST LARUE AWARD]

In this regard, a decade ago, Elliott and colleagues were the first to propose that experimental colonization of patients with non-pathogenic helminths, such as the porcine whipworm, Trichuris suis, might be of benefit in human autoimmune conditions, such as inflammatory bowel disease, and this supposition was confirmed in subsequent clinical trials (reviewed in Elliott DE et al. Int J Parasitol 2007;37:464-457).

9 Survey of Alpacas within the Chippewa Valley (Wisconsin) for the parasites Cryptosporidium spp. and Eimeria macusaniensis. KAYLA WILLIAMS (UG) and DARWIN WITTROCK (MP), Department of Biology, University of Wisconsin-Eau Claire, Eau Claire, WI 54701.

Alpacas (Lama pacos) are South American camelds that are becoming increasingly popular as companion animals and sources of wool in the United States. Alpacas less than one year old, known as crias, are susceptible to many gastrointestinal pathogens including the protozoans Cryptosporidium spp. and Eimeria macusaniensis. Cryptosporidium, a well recognized parasite of cattle, has recently been identified as a cause of diarrhea in alpacas (Cebra et al., 2003; Waitt et al., 2008). However, it is not known if this parasite is carried by asymptomatic hosts. Eimeria macusaniensis was identified in camelids in 1971 as a cause of gastroenteritis, and asymptomatic hosts were also reported. A single report by Jarvinen (1999) identified E. macusaniensis in alpacas in Wisconsin. To access these parasites in alpacas in the Chippewa Valley area of western Wisconsin, fecal samples were obtained from two separate herds representing a total of 50 crias. Two samples were positive for Cryptosporidium oocysts; no E. macusaniensis was identified. None of the hosts showed any signs of illness when fecal samples were obtained. This is the first report of shedding of Cryptosporidium oocysts by asymptomatic alpacas. The cleanliness of housing facilities and routine antiparasitic treatment of alpacas by their owners may well be the reason for the low parasite prevalence in these hosts.

Methodology for determining alarm substance cell (ASC) density in relation to black spot parasite load in the creek chub. KATE PISCHKE (UG), MEGAN MELLER (UG), DAVID LONZARICH (MP), and DARWIN WITTROCK (MP), Department of Biology, University of Wisconsin-Eau Claire, Eau Claire, WI 54701.
It is thought that alarm substance cells (ASC) in the fish epidermis evolved as a means to warn other fish of nearby predation via release of the chemical substance that these cells hold. It has recently been hypothesized, however, that the evolution and presence of ASC in fish may have more of a relationship with parasitism than predation (Chivers et al., 2007). We undertook a study determine if an increased infestation of the black spot parasite caused by metacercariae of *Neascus pyriformis* in the creek chub *Semolitus atromaculatus* correlates to an increase in the density of ASC. A total of 31 fish from 4 streams in western Wisconsin were collected with varying degrees of black spot ranging from minimal to heavy loads. Epidermal tissues containing ASC were sectioned and stained to identify the density of ASC in the fish. Preliminary results have shown no relationship between numbers of black spots and ASC count. However, statistical analyses have shown that ASC densities are greatest in smaller fish and decrease with increasing fish length. This suggests that we need to correct for the effects of fish size when exploring relationships between black spot numbers and ASC density.

Survey of rural farm cats for the presence of the parasite *Trichomonas foetus*. **EMILY PIERCE** (UG), **CHELSEA SAGER** (UG), and **DARWIN WITTOCK** (MP).

Department of Biology, University of Wisconsin-Eau Claire, Eau Claire, WI 54701.

*Trichomonas foetus* is a sexually transmitted protozoan parasite that has long been known to cause endometritis, pyometra, and abortion in cattle. *T. foetus* has recently been identified as the cause of large bowel diarrhea in cats (Dahlgren et al., 2007), and a feline isolate of *T. foetus* was able to experimentally infect cattle (Stockdale et al., 2007). While feline trichomoniasis is considered an emerging problem, the prevalence of this parasite in rural cats has not been reported. To determine if *T. foetus* was present in rural cats in the Eau Claire area, a survey of 40 cats from 12 farms was undertaken. A fecal sample was taken from each cat using a fecal loop and inoculated into an InPouch diagnostic testing kit. Smears from the culture medium of each kit were examined with the light microscope every other day for 12 days to determine the presence of trophozoites of *T. foetus*. Unfortunately, our preliminary data have produced negative results from these 40 cats. The negative results are likely due to a small sample size and large age variation in the cats examined. Gookin et al. (2004) indicated that heaviest infections

8. The Conference confers three major awards during its annual meeting to student participants. These are the Chester A. Herrick Award, sponsored by the Eli Lilly Co., for the best poster/demonstration of parasitological research, the George A. LaRue Award for the best oral presentation of parasitological research, and the Raymond M. Cable Award for best presentation given by an undergraduate student. Honorable mention awards will be given to the second place poster/demonstration and second place oral presentation at the discretion of the awards committee. All awards except for the Herrick Award are supported by donations from the AMCOP membership.

9. (a) The winner of each award will be selected by a 3-person committee appointed at each annual meeting by the Presiding Officer. The criteria for judgment will be established each year by the committee.

(b) The size of the Herrick and LaRue awards shall traditionally be $300.00. The Cable undergraduate award and honorable mention awards shall traditionally be $100. Awards may vary according to funds available from contributors.

(c) No person may win the same award more than one time while in student status. Likewise, no student may win both awards at the same meeting. However, one person may win both awards while a student in different years.

**SUMMARY OF AMCOP MEETINGS 1949-PRESENT**

<table>
<thead>
<tr>
<th>Year</th>
<th>Meeting Site (Conference No.)</th>
<th>Presiding Officer</th>
</tr>
</thead>
<tbody>
<tr>
<td>1949</td>
<td>Univ. Wisconsin, Madison, WI (AMCOP I)</td>
<td>Harley J. Van Cleave</td>
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<tr>
<td>1950</td>
<td>Univ. Michigan, Ann Arbor, MI (II)</td>
<td>R.V. Bangham</td>
</tr>
<tr>
<td>1951</td>
<td>Purdue University, Lafayette, IN (III)</td>
<td>L.O. Nolf</td>
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<tr>
<td>1952</td>
<td>Univ. Illinois, Urbana, IL (IV)</td>
<td>R.J. Porter</td>
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<tr>
<td>1953</td>
<td>Iowa State College, Ames IA (V)</td>
<td>C.A. Herrick</td>
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<tr>
<td>1954</td>
<td>Michigan State Univ., East Lansing, MI (VI)</td>
<td>A.C. Walton</td>
</tr>
<tr>
<td>1955</td>
<td>Notre Dame Univ., IN (VII)</td>
<td>R.M. Cable</td>
</tr>
</tbody>
</table>

The positive results of our study suggest that *T. foetus* is a not a significant problem, but the preliminary data indicate the need for further investigation.
(a) Nominating Committee,

(b) Committee to Recommend Future Meeting Places,

(c) Committee to Suggest Program Possibilities for Future Meetings,

(d) Resolutions Committee,

(e) Judging Committee,

(f) Audit Committee,

(g) such other ad hoc committees as may be required.

The Presiding Officer shall appoint the Conference Representative to the Council of the American Society of Parasitologists for the year, who must be a member of that society. The current Presiding Officer serves as a member without vote of the Policy Committee.

5. The Secretary/Treasurer shall issue annual dues notices and about four months prior to each Conference a call for participants in the program for each Conference; inform the new Presiding and Program Officers concerning their duties and the members of the Policy Committee of their tenure and the Secretary of the American Society of Parasitology within three weeks after the annual election; serve as member without vote and the Secretary of the Policy Committee; and supervise all funds of the Conference.

6. The Program Officer shall be responsible for the general format of the Conference and for arranging suitable facilities and funding. It shall also be this person's responsibility to chair the special committee to determine and collect the registration fee for the Conference. The format of the Conference may vary, but should include both a demonstration session and a session of contributed papers, both open to all members. A symposium may also be included or may replace a session of contributed papers.

7. The Policy Committee shall determine by majority vote all matters of procedure and policy pertaining to the Conference upon which decision must be reached between consecutive Conferences, as well as all matters referred specifically to it by the membership. Such a vote may be requested by any member of the Conference but must be directed through the Secretary/Treasurer. The Chairperson of the Policy Committee shall request approval by the membership for all decisions of the Committee at the earliest subsequent business meeting of the Conference.

occurred in cats 12 months old or younger. Further studies to look at more cats of younger age are necessary to get a better understanding of \textit{T. foetus} presence in western Wisconsin.

Host Switching and Parasite Diversity in Invasive Carp of Illinois. \textbf{JUSTIN WILCOX (GS)} and Jeffrey Laursen (MP). Department of Biology, Eastern Illinois University, Charleston IL, 61920.

Invasive non-native species are a persistent form of biological pollution that have the potential to cause severe ecological and economic damage, and are estimated to cost the United States almost $120 billion dollars annually. The presence or absence of parasites are hypothesized to play a role in determining the extent of non-native invasions, and as such the damage they inflict, through a range of ecological mechanisms. For example, the loss of parasites maybe responsible for the incredible invasion success of some alien invaders as it frees them from natural enemies that regulate their populations. Conversely, the introduction of non-native parasites with non-native species can have devastating ecological effects if that parasite spreads to native species. As host switching plays a crucial role in both the release of parasites from their natural enemies and the threat of non-native parasite invasions, this study aims to survey the parasite communities of Illinois' four species of invasive carp (the common carp \textit{Cyprinus carpio}, the grass carp \textit{Ctenophyngodon idella}, the silver carp \textit{Hypopthalmichthys molitrix}, and the bighead carp \textit{Hypopthalmichthys nobilis}) as well as four species of closely related and ecologically similar natives (smallmouth buffalo \textit{Ictiobus bubalus}, fathead minnow \textit{Pimephales promelas}, gizzard shad \textit{Dorosoma cepedianum}, and bigmouth buffalo \textit{Ictiobus cyprinellus}). The condition of infected fish will be assessed, as will parasite loads and reproductive status. Such a survey will allow for a better understanding of the potential for native parasites to colonize invasive host and therefore limit invasion success, as well as document the potential for invasive carp to introduce new parasites. It will also serve as a test of the enemy release hypothesis in general. It is possible that invasive carp could be altering the native parasite communities and this study aims to determine the extent to which this maybe the case. The silver and bighead carp are currently threatening to invade the Great Lakes and endanger its seven billion dollar fishery, the subject of a recent lawsuit requesting that shipping locks around Chicago be closed. Preliminary research, consisting of the dissection of 29 silver carp from the Illinois river, found no gut helminths in any fish suggesting that enemy release maybe playing a
role in their invasion success. This survey will allow further clarification of this, with potential management implications.

Egg production by pinworms living in Australian cockroaches.

SHAWN MEAGHER (MP), KRISTA WINTERS (GS), JAMAAL ADAMS (UG), KEVIN BRADT (UG), SHELBY LEUDERS (UG), TERESA MCDONNELL (UG), STEPHANIE STENER (UG), TABITHA WILLIAMS (UG), and MEGAN WOODRUM (UG), Biological Sciences, Western Illinois University, Macomb, IL 61455.

Parasites may be used as biological control agents to reduce pest populations, without toxic chemicals. Parasite dissemination depends critically on patterns of infective stage release from host individuals. To begin to determine the utility of pinworm parasites as cockroach biological control agents, we measured egg production by pinworms (Leidynema appendiculata) inhabiting Australian cockroaches (Periplaneta australasiae). 17 female cockroaches were captured from the WIU Biological Sciences green house, and their feces were collected and weighed for 30 days (>500 samples). Roaches were killed, their size (mass) measured, and the number of worms in their gut counted. There was significant variation in egg production among cockroaches, and among days from the same cockroach. There were significant positive correlations between fecal mass and daily egg output (n = 509, r = 0.407, p < 0.0001), and between cockroach mass and mean daily total egg output (n = 17, r = 0.551, p < 0.011). Pinworm number was not correlated with mean daily total egg output (n = 17, r = −0.19, p = 0.47), but nearly significantly negatively correlated with mean daily egg output per worm (n = 17, r = −0.396, p = 0.058). In summary, large roaches released more eggs, and large fecal masses contained more eggs. Higher pinworm numbers did not increase pinworm egg production, possibly due to competition among pinworms. The absence of negative density-dependent reproduction in these worms suggests that they might be useful as biological control agents, so we are currently analyzing a larger data set to corroborate these patterns.

Size and fecundity of two pinworm species living in Australian cockroaches. DANYA BOKHARIY (GS), KENNETH W. MCCRAVY (MP), KRISTA L. WINTERS (GS), and SHAWN MEAGHER (MP), Biological Sciences, Western Illinois University, Macomb, IL 61455.

DUES
Annual dues are required for emeritus, regular and student membership. A registration fee is charged during registration at annual conferences. The amount of this fee will be decided for each Conference by a committee composed of the Presiding Officer, the Secretary/Treasurer, and the Program Officer, who is to serve as its chair. Dues are established by the Policy Committee and collected by the Secretary/Treasurer.

MEETINGS
The Conference is held in the general midwestern area during early to mid-June, unless otherwise specified by a majority vote of the previous Conference or a majority vote of those listed members replying by mail.

BYLAWS
1. Simple majority vote of members in attendance at regularly scheduled meetings of the Conference shall determine the policies of the Conference.

2. The officers are a Presiding Officer, whose term of office is one year or until a successor is elected (normally the term expires with adjournment of the annual Conference over which the person presides); a Secretary/Treasurer, whose term of office is two years or until a successor is elected; a Program Officer whose term of office is one year; and a Policy Committee composed of the last five available retired Presiding Officers plus, ex officio and without vote, the current Presiding Officer and Secretary/Treasurer. All terms of office of each full member of the Policy Committee is five years, or so long as the person is one of the five most recent, available Presiding Officers. The most recent past Presiding Officer available chairs the Policy Committee and is the Vice-President of the current Conference.

3. The Presiding Officer, the Secretary/Treasurer, and the Program Officer are elected by a majority vote of those members attending a regularly scheduled business meeting of the Conference or by a majority vote of those replying to a mail ballot of the membership.

4. The Presiding Officer shall preside at all meetings of the Conference and shall arrange for a banquet speaker. On the first day of a Conference the Presiding Officer shall appoint the following committees, which shall serve until they have reported on the last day of the annual Conference:
7. All AMCOP members, especially students, who presented papers and posters making the meeting an educational experience for all.
8. The staff of Vaquero’s Mexican Restaurant for providing both space and food for our opening mixer,
9. Ohio Wesleyan University and the staff of the Conrades-Wetherell Science Center for providing excellent facilities for paper presentations, poster displays, silent auction, and continental breakfasts and refreshment breaks,
10. The membership of AMCOP for support of the G.R. LaRue Award for outstanding platform presentation, the Honorable Mention awards, the Raymond Cable Award for outstanding undergraduate presentation, and travel awards for student winners,
11. Members of AMCOP who contributed books, journals, and esoterica for the silent auction, and finally,
12. Dr. Doug Woodmansee for continuing his fine job as our Secretary/Treasurer.

THE ANNUAL MIDWESTERN CONFERENCE OF PARASITOLOGISTS (AMCOP)

OBJECTIVES AND ORGANIZATION

NAME
The organization shall be known as the ANNUAL MIDWESTERN CONFERENCE OF PARASITOLOGISTS (AMCOP), hereinafter referred to as the Conference.

AFFILIATION
The Conference is an affiliate of the American Society of Parasitologists.

OBJECTIVES
The Conference is a gathering of parasitologists and students of parasitology for the purpose of informal discussion of research and teaching in parasitology and the furthering of the best interests of the discipline of parasitology.

MEMBERS
The Conference is open to all interested persons regardless of place of work, residence, or affiliation in other recognized societies. There are three categories

Body size is positively correlated with fecundity in many species, including parasites. We examined whether body size affects the fecundity of two species of the lastomatid pinworms (Leidynema appendiculata and Thelastoma spp.) inhabiting Australian cockroaches (Periplaneta australasiae). We collected 25 cockroaches from the WIU Biological Sciences greenhouse, dissected them, and removed pinworms from their guts. Pinworms were identified to species, sexed, and their length was measured as an estimate of body size. Female pinworms were dissected and their uterine eggs were counted three times and averaged for an estimate of fecundity. To test for effects of body size on fecundity, and to test whether there is a species-specific effect of size, we performed an ANCOVA with "egg count" as the dependent variable, "species" as a categorical factor, and "worm length" as the covariate. 85 female L. appendiculata and 33 female Thelastoma spp. contained eggs. There was a significant effect of worm length on egg count ($F = 4.56$, df = 1, 114, $p = 0.035$). There was no effect of species on egg count ($F = 0.06$, df = 1, 114, $p = 0.811$), and there was no significant worm length x species interaction ($F = 0.02$, df = 1, 114, $p = 0.893$), thus worm length had the same effect on fecundity in both species. In conclusion, these preliminary data suggest that body size does have a positive effect on both L. appendiculata and Thelastoma spp. fecundity, and that the quantitative relationship is the same in both species.

Investigation of Biomphalaria glabrata plasma factor(s) possessing in vitro toxicity to Fascioloides magna miracidia.

KATHRYN COYNE¹(GS), JEFF LAURSEN²(P), TIMOTHY YOSHINO³(MP) ¹Department of Pathobiological Sciences, University of Wisconsin, Madison, WI 53706 ²Department of Biological Sciences, Eastern Illinois University, Charleston, IL 61920.

Fascioloides magna, the deer liver fluke, contributes to North American and European fasciolosis, a ruminant parasitic infection of serious financial consequence in domestic species, and of ecological importance, especially to threatened/endangered caprids. The aim of this study was to shed some light, using F. magna as a study organism, on the interactions between larval trematodes and their snail intermediate hosts, which in turn will help to explain the high degree of species specificity that mediates these interactions. Eggs from live adult flukes harvested from hunter-killed white-tailed deer livers in November 2009 in St. Croix State Park, MN, were embryonated at room temperature for 4 wks, stored at 4C, and
warmed to 33C in pond water to stimulate hatching. Miracidia were then exposed to test media consisting of plasma (cell-free hemolymph) from 2 snail species, the incompatible snail Biomphalaria glabrata and the compatible species Lymnaea palustris. Plasma treatments included various dilutions in Chernin’s Balanced Salt Solution, heating (65C, 30 min), proteinase K digestion (proteinase K-agarose, 34C, 4 hr), or addition of catalase (6000 U per 80 µl plasma). Miracidia were scored at 1, 4 and 20 hrs as swimming, settled (no longer swimming, without morphological changes), transforming (rounded and/or shedding ciliated epidermal plates), completely transformed (sporocyst), damaged (rough tegument with degraded epidermal plates), or lysed. Preliminary data indicates that an average of 47% of miracidia sustained damage ("lysed" or "damaged") as a result of 4 hrs exposure to a 1:1000 dilution of plasma from the incompatible snail species, B. glabrata, with higher damage rates being observed at higher plasma concentrations. By contrast, plasma from the compatible snail species, L. palustris, damaged no more than an average of 3.3% of miracidia during a 4 hr exposure. Treatment of B. glabrata plasma with heat or proteinase K completely ablated the toxicity of the plasma, while catalase treatment did not decrease the plasma toxicity. These results strongly suggest that B. glabrata plasma contains a potent larvicial toxin that may be proteinaceous in nature, and also that reactive oxygen species (H2O2) are not primarily responsible for the observed toxicity. Work to further characterize the toxic factor(s) is currently ongoing. It is hoped that isolation and identification of this toxic factor(s) will shed some light on the enigma of host-parasite specificity in snail-trematode systems, and will even potentially be of use in control efforts aimed at these and related parasites of agricultural importance.

Frankenflukes: Parasitic GMO's. TIM YOSHINO, The University of Wisconsin.

Differential lethality of the Culex pipiens midgut for filarial worms. SHELLY MICHALSKI1, SARA ERICKSON (GS)2, LYRIC BARTHOLOMAY3 AND BRUCE CHRISTENSEN (MP)2,3. Department of Biology and Microbiology, University of Wisconsin Oshkosh, Oshkosh, WI 54901 2Department of Pathobiological Sciences, University of Wisconsin Madison, Madison, WI 53706 3Department of Entomology, Iowa State University, Ames, IA 50011.

Submitted June 10, 2009.
Douglas B. Woodmansee
AMCOP Secretary-Treasurer

AMCOP 61
REPORT OF THE RESOLUTIONS COMMITTEE
Jim Coggins and Darwin Wittrock

Whereas, the 61st Annual Midwestern Conference of Parasitologists met at the Ohio Wesleyan University at Delaware, Ohio on June 4-6, 2009, and

Whereas, the meeting was of the highest quality, promoting the field of parasitology as well as fellowship among those in attendance, and

Whereas, the membership of AMCOP wishes to acknowledge the contributions of the following individuals to the success of the 60th annual conference, therefore be it resolved that we acknowledge with UTMOST THANKS the following:

1. Dr. Ramon Carreno, Program Officer, for his meticulous planning that made for a VERY successful conference,
2. Dr. Daniel Howe, Presiding Officer, for his efficiency in conducting the meeting,
3. Our symposium speakers, Dr. Susan Jones of The Ohio State University, for her talk on “The resurgence of bed bugs (Cimex lectularius)—ectoparasites of humans” and Dr. Glen Needham also of The Ohio State University for his presentation on “Amazing ticks: Life in the weeds and attached to you,”
4. The American Society of Parasitologists for providing travel funds for our speakers,
5. ELANCO Animal Health, a division of Eli Lilly Company, for its continued support of the C.A. Herrick Award for outstanding poster presentation,
6. Dr. Eugene Lyons of the University of Kentucky for his banquet address reviewing his more than 50 years of research on fur seals in his talk “Hookworms (Unicaria spp.) in pinnipeds with notes on the biology of northern fur seals,”
American Society of Parasitologists’ student travel grant award for 2010.

The symposium on Friday afternoon was presented by Drs. Susan C. Jones and Glen R. Needham both of Ohio State University who spoke on “The resurgence of bed bugs (Cimex lectularius) – ectoparasites of humans.” and “Amazing ticks: life in the weeds and attached to you.” respectively. The banquet speaker was Dr. Eugene Lyons of the University of Kentucky who spoke on “Hookworms (Unicaria spp.) in pinnipeds with notes on the biology of fur seals.”

A silent auction of a large selection of books, microscope slides, journals and other items of interest was held.

AMCOP 62 will be held in 2010 at Western Illinois University in Macomb, Illinois. Additional future meeting sites as determined by the meeting sites committee are:

AMCOP 63 – 2011: Saint Mary’s College, Notre Dame, IN
AMCOP 64 – 2012: Truman State University, Kirksville, MO
AMCOP 65 – 2013: Purdue University, West Lafayette, IN
AMCOP 66 – 2014: The University of Kentucky

At the business meeting, Secretary-Treasurer Woodmansee presented the treasurer’s report for 2008 and the interim financial report for 2009. These were approved upon the recommendation of the Auditing Committee.

The travel grant program (initiated at AMCOP 59) was reviewed and it was decided that the program should continue with the value of the grants at $150 each. The membership charged the Secretary/Treasurer with investigating the costs of renting server space for the AMCOP web site.

Committee reports were received and approved as follows: Auditing (Darwin Wittrock and James Coggins), Symposium Suggestions (Matt Brewer and Nathan Butler), Meeting Sites (Dennis Minchella and Joe Camp), Nominating (Ramon Carreno and Dan Howe), and Resolutions (Darwin Wittrock and James Coggins).

Officers elected for 2010 were: Dr. Jeff Laurson, Eastern Illinois University: Presiding Officer; Dr. Shawn Meagher, Western Illinois University: Program Officer; and Dr. Douglas Woodmansee, Wilmington College: Secretary/Treasurer (2 year term).

Culex pipiens complex mosquitoes thrive in temperate and tropical regions worldwide, and act as efficient vectors of Bancroftian lymphatic filariasis (LF) in Asia, Africa, the West Indies, South America, and Micronesia. Neither Cx. p. pipiens (Ccpp) nor Cx. p. quinquefasciatus, however, vector South Asian Brugian LF (caused by Brugia malayi), despite their presence in endemic areas. The IA strain of Ccpp is differentially susceptible to filarial worms, in that it efficient vectors W. bancrofti but is refractory to Brugia parasites. We report that the barrier to Brugia infectivity in Ccpp Iowa strain is the mosquito midgut, and that the damage inflicted to incoming Brugia mf is somatic and lethal in nature. Less than half of experimentally infected Ccpp were infected with B. pahangi, and infection intensities were significantly lower than for the susceptible Aedes aegypti black-eyed Liverpool (LVP) strain (p<3×10^-4). The Ccpp strain was highly refractory to B. malayi, with prevalence of 0-5%, compared to 100% prevalence in LVP controls. Brugia mf introduced intrathoracically into Ccpp developed equally well as in LVP controls, indicating that Ccpp is physiologically compatible for infection. MF isolated from Ccpp midguts exhibited kinked motility, and unlike blood-derived MF and LVP midgut-derived controls, failed to develop when inoculated intrathoracically into the susceptible LVP strain. Together these data strongly support the role of the midgut as the primary infection barrier of Ccpp for Brugia spp. Ccpp midgut-derived MF absorbed vital stain, and application of papain to midgut-derived worms removed the sheaths from blood and LVP-derived MF, but damaged body walls of Ccpp-derived MF, supporting the hypothesis that Ccpp midgut-inflicted damage is somatic in nature. Incubation of Brugia mf with extracts of Ccpp midguts produce similar phenotypes; clearly indicating that the Ccpp midgut factors that damage MF in vivo are soluble and stable in physiological buffer (saline), and they are capable of attacking MF in vitro as effective as that in vivo.

Endemism of parasites shapes the parasite communities of didelphid marsupials. F. AGUSTIN JIMENEZ. Department of Zoology, Southern Illinois University, Carbondale Illinois 62501.

Didelphidae (Marsupialia) includes 91 species distributed across the New World showing several lifestyles and morphological adaptations. However, the metazoan parasite assemblages are known for only a handful of large sized species that include the Virginia opossum and its relatives. I herein compare the structure of 13 parasite assemblages of large sized opossums present in nine
different localities across the New World. These assemblages occur in four species that form a monophyletic group within Didelphinae. The effect of host phylogeny and habitat on the taxonomic structure and species richness of the assemblages was tested. First, qualitative similarity was calculated using the Jaccard similarity index comparing all possible pairs of assemblages. Second, the effect of host phylogeny on the structure of the assemblages was tested by linear regression under an independent contrast frame and finally, the effect of each of the nine localities on species richness was tested by Welch’s ANOVA. Our results suggest that 1) species of parasites infecting marsupials show high levels of endemism and vary among localities; 2) sympatric species of marsupials share a high proportion of parasites (>60%), whereas assemblages occurring in conspecific marsupials from different localities share relatively few species, and 3) species richness of parasite assemblages occurring in didelphid opossums is not an attribute of the species of marsupials. As a consequence, the structure and species richness of parasite communities in didelphid marsupials cannot be predicted based on the identity of the marsupials (i.e. species of opossum). Analysis of parasite faunas from other species of marsupials with different habits and adaptations will help in determining the role of the locality and phylogeny on the historic associations between these metazoa in the New World.

Re-examination of Neopolystoma liewi (Monogenea: Polystomatidae) from the conjunctival sac of Cuora amboinensis (Testudines: Geemydidae) from Malaysia, and the importance of specimen preparation in taxonomic studies. THOMAS R. PLATT and ANDREA FIRTH (UG), Department of Biology, Saint Mary’s College, Notre Dame, IN 46556.

Neopolystoma liewi du Preez and Lim, 2000 is re-examined from specimens collected from the conjunctival sac of the type host, Cuora amboinensis. Measurements from the current study were compared to those from the original description. Specimens from the current study were killed and fixed in hot formalin while specimens from the original were fixed using cover-glass pressure. Measurements of N. liewi from the original description are considerably larger (30-70%) than measurements of specimens from the current study. Specimens killed and fixed in hot formalin showed limited variation in most characters as determined by calculating the coefficient of variation. Cover-glass pressure cannot be controlled or standardized and should not be used in the preparation of platyhelminths for taxonomic study. Heat fixation produces excellent specimens with limited variation in key characters and should be employed in taxonomic studies of monogenetic and digenetic trematodes.

Parasitic organisms and parasitic ideas: More than meets the eye? KEVIN S. BALDWIN (MP), Department of Biology, Monmouth College, Monmouth, IL 61462.

Just as some parasites can manipulate the behavior of their hosts to insure transmission, parasitic ideas called memes may manipulate human minds to insure theirs. Recently it has been argued that some aspects of religion and popular culture can be understood as memetic phenomena. Some concepts from the discipline of parasitology can be applied to more fully understand and possibly manipulate these memes.

Summary of the 61st Annual Midwestern Conference of Parasitologists.

The 61st Annual Midwestern Conference of Parasitologists was held on June 4-6, 2009, at Ohio Wesleyan University in Delaware Ohio. Thirty six persons registered for the conference. Dr. Daniel Howe of the University of Kentucky served as Presiding Officer, and Dr. Ramon Carreno of Ohio Wesleyan made local arrangements and served as Program Officer. Seven platform presentations and 5 posters were presented by members. The C. A. Herrick Award and $300 for outstanding poster was awarded to Sriveny Dangoudoubiyam of Purdue University for her poster “Immunoscreening of Baylisascaris procyonis L3 cDNA expression library for identification of potential diagnostic antigens.” The G. R. LaRue Award and $300 for outstanding platform presentation was awarded to Elizabeth Thiele of Purdue University for her presentation “Moving at a snail’s pace: elucidating the temporal and spatial dynamics of Biomphalaria galbraータ genetic diversity in Brazil.” Cailee Smith of Ohio Wesleyan University received the R. M. Cable undergraduate award and $100 for her oral presentation on “Molecular characterization of Clinostomum sp. cysts from a spotted salamander (Ambystoma maculatum).” An Honorable Mention award and $100 was given to Matt Brewer of Iowa State University for his presentation entitled “Eimeria mediates conjugation and antibiotic resistance gene transfer in Salmonella.” Elizabeth Thiele was chosen as the AMCOP nominee for the