

ANNUAL NEWSLETTER

Department of Entomology
University of Illinois
at Urbana-Champaign

1977

DEPARTMENTAL ROSTER 1977-78

- BERLOCHER, Stewart H. - Assistant Professor of Entomology
- DELCOMYN, Fred - Associate Professor of Entomology and Physiology
- FRAENKEL, Gottfried S. - Professor of Entomology, Emeritus
- FRIEDMAN, Stanley - Professor and Head of Entomology
- GHENT, Arthur W. - Professor of Ecology, Ethology & Evolution and Entomology
- HORSFALL, William R. - Professor of Entomology, Emeritus
- HUMMEL, Hans E. - Assistant Professor of Entomology
- JAYCOX, Elbert R. - Professor of Horticulture and Entomology
- KOGAN, Marcos - Entomologist, Illinois Natural History Survey and Professor of Entomology
- LaBERGE, Wallace E. - ^{Head, Faunistics Section,} ~~Taxonomist~~, Illinois Natural History Survey and Professor of Entomology
- LARSEN, Joseph R. - Professor of Entomology and Physiology and Director of the School of Life Sciences
- LUCKMANN, William H. - ~~Entomologist and Head of~~ Economic Entomology Section, Illinois Natural History Survey and Professor of Entomology
- MacLEOD, Ellis G. - Associate Professor of Entomology and Genetics & Development
- Maddox, J. V. - *Entomologist, Illinois Natural History Survey and Professor of Entomology*
- METCALF, Robert L. - Professor of Entomology and School of Life Sciences
- ~~PRICE, Peter W. - Associate Professor of Entomology (on Sabbatical leave)~~
- ROSALES-SHARP, Maria - ^{Associate} ~~Assistant~~ Professor of Entomology
- RUESINK, William G. - ^{Associate} ~~Assistant~~ Entomologist, Illinois Natural History Survey and Assistant Professor of Entomology
- SELANDER, Richard B. - Professor of Genetics & Development and Entomology

~~STANNARD, Lewis J. - Professor of Entomology, Emeritus~~

STERNBURG, James G. - Professor of Entomology

~~THOMPSON, John N. - Visiting Assistant Professor of Entomology~~

WALDBAUER, Gilbert P. - Professor of Entomology

WILLIS, Judith H. - Professor of Genetics & Development and Entomology

~~ZDAREK, Jan - Visiting Associate Professor~~

STAFF 1977-78

Academic

Chang, Caroline - Res. Assoc.
 Francis, Bettina - Post-Doc
 Hammond, Bruce - Post-Doc
 Lu, Po-Yung (Jim) - Res. Assoc.

Nardi, James B. - Res. Assoc.
 Tegen, Penny M. - Res. Asst.
 Yanagawa, Hiro-Aki - Visiting
 Res. Assoc.

Nonacademic

Duvall, Eloise - NSLA III
 Edwards, Jill P. - Clerk-Typist III
 Fisher, Mary E. - NSLA III
 Fitzsimmons, James P. - Storekeeper II
 Millholin, E. Ruth - Principal Lab
 Tech.

Mohr, Donna - Staff Secretary
 Sergeant, Mary - Clerk-Typist III
 Tegan, Alan R. - NSLA II
 Wrisk, Lavelle M. - Clerk-Steno III

Students

Farris, Marion E.
 Gerdes, Charles F.
 Lee, Young-In
 Marlin, John C.
 Polk, Carla

Slotten, Jeff
 Walker, William F.
 Webb, Donald W.
 Zaitlin, Linda

Research Assistants

Ali, Syed
 Au, Lam Alexander
 Halbert, Susan E.
 Hsueh, Tai-fang
 Jackai, Louis E.
 Levinson, Glenn

Melin, Brian E.
 Pautler, Lynn P.
 Strickman, Daniel A.
 Toliver, Michael E.
 Turner, Lee Anne

Teaching Assistants

Boyd, John
 Evans, David
 Farooqui, Mohammed
 Hart, Suzanne
 Harvey, Jeanne P.
 Jeffords, Michael

Kawooya, John
 Lisowski, Edward A.
 Mari Mutt, José A.
 Stanley, Bruce
 Wagner, Steve W.
 Weis, Arthur E.

Trainees and Fellows

Belluck, David A.
Bouton, Carl E.

Watson, Philip L.

Students in other Programs with Entomology Advisors

Daley, Darryl - Neural & Behavioral Biology (Dr. F. Delcomyn)
Gross, Paul - Ecology (Dr. P.W. Price)
McPheron, Bruce - Ecology (Dr. P.W. Price)
Mendius, Barbara - Neural & Behavioral Biology (Dr. F. Delcomyn)
Thiery, Richard - Ecology (Dr. P.W. Price)

Recent Graduates1976 - Ph.D.'s

Adams, Cheryl L. (Selander)
Chang, Caroline Chang-Shyan (Metcalf)
Chen, Andrew Chung-Hsin (Friedman)
Cherry, Ronald H. (Luckmann)
Chio, Li-Chun Li (Luckmann)
Harbach, Ralph E. (Larsen)
Novak, Robert J. (Horsfall)
Sirisingh, Sathorn (Luckmann)

1976 - M.S.'s

Brenner, Richard J. (Horsfall)
Sherrod, Daniel W. (Luckmann)

1977 - Ph.D.'s

Brown, Daniel D. (Metcalf)
Chio, Hang (Metcalf)
Gundersen, Ross W. (Larsen)
Kardatzke, James T. (Horsfall)
Kritsky, Gene R. (Stannard)
LeSar, Charles D. (Luckmann)
Maier, Chris T. (Waldbauer)
Mayse, Mark A. (Price)
Parker, Beulah M. (Horsfall)
Walton, Barbara T. (Metcalf)

1977 - M.S.'s

Anderson, Thomas E. (Waldbauer)
Baldwin, Elizabeth A. (Metcalf)
Crain, Lawrence J. (Luckmann)
Foster, Rick E. (Ruesink)
Mollet, Judith A. (Ruesink)
Mohamedsaid, Mohamed S. (Selander)
Saume, Fernando (Hummel)
Schrader, Martha N. (LaBerge)

REPORT FROM THE DEPARTMENT HEAD

This year's offering should probably be entitled "The Better Late Than Never Newsletter." As you can see, it arrives a full one year and three months later than it should have, and, under new supervision. The reason for this is simply that there have been so many things happening that it has been difficult to find the time to put it all together.

Probably the most important event of the year, and the one which has taken much of the time which would normally have been devoted to getting this publication in the mail, has been the Centennial Celebration. This formal and informal get-together of alumni, present faculty and students of the department turned out to be a resounding success, and to those of you who were not able to make it, we tender our regrets. We hope that you will be able to live the event vicariously through some of the enclosed pictures and other information we have incorporated in the newsletter. It was, indeed, an "old home week" and at the risk of becoming maudlin, I must confess that I felt a great deal of pleasure in the company of all of my old colleagues and friends; and, in fact, a sense of pride in a department which has, over the years, developed such a consistently high level of students.

The quality of the product has a direct relationship to the quality of faculty and none better exemplifies this than the four individuals pictured on the cover of our newsletter. The picture on the top left is that of Dr. Stephen A. Forbes, who founded the Illinois Laboratory of Natural History in 1877 and was the guiding light and first head of our department. On the right is J.W. Folsom, a major force in insect biology, whose tenure in the department lasted from 1900 through 1923. On the lower left is Professor W.V. Balduf, in whose name the Balduf Award for graduate research is given each year, a member of the faculty from 1922 through 1957. The last is Professor William R. Horsfall, who was appointed to the Entomology Faculty in 1947 and continues to serve our department in spite of his retirement at the end of this past year (See, for example, the Announcement regarding the Ent. Leaflet Series in the Table of Contents). These scholars have been chosen to embellish the cover of our 100th anniversary newsletter because their lives encompass the entire life of our department, but it is safe to say that every one of our faculty has been responsible for the reputation of the department through individual research and direct interaction with one or more of our 350 plus degree recipients since the beginning of this century. Dr. R.L. Metcalf and Mr. Gene Kritsky have been kind enough to prepare a history of our department and lists of certain of the doings of our ex-graduate students and faculty. We have incorporated this information into the section of the newsletter devoted to the Centennial Celebration, and I hope that each of us feasts upon these lists and takes pride in learning of the important

role our department has played in the history of entomology in the United States over these last hundred years.

It is probably proper at this time to announce that the department continues to reap honors. Dr. Robert L. Metcalf has been awarded the 1976 Ciba Geigy Award for Agricultural Research in Entomology, given by the Entomological Society of America; Professor G.S. Fraenkel has recently been made a Fellow of the AAAS; and Professor Peter W. Price has been awarded a most prestigious Guggenheim Fellowship for 1977-1978 to work on the evolutionary biology of parasites. Dr. Mark Mayse who graduated in May of this year, has received the Graduate Student Award for the best research at the Ph.D. degree level presented by the North Central Branch of the ESA.

The role of teaching has lost none of its importance to the department, and presently our offerings in agricultural entomology are undergoing somewhat of a revision with Drs. Ruesink and Kogan, both members of the Natural History Survey with joint appointments in our department, becoming active in the delivery of our basic course in agricultural entomology. Dr. Hummel has also instituted a new course entitled, "Chemical Communication in Invertebrates."

A new faculty member, Dr. Stewart H. Berlocher, who comes to us from Dr. Guy Bush's lab at the University of Texas, is deeply involved in general problems of speciation and if the success of his seminar this past semester is any indication, his addition to our staff will light up many corners of systematics hitherto hidden from our students.

As an antepenultimate item, I entreat you, each of our alumni, to make use of the blank page at the back of the newsletter to provide us with information about yourself to be included in our 1978 issue. We are as interested in hearing from and about you as you are about us.

I intend to try to continue the practice of having some sort of get-together at the annual meeting of the Entomological Society of America. Whether it is breakfast or cocktails has not yet been decided, but I shall notify you all as soon as we have taken a step in that direction.

One final note: As you all know, the Balduf Award is generally given each year for the best example of graduate research in the department. The honor to the recipient of the award is great and the material remuneration, \$100, is significant to a young person leaving the university and setting out on a career of his or her own. We are still attempting to make the award self-sustaining so that we shall not have to burden you continually with pleas for gifts to bring it up to a working level. We need \$1,000 to make the fund independent of financial drain. I hope that a number of you will see this as a worthwhile way to support your department.

W. R. HORSFALL--AN APPRECIATION

William Robert Horsfall has been promoted to Professor Emeritus. For some, this might mean retirement from the profession of entomology. That hardly seems likely in the case of Professor Horsfall. We suspect that the time he spends on committees, in classrooms and in counseling may decrease but the time he spends entomologizing will greatly increase. He has the most insatiable curiosity about insects, a curiosity that has been highly infectious to students.

We are among the fortunate group that had W.R.H. as mentor. Although our time at Illinois was separated by 20 years, we find that the Horsfall stories have not changed. (Eccentricities in a lesser man, distinctive characteristics in this case.) We were happy to join with many other Horsfall students and friends at the Illinois breakfast at the E.S.A. meeting in New Orleans, December 1975, when the Professor was presented with a book of testimonial letters and a wall hanging listing his Ph.D. students. It was grand to have a chance to express our thanks, but of course we all realize how inadequate such expressions are.

Professor Horsfall began his academic career at the University of Arkansas where he received his B.S. degree in 1928. He went to Kansas State for the M.S. in 1929 and then to Cornell where he received the Ph.D. in Entomology in 1933. At Cornell, his major professor was G. W. Herrick. Herrick had John Henry Comstock as mentor. Horsfall's students (he is now an academic great grandfather) have always taken pride in tracing their lineage directly back to the great Comstock.

At any rate, W.R.H. was interested in entomology before entering college. His first entomological job involved responsibility for mosquito control on the campus of a small Arkansas college where his father was President. He had to treat breeding sites with fuel oil from a large and heavy spray can. To make the job easier, he invented the Horsfall Paint Brush Method of control. He carried a gallon bucket of oil and a paint brush, which was dipped in the oil and flipped at the water. This bit of artistry reduced the amount of oil used and made application more accurate. This kind of ingenuity is a trademark of the Horsfall career.

Although W.R.H. is best known as the authority on bionomics of Aedes mosquitoes, he has also worked on blister beetles, grasshoppers, chinch bug, Scarabæids, sawflies, bean weevils and malaria control. He has produced three books and 110 scientific articles. He has been a faculty member at four academic institutions and a consultant to many mosquito abatement districts plus WHO, TVA, NSF, the Slovak Academy of Sciences, etc. During World War II, he commanded a malaria survey unit in the South Pacific. His rank in the Army went from Lieutenant to Lt. Colonel. In spite of these accomplishments, W.R.H. readily proclaims that his reputation as a scientist will be most remembered in his products, his students.

Some years ago, an article appeared in the A.I.B.S. Bulletin stating that the choice of mentor in graduate school is the most important choice one makes in life (with the possible exception of spouse selection). One's entire career hinges on that selection. We tend to agree with that idea and so do other Horsfall students. He was not only our teacher (and a very good one), but also our model for learning to be a professional. He made "Entomologist" an exalted calling, not just a job.

Perhaps the best adjectives to apply to W.R.H. are innovative, honest and kind. He has always looked at the world from an unconventional angle. Many of his students recall the W.R.H. story about the man who invented the modern corn harvester by going out into a cornfield and lying down on his back in order to look up at the corn ear placement. While W.R.H. does not spend much of his research time on his back, he spends all of it trying to see insects from a slightly different viewpoint. "Think like an insect" is his motto.

A word is due about W.R.H. as prophet. In the late '40's, entomology was seized by a sort of toxicomania, whereby synthetic organic insecticides were thought to be a magic cure-all and the sole path to entomology of the future was via design of ever more toxic molecules. W.R.H. disagreed. He taught about ecosystems, balance-of-nature, genetic plasticity, environmental contamination at a time before some of those terms were even invented. It was not a very popular teaching at the time. His professional colleagues thought his teaching was old-hat and some students tended to snicker. Of course, it goes without saying that he has been overwhelmingly vindicated. Indeed, the pendulum has swung so far that Horsfall's views on the value of sane, scientific use of pesticides, views that have been consistent throughout his career, are now regarded as advocating pesticide overkill by a new generation of environmentalists and biological control enthusiasts.

Finally, a word about W.R.H. as a person. He works hard at cultivating an image as gruff, crusty tyrant, a hard, hard man. It is one of the thinnest veneers in history. Underneath lies a marshmallow. He loves his students. He has gone to great effort and through much pain to bring his intellectual offspring to the joys of scholarship. He and the gracious, charming Annie Laurie have shared their lives with many of us, and we are enriched for it.

George B. Craig, Jr. and Robert Novak
Vector Biology Laboratory
University of Notre Dame

VISITORS TO THE DEPARTMENT

1975-76

Stewart H. Berlocher
Department of Zoology
University of Texas
Austin, Texas 78712

Title: "Rapid Speciation in Rhagoletis (Tephritidae)"

Henry S. Dybas
Division of Insects
Field Museum of Natural History
Chicago, Illinois 60605

Title: "The Ecology and Evolution of the 13 and 17-year Cicadas"

Bruce F. Eldridge
Department of Entomology
Walter Reed Army Medical Center
Washington, D.C. 20012

Title: "The Hibernating Mosquito and its Relationship to Arbovirus Disease Ecology"

Paul P. Feeny
Department of Entomology
Cornell University
Comstock Hall
Ithaca, New York 14853

Title: "The Chemical Defense of Plants: A Function of Plant Apparency to Enemies"

Oliver Flint
U.S. National Museum
Department of Entomology
Washington, D.C. 20705

Title: "Distribution and Relationships of the Latin America Caddis Flies"

Carl Goodpasture
c/o Ralph Diaz
720 South Ramona Street
San Gabriel, California 91776

Title: "Breeding Structure and Taxonomic Differentiation in Chalcidoid Wasps"

Paul R. Grimstad
Vector Biology Laboratory
Department of Biology
University of Notre Dame
Notre Dame, Indiana 46556

Title: "Aedes triseriatus, Aedes hendersoni, and LaCrosse Virus"

Robert W. Gwadz
Research Entomologist
Malaria Section
LPD NIAID
National Institutes of Health
Bethesda, Maryland 20514

Title: "Mosquitoes and their Problems"

John E. Hafernik, Jr.
Division of Entomology
201 Wellman Hall
University of California
Berkeley, California 94720

Title: "Analysis of Hybridizing Populations of Buckeye Butterflies (Junonia, Nymphalidae)"

John G. Hildebrand
Department of Neurobiology
Harvard Medical School
Boston, Massachusetts

Title: "Olfactory Differentiation"

Ann Kammer
Division of Biology
Kansas State University
Manhattan, Kansas 66502

Title: "Metamorphosis of the Motor System of Manduca sexta"

TABLE OF CONTENTS

Report from the Department Head	1
W. R. Horsfall--An Appreciation	3
Visitors to the Department.	5
Entomology Graduate Student Association	9
Prairie Entomology Club	10
The Balduf Award.	11
Centennial Celebration.	12
The Event in Pictures	
Entomology Students	25
Nonacademic and Staff	32
News About the Faculty.	33
Recent Photos of Faculty, Staff and Students	
1975 Publications of the Department	43
1976 Publications of the Department	50
Announcement - Entomological Leaflet Series	57
Mailing List.	58
Newsletter Information for 1978	70

John L. Petersen
Vector Biology Laboratory
University of Notre Dame
South Bend, Indiana 46556

Title: "Field Trials of Chromosome Translocations for Genetic Control
of the Yellow Fever Mosquito in East Africa"

Thomas Poulson
311 South Elmwood Avenue
Oak Park, Illinois 60302

Title: "Subcommunity Structure of Terrestrial Cave Communities"

Frank Young
Department of Zoology
Indiana University
Bloomington, North Dakota 47401

Title: "Protective Coloration in Water Beetles"

1976-77

William S. Bowers
New York State Agriculture Experiment Station
Geneva, New York 14456

Title: "Anti-Juvenile Hormones"

Dan Gerling
University of Tel Aviv
ISRAEL

Title: "Pest Management of Cotton Insects"

E.F. Knipling
Agricultural Research Service
Department of Agriculture
Room #204, National Agricultural Library
Beltsville, Maryland 20705

Title: "Some Fundamental Principles of Insect Population Suppression;
Alternatives to Chemical Control"

Frantisek Sehnal
Institute of Entomology
Czechoslovak Academy of Sciences
Prague, CZECHOSLOVAKIA

Title: "Deviation from the Classical Scheme of the Hormonal Control of
Insect Development as Revealed by the Effects of Juvenoids, and
the Implication of these Anomalies for Insect Taxonomy"

Merrill Sweet
Department of Entomology
Texas A & M University
College Station, Texas 77843

Title: "Evolution of Feeding Behavior in Hemiptera"

ENTOMOLOGY GRADUATE STUDENT ASSOCIATION

For the academic year 1976-1977 the Officers were: President - Phil Watson; Vice President - Dave Belluck; Faculty Representative - Mark Mayse and Mike Toliver; Secretary - Steve Wagner and Treasurer - Tom Anderson. We have strived to continue to serve as: first, a communication line between the faculty and students; and second, as a vehicle for planning activities for Graduate Students in the Department.

The EGSA seminar series went extremely well this year with students, staff, and outside speakers presenting a variety of topics on entomology. The seminar committee chairmanships were held by Dave Evans (Fall) and Dave Belluck (Spring). A new mini seminar series was implemented this spring which allows students to present short seminar on their research in progress. It is hoped that this will continue to be a part of the seminar series since it was most beneficial to all who attended and participated.

The light activities of the year included a fall picnic, a halloween party, and a Christmas party. The fall picnic was held indoors at the infamous presidential palace and the meat was barbecued over open electric coils. The action at the fall picnic ranged from a sing along indoors to a basketball game outdoors as the weather cleared. This was followed by the halloween party which would have made any costume shop shutter and frighten a few "would-be" trick and treaters away from the door. Notable costumes at the party were: Mike Toliver (the Fonz?); Dave Belluck (Tex); Charlie Helm (the Mad Scientist), I guess he didn't get refunded; Larry Crain (a Crop Duster); Judy Mollet (a can of Raid); Phil Watson (Dracula). First prize however went to a non-entomologist (who invited him?) who came in a trash can filled with white paper. His title (of course) was white trash. The Christmas party was hosted by Dr. & Mrs. Waldbauer. Dr. Waldbauer tried desperately to give away to all hearty souls, his famous soup. Actually it was an excellent brew as was the rest of the food and drinks. The annual verbal gifts were given out by the experts, Dan "Rickles" Brown and Chris "The Roaster" Maier. They have since been lost, stolen and/or destroyed. That is welcome news for some of the recipients but a loss to posterity.

All in all it has been a fun and profitable year for most of the Graduate Students. My presence at the survey annex did create a communication gap but hopefully that gap was reduced by contact with the Vice President who was located in Morrill Hall. It was a pleasure serving as the EGSA President.

Phillip L. Watson
President, EGSA

PRAIRIE ENTOMOLOGY CLUB

The Prairie Entomology Club, founded in 1974, enjoyed its most successful year in 1976-77. The club's purpose is to provide an avenue of communication between the academic and non-academic communities on various topics in entomology and the natural sciences. Speakers from the Entomology Department and the Natural History Survey are scheduled for the monthly meetings, their talks are followed by informal discussions and exhibits of insects and related materials.

At our first meeting of the year in October Chris Maier introduced us to the flora and fauna of Sand Ridge State Forest, which he has studied extensively. In November Dr. James Sternburg gave an excellent presentation on the butterflies of Illinois. Both of these talks were beautifully documented by slides.

In December Dr. Marcos Kogan presented a very interesting and informative talk on an unusual group of insects - the Strepsiptera. After the Christmas holidays the members of the 1976 entomological expedition to the Southwestern United States exhibited specimens and slides from their trip.

February found us again in the Southwest with a very thorough and interesting discussion of the butterflies of New Mexico by Michael Toliver who is a native of that state.

Our last meeting of the year was devoted to a study of the fishes of Illinois by Dr. Phil Smith, a renowned authority in that area.

All the talks were thoroughly prepared and excellently illustrated and attracted numerous individuals from the community. The members of the club would like to express our appreciation to each of the speakers for their time and effort in making this a most enjoyable year.

Michael Jeffords

THE BALDUF AWARD

The award tendered for the best graduate research reported in the year 1976-77 has been given to Andrew C. Chen for his work entitled, "Hormonal Regulation of Trehalose Metabolism in the Blowfly, Phormia regina Meig.: Interaction Between Hypertrehalosemic and Hypotrehalosemic Hormones." Dr. Chen was a student with Dr. Stanley Friedman and the manuscript for which he was given the award will be published under their joint authorship in the Journal of Insect Physiology in the near future. Dr. Chen is presently on a postdoctoral appointment with Professor Lynn Riddiford in the Department of Zoology at the University of Washington in Seattle.

Competition for the award was keen this year and the committee* reports a great deal of pleasure in being given the opportunity to read the submitted contributions, and, in view of the high quality of most of those, its difficulty in making a selection.

Stanley Friedman

*G.P. Waldbauer, Chairperson
F. Delcomyn
H.E. Hummel

CENTENNIAL CELEBRATION

Schedule of Events	13
Report from Chairperson - G. P. Waldbauer.	14
Abstracts of Presentations	15
Chronology of Entomology at the University of Illinois R. L. Metcalf and G. Kritsky.	17
University Graduates and Faculty - Presidents of Entomological Society of America.	22
University Graduates and Faculty - Department Heads at United States Universities.	23
Early Courses in Entomology - Gene Kritsky	24

SCHEDULE OF EVENTS

THURSDAY, NOVEMBER 11, 1976

- 9:00 - 12:00 noon Open house, department and Natural History Survey.
- 1:15 - 5:00 p.m. Symposium convenes in room #407 Levis Faculty Center.
- 6:00 - 7:30 p.m. Cocktails, reading room and lobby on the first floor of the Levis Faculty Center. There will be an exhibit of departmental memorabilia.
- 7:30 p.m. Banquet, second floor of the Levis Faculty Center. Professor Robert Metcalf will speak on the history of the department.

FRIDAY, NOVEMBER 12, 1976

- 9:00 - 11:45 a.m. Symposium convenes in room #407 Levis Faculty Center.
- 12:00 - 1:45 p.m. Luncheon, third floor dining room of the Levis Faculty Center. Gene Kritsky will discuss the light side of the history of the department.
- 1:45 - 4:30 p.m. Symposium convenes in room #407 Levis Faculty Center.

REPORT FROM THE CHAIRPERSON

G. P. Waldbauer

On Thursday and Friday, November 11 and 12, 1976, we celebrated the 100th year of entomology at the University of Illinois. The events included open houses at the Department and at the Illinois Natural History Survey, and a cocktail party, banquet, luncheon, and symposium at the Levis Faculty Center on the campus. The arrangements were made by the "Centennial Celebration Committee" which consisted of Professor Fred Delcomyn, graduate student Gene Kritsky, and Professor Gilbert Waldbauer, the Chairman.

The speakers at the symposium were all alumni of the Department, and were chosen by a vote of the faculty. Drs. John V. Osmun, Paul A. Dahm, Daniel L. Shankland, and Ralph B. March spoke at the Thursday afternoon session. The moderator was Professor James G. Sternburg and the projectionist was Michael Toliver. The speakers at the Friday morning session were Drs. John F. Anderson, Robert Traub, and Herbert H. Ross. Professor William R. Horsfall was the moderator and James Kardatzke was the projectionist. Drs. Thomas E. Moore and John M. Kingsolver spoke at the last session, on Friday afternoon. Professor Peter Price was the moderator and Michael Jeffords the projectionist.

The cocktail party and banquet on Thursday were attended by about 150 students, faculty, alumni, and friends of the Department. After the banquet Professor Robert L. Metcalf spoke on the history of entomology at the University of Illinois. The luncheon on Friday was also well attended. Gene Kritsky spoke on the lighter side of our history.

The display cases on the third floor of Morrill Hall contained a chronology of the Department's history and a collection of Departmental memorabilia which were prepared by Gene Kritsky. The collection included a photograph of an 1889 entomology class, old copies of the "Illinent", Hexapoecia record books, photographs of former faculty, and old teaching materials. There was also a copy of a letter from Charles Darwin to Benjamin Walsh concerning periodical cicadas.

In addition to the speakers, local entomologist and students, alumni and guests who attended were: Mr. Rick Brenner, Dr. Ed Cupp, Dr. and Mrs. William K. Delaplane, Dr. David L. Denlinger, Dr. Jerry DeWitt, Dr. Tobias F. Dirks, Dr. Frank W. Fisk, Dr. Roger F. Flattum, Dr. and Mrs. Richard Forbes, Dr. and Mrs. Harland W. Fowler, Jr., Dr. Rachel Galun, Dr. and Mrs. Edwin G. Gemrich, Dr. M. Javahery, Dr. Donald R. Johnson, Dr. Paul C. Lemon, Dr. and Mrs. Robert E. Lewis, Dr. Khian K. Liem, Dr. and Mrs. J. M. Magner, Dr. and Mrs. Rene Martineau, Vice-Chancellor and Mrs. Roger E. Martin, Dr. Edward Mockford, Dr. Robert J. Novak, Dr. Janet L. C. Rapp, William F. Rapp, Dr. Robert C. Rendtorff, Dean and Mrs. Robert W. Rogers, Dr. Morris Seligman, Dr. Kathryn M. Sommerman, Dr. Ruth Slabaugh Stone, Dr. and Mrs. Roger W. Williams, and Dr. and Mrs. Willard Woodward.

ABSTRACTS OF PRESENTATIONS

The talks were chosen to be as varied as is a cross section of our graduates and served to emphasize the breadth of interests to which our students are exposed as they make their way toward a degree

The Role of Entomology in Public Policy Decision Making - John V. Osmun,
Department of Entomology, Purdue University.

Increasingly, the issues of our day that impact on entomology are being debated by non-entomologists and by government agencies which lack extensive expertise in our field. The present and future roles of entomologists and of possible collective actions of our science are discussed.

Insecticide Toxicology: Expectations and Realizations - Paul A. Dahm,
Department of Entomology, Iowa State University.

A historical review of the comparatively new field of insecticide toxicology, with some examples of successes and problems that have occurred with the development and use of insecticides.

The Comparative Pharmacology of the Nervous System: - Daniel L. Shankland,
Department of Entomology, Mississippi State University.

There are similarities in the form and function of nervous systems throughout the animal kingdom which account for a commonality of sensitivity to neuroactive compounds, while at the same time, there are phylogenetically based differences which lead to variation in degree and/or loci of action of these compounds. Examples are found in the basic organization of nervous systems, many processes such as electrogenesis and junctional transmission, and in biochemical entities such as chemical transmitters, receptors and enzymes.

Aspects of Insecticide Toxicology as Applied Insect Physiology - Ralph B. March, Department of Entomology, University of California, Riverside.

After many years of investigation, the precise mechanisms by which commonly used insecticides cause the deaths of insects have not been certainly established beyond the fact that these toxicants are neurotoxins. Their effects on water balance and subsequent dehydration in insects have been recorded by many workers, although there is little agreement about where the water goes or what the ultimate results may be. Our current understanding of the mechanisms associated with water relationships in insects will be reviewed and the effects of insecticides as upsetters of normal water and ionic balance as potentially critical systemic lesions of insecticide intoxication in insects will be discussed.

ABSTRACTS OF PRESENTATIONS (continued)

Entomology in Suburban Forest - John F. Anderson, Department of Entomology
Connecticut Agricultural Experiment Station, New Haven

Salt marsh deer flies and elm spanworms are important pests in Connecticut. One-fifth of the total acreage of the state was defoliated by the elm spanworm and gypsy moth earlier in this decade. I shall discuss the biology of an egg parasite which caused the collapse of the elm spanworm population, and the importance of egg parasites in the forest in general. Tabanids originating in the large salt marsh cause a serious biting problem to residents near the marsh. These field-dwelling parasites are autogenous, rest in trees in yards, and feed only on relatively large mammals, of which man is the most abundant. Their biology will be discussed.

Changing Concepts on the Ecology of Chigger-borne Rickettsiosis and Murine Typhus: - Robert Traub, Department of Microbiology, University of Maryland.

The talk is based on field work in Pakistan, Malaysia and Ethiopia. In the course of discussion of the ecology of these rickettsioses, it will be shown how basic studies on taxonomy of arthropods have contributed to our understanding of the epidemiology and zoogeography of the infections. It will also be pointed out that both chigger-borne rickettsiosis and murine typhus to a great extent fit into the category of "man-made disease".

Phylogeny and Biological Understanding: - Herbert H. Ross, Department of Entomology, University of Georgia.

Perhaps the most distinctive feature of systematics is that it provides historical direction concerning the evolution of biological phenomena. In this talk I will explore phylogeny, the aspect of systematics which is most concerned with this historical view.

Mass Fruiting in Insects: Seventeen-Year Cicada Example: - Thomas E. Moore, Museum of Zoology, University of Michigan.

Periodical cicadas constitute probably the ultimate example of synchronous mass production of reproductive units known. Their complexity adds dimensions not usually considered in predation theory. The coexistence of three species conforms to expected increase in survivorship as demonstrated experimentally for prey of mammals and birds.

The Bruchidae: Specialists in Seeds: - John M. Kingsolver, Systematic Entomology Laboratory, USDA.

A brief look at the family Bruchidae, touching on its relationships to other families, its adaptations to the seed-feeding habit, morphology of larvae and adults, oviposition, larval feeding, pupation, and patterns of host relationships.

ENTOMOLOGY AT THE UNIVERSITY OF ILLINOIS

A BRIEF CHRONOLOGY 1/

- 1866 Benjamin D. Walsh appointed State Entomologist of Illinois.
- 1867 University of Illinois founded.
- 1868 John Wesley Powell elected to Professorship of Natural History.^{2/}
Thomas Johnathan Burrill appointed Assistant Professor of Natural History.
- 1869 Burrill taught first course in Entomology - "Classification of insects, habits of those injurious to the region with means of checking their ravages. Habits of beneficial insects".
- 1871 T. J. Burrill appointed Professor of Botany, Horticulture, and Entomology.
- 1872 W. LeBaron colonized Aphelinus mali as beneficial insect in Illinois.
- 1874 Entomology taught in University Hall.
- 1875 University Catalogue lists "the collection of animals, fossils, shells, birds, mammals, insects, plants, etc. have been made with much care and expense and are steadily increasing ... The collection of Entomology is one of the largest in the West".
- 1877 Stephen Alfred Forbes founded Illinois Laboratory of Natural History.
- 1882 S. A. Forbes appointed State Entomologist of Illinois.
- 1883 William Harrison Garman appointed Assistant State Entomologist.
- 1884 S. A. Forbes appointed Professor of Zoology and Entomology, University of Illinois.
- 1885 S. A. Forbes began "regular teaching of two classes in Zoology and one in Entomology, of the care of the Museum and Zoological Laboratory, and of the oversight and direction of the work of various special students in Zoology and Entomology".
- 1893 S. A. Forbes elected President American Association of Economic Entomologists.

1/ Prepared by R. L. Metcalf and Gene Kritsky

2/ Powell is reported to have delivered only a single lecture at the University before leaving to explore the West.

PICTURE SECTION



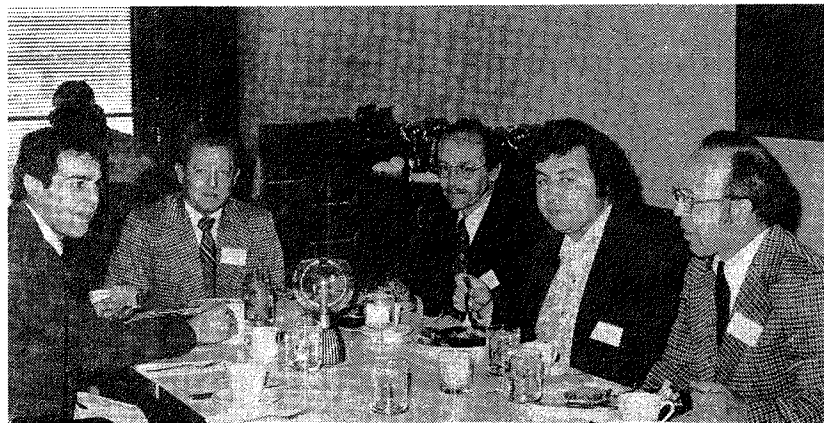
Janet Rapp, Jack Unzicker, Herbert Ross



Jim Kardatzke, Hiro Yanagawa,
John Kingsolver, John Anderson,
William Horsfall, Gottfried Fraenkel



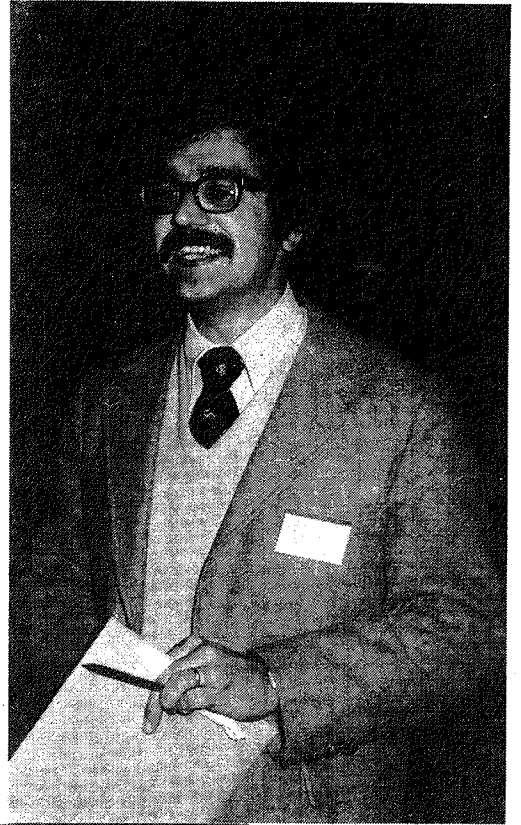
Ralph March, Ruth Stone, Rene Martineau



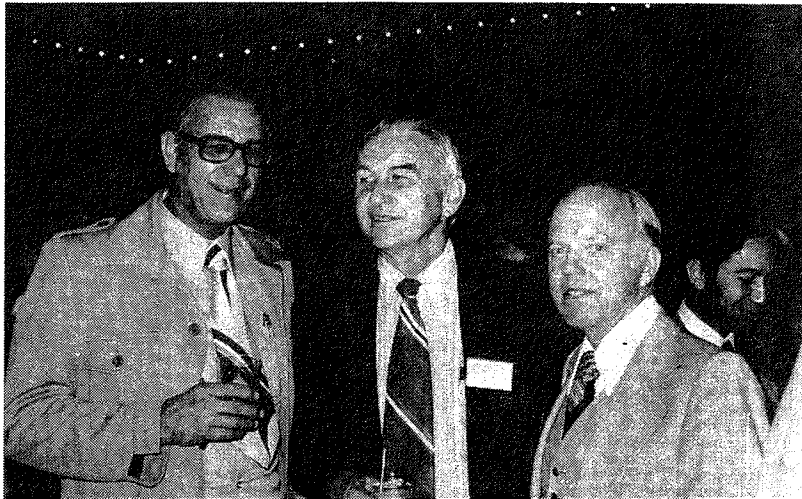


Paul and Betty Dahm

Dave
Denlinger

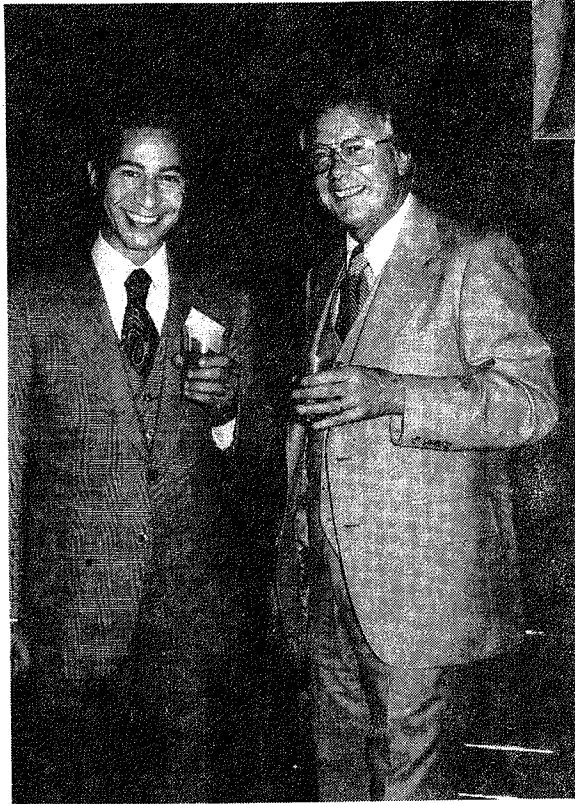


Frank Fisk





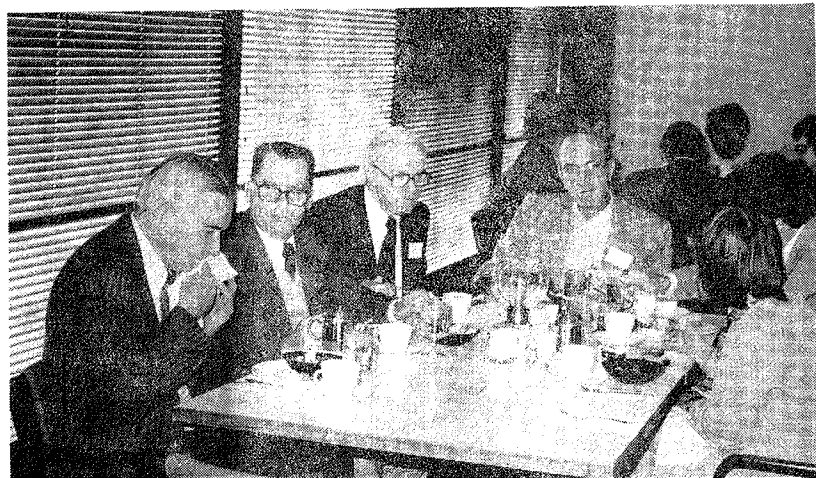
Herbert Ross, Wade Fowler, Paul Dahm



M. Javahery, John Osmun



Ed Mockford, Nono Liem, Dan Strickman





Robert Traub, Mike Lewis, Bob Lewis



Dan Shankland



Paul C. Lemon



Dan Brown, Ross Gunderson, Elizabeth Baldwin,
Chris Maier, Jim Lu, Syed Ali

- 1894 Willis Grant Johns appointed Assistant Entomologist in the State Laboratory of Natural History and Instructor in Entomology. Natural History Building becomes home for Department of Entomology.
- 1900 Justin Watson Folsom appointed to Entomology Faculty. Faculty of Entomology - S. A. Forbes, J. W. Folsom, T. J. Burrill.
- 1903 *J. G. Needham and C. A. Hart - "The Dragonflies of Illinois"*.
- 1906 *J. W. Folsom - "Entomology with Special Reference to its Biological and Ecological Aspects"*.
- 1907 Wesley Pillsbury Flint appointed Chief Entomologist, Natural History Survey.
- 1908 S. A. Forbes re-elected President American Association of Economic Entomologists.
- 1909 Entomology established as separate Department in the University with S. A. Forbes as Head.
- 1910 Faculty of Entomology - S. A. Forbes, J. W. Folsom, T. J. Burrill (retired 1912).
- 1911 Alexander D. MacGillivray appointed to Entomology Faculty.
- 1912 Entomology Club formed, October 12. S. A. Forbes spoke about history of Department.
- 1913 Robert D. Glasgow appointed to Entomology Faculty. James R. Mallock appointed to staff of Natural History Survey. Entomology Club named Hexapoecia "the order of the six-legged".
- 1914 Victor C. Shelford appointed Professor of Zoology.
- 1915 *J. R. Mallock - "The Chironomidae or Midges of Illinois"*.
- 1917 S. A. Forbes appointed Chief Natural History Survey.
- 1918 S. A. Forbes elected to National Academy of Sciences.
- 1920 Faculty of Entomology - S. A. Forbes, J. W. Folsom, R. D. Glasgow, A. D. MacGillivray.

- 1921 Clell Lee Metcalf appointed Head, Department of Entomology.
A. D. MacGillivray - "The Coccidae".
 197 students took Entomology courses.
- 1922 Walter Valentine Balduf appointed to Entomology Faculty.
- 1923 Theodore H. Frison appointed Systematic Entomologist Natural History Survey.
 300th Meeting Hexapoecia, December 12.
A. D. MacGillivray - "External Insect Anatomy".
- 1924 William Patrick Hayes appointed to Entomology Faculty.
- 1925 Vern G. Milum appointed to Entomology Faculty.
- 1927 Department of Entomology moved to Harker Hall.
- 1928 *C. L. Metcalf and W. P. Flint - "Destructive and Useful Insects"*.
- 1929 *T. H. Frison - "Fall and Winter Stoneflies on Plecoptera of Illinois"*.
- 1930 Faculty of Entomology - C. L. Metcalf, W. V. Balduf, W. P. Hayes, V. G. Milum, S. A. Forbes (emeritus).
- 1931 J. W. Folsom elected President Entomological Society of America.
 500th Meeting Hexapoecia, February 26.
 T. H. Frison appointed Chief Natural History Survey.
F. C. Hottes and T. H. Frison - "The Plant Lice or Aphidiidae of Illinois".
- 1932 W. P. Flint elected President American Association of Economic Entomologists.
C. L. Metcalf and W. P. Flint - "Fundamentals of Insect Life".
- 1934 C. L. Metcalf elected President Entomological Society of America.
- 1935 *W. V. Balduf - "Bionomics of Entomophagous Coleoptera"*.
- 1939 Clyde Wilson Kearns appointed to Entomology Faculty.
W. V. Balduf - "Bionomics of Entomophagous Insects".
- 1940 Natural History Survey moves to Natural Resources Building.
 Faculty of Entomology - C. L. Metcalf, W. P. Hayes, W. V. Balduf, V. G. Milum, C. W. Kearns.

- 1942 T. H. Frison - *"Studies of North American Plecoptera"*.
- 1944 H. H. Ross - *"The caddis flies or Trichoptera of Illinois"*.
- 1947 W. P. Hayes appointed Head of Department of Entomology.
Harlow B. Mills appointed Chief Natural History Survey.
Herbert H. Ross becomes Head of Faunistic Section Natural History Survey, Professor of Entomology (joint).
William R. Horsfall appointed to Entomology Faculty.
H. H. Ross - *"The mosquitoes of Illinois"*.
- 1948 George C. Decker appointed to Entomology Faculty (joint).
Gottfried Fraenkel appointed to Entomology Faculty.
H. H. Ross - *"A Textbook of Entomology"*.
- 1950 Faculty of Entomology - W. P. Hayes, W. V. Balduf, V. G. Milum, C. W. Kearns, W. R. Horsfall, G. S. Fraenkel, H. H. Ross, G. C. Decker.
W. P. Hayes elected President Entomological Society of America.
- 1954 H. H. Ross elected President Entomological Society of America.
James G. Sternburg appointed to Entomology Faculty.
950th Meeting Hexapocia.
- 1955 George C. Decker elected President Entomological Society of America.
W. R. Horsfall - *"Mosquitoes: their Bionomics and Relation to Disease"*.
- 1956 Leigh E. Chadwick, appointed Head of Department.
H. H. Ross - *"Evolution and classification of the mountain caddisflies"*.
- 1957 L. J. Stannard, Jr. - *"The Phylogeny and Classification of the North American Genera of the Suborder Tubillifera"*.
- 1958 Richard B. Selander appointed to Entomology Faculty.
- 1960 Faculty of Entomology-L. E. Chadwick, G. C. Decker, G. S. Fraenkel, W. R. Horsfall, C. W. Kearns, H. H. Ross, J. G. Sternburg, W. V. Balduf (emeritus), W. P. Hayes (emeritus), V. G. Milum (emeritus), R. B. Selander.
- 1961 Gilbert P. Waldbauer appointed to Entomology Faculty.
G. S. Fraenkel and D. L. Gunn, *"The Orientation of Animals, Kinesis, Taxes and Compass Reactions"*.
- 1962 W. R. Horsfall, *"Medical Entomology, Arthropods and Human Diseases"*.
H. H. Ross - *"A Synthesis of Evolutionary Theory"*.
- 1963 Clyde W. Kearns appointed Head of Department of Entomology.
Joseph R. Larsen appointed to Entomology Faculty.
Judith H. Willis appointed to Entomology Faculty.

- 1964 Stanley Friedman appointed to Entomology Faculty.
- 1965 William H. Luckmann appointed Chief Entomologist Natural History Survey.
H. H. Ross and W. R. Horsfall - "A Synopsis of Mosquitoes of Illinois".
- 1966 Ellis G. MacLeod appointed to Entomology Faculty.
H. H. Ross - "Understanding Evolutionary Theory".
- 1967 Department completes move to Morrill Hall.
- 1968 Robert L. Metcalf appointed to Entomology Faculty.
Gottfried S. Fraenkel elected to National Academy of Sciences.
Louis J. Stannard - "Thysanoptera or Thrips of Illinois".
- 1969 J. R. Larsen appointed Head of Department of Entomology.
Louis J. Stannard appointed Entomology Faculty (joint).
- 1970 Faculty of Entomology - C. W. Kearns, G. S. Fraenkel, Stanley Friedman,
W. R. Horsfall, E. R. Jaycox, J. R. Larsen, W. H. Luckmann, E. G.
MacLeod, R. L. Metcalf, R. B. Selander, L. J. Stannard, J. G. Sternburg,
Gilbert Waldbauer, J. H. Willis.
- 1971 Peter W. Price appointed to Entomology Faculty.
H. H. Ross and W. E. Ricker - "The Classification, Evolution, and Dispersal of the Winter Stonefly Genus Allocapnia".
Wallace LaBerge appointed to Entomology Faculty (joint).
- 1972 Fred Delcomyn appointed to Entomology Faculty.
W. R. Horsfall, H. W. Fowler, Jr., L. J. Moretti, and J. R. Larsen - "Bionomics and Embryology of the Inland Floodwater Mosquito".
- 1974 Hans E. Hummel appointed to Entomology Faculty.
- 1975 Marcos Kogan appointed to Entomology Faculty (joint).
William G. Ruesink appointed to Entomology Faculty (joint).
R. L. Metcalf and W. H. Luckmann - "Introduction to Insect Pest Management"
Peter W. Price - "Insect Ecology".
- 1976 Stanley Friedman appointed Head of Department.
Stewart H. Berlocher appointed to Entomology Faculty.
R. L. Metcalf and J. J. McKelvey - "The Future for Insecticides - Needs and Prospects".

STAFF AND ALUMNI PRESIDENTS OF
ENTOMOLOGICAL SOCIETY OF AMERICA

S. A. Forbes	1893, 1908	AAEE (Econ Ent)
Herbert Osborn	1899	AAEE
Herbert Osborn	1911	
J. W. Folsom	1931	
W. P. Flint	1932	AAEE
J. J. Davis	1932	AAEE
C. L. Metcalf	1934	
O. A. Johannsen	1937	
J. J. Davis	1938	
W. P. Hayes	1950	
H. H. Ross	1954	
G. C. Decker	1955	
R. L. Metcalf	1958	
J. E. Bussart	1965	
P. O. Ritcher	1970	
William Eden	1972	
Kenneth Knight	1975	

UNIVERSITY OF ILLINOIS ALUMNI
HEADS OF U.S. ENTOMOLOGY DEPARTMENTS

Iowa State University	P. A. Dahm
Mississippi State University	D. L. Shankland
North Carolina State University	K. L. Knight
Ohio State University	Herbert Osborn, A. Peterson
Oregon State University	P. O. Ritcher
Purdue University	John Osmun, J. J. Davis
University of California, Riverside	R. L. Metcalf
University of Connecticut	R. W. DeCoursey
University of Florida	William Eden
University of Illinois	C. W. Kearns, S. Friedman
University of Illinois Agricultural Entomology	W. H. Luckmann
University of Kentucky	Lee Townsend
University of Missouri	Phillip Stone
Washington State University	Robert Harwood
West Virginia University	C. K. Dorsey

EARLY COURSES IN ENTOMOLOGY

by Gene Kritsky

The teaching of entomology at the University of Illinois started over 100 years ago and developed into essentially a core sequence within 50 years. The first entomology course was taught by Professor T.J. Burrill in the spring term of 1869-1870 and had four students. Burrill continued teaching this course until 1883-1884, and the enrollment had increased to 32.

In 1885, Stephen A. Forbes became Head of the Department of Entomology and Zoology. And with the aid of the State Entomologist's Library and insect collection, which Forbes brought from Bloomington, the curriculum quickly developed. From 1885 to 1891 a one semester course was offered in entomology. The course was enlarged to cover 2 semesters during 1892-1894. In 1895, the course was split and another course was added. The courses were titled: "General and Economic Entomology", "Advanced Entomology", and "Practical Entomology". "Elementary Entomology" and "Advanced Economic Entomology" were added in 1896.

By 1922 when C.L. Metcalf became Department Head, entomology students could choose from 15 courses not including thesis research. The undergraduate courses included: Introductory Entomology (Metcalf, Balduf), General Entomology (MacGillivray, Balduf), Apiculture, Insect Morphology - a 2 semester course (MacGillivray), Entomotaxy - a course in entomology techniques (Glasgow), Systematic Entomology, Pests of Special Groups (Metcalf, Balduf, Glasgow), and Medical and Veterinary Entomology (Glasgow). For advanced undergraduates and graduates, the curriculum included Insect Control (Metcalf), Bionomics (Balduf), Taxonomy of Immature Insects - a 2 semester course (MacGillivray), Classification of the Coccidae - a 2 semester course (MacGillivray), Insect Organogony (MacGillivray), and Special Problems (all instructors). For graduate students only there was Insect Anatomy (MacGillivray) and thesis research.

The graduate assistants and instructors who participated during the Forbes tenure as head reads like a Who's Who in entomology, including William H. Garman who eventually became an Assistant Professor 1884-89, Howard Brode 1889-93, W.G. Johnson 1893-96, E.C. Green 1898-99, A.F. Burgess 1899-1900, J.W. Folsom who eventually became a Professor 1900-1930, M.C. Tanquary 1907-12, A.A. Girault 1908-09, R.D. Glasgow 1909-11 and 1913-25(?), Hugh Glasgow 1911-13, Alex D. MacGillivray (Professor) 1911-24, Alvah Peterson 1912-15, Edna Mosher 1915-18, C.C. Hamilton 1915-16, C.S. Spooner 1916-17, J.R. Stear 1917-21, L.B. Ripley 1917-21, C.P. Alexander 1919-21, and P.A. Glick 1921-22.

ENTOMOLOGY STUDENTS

ALI, Syed. This is my third year as a research assistant studying the biodegradability of pesticides under the Environmental Toxicology Program. I have finished most of my research and am looking toward early graduation. The good news is that my wife is graduating this summer with a M.S. in Foods & Nutrition.

Advisor: R. L. Metcalf

AU, Lam Alexander. Yu-chu and I got married last January and our life together is just fantastic. On the other hand I feel sorry that several of my good friends in the department are leaving, I hope they have good fortune. For the past year I have been working mostly on model ecosystems and I plan to do more on pesticide interactions this year.

Advisor: R. L. Metcalf

BELLUCK, David Allan. During the past year I was elected VP of the EGSA and appointed as chairman of the seminar committee. Presently I am working with the City of Champaign Encephalitis Control Program and performing research on pesticide residues and biomagnification in aquatic insects. This will be my third year as a USPHS Traineeship in Toxicology.

Advisor: R. L. Metcalf

BOUTON, Carl E. I have spent most of the year trying to figure out a way to avoid having all of my summer research projects attain their "peak energy investment stage" simultaneously. Last summer's 44-hour marathon of emptying cages, weighing leaf aliquots, feeding larvae, etc. was consummated 4 hours before my scheduled 9 a.m. debut as TA-projectionist for Insect Ecology (this appearance, however, was not consummated). The balance of the year was devoted to helping Mark Mayse with his various celebrations (first job offer, marriage, second job offer, thesis defense, going away party, first homecoming, second homecoming, loading-up-and-leaving-for-good party ...). Somewhere in between there was time for prelims and a trip to the North-Central Branch Meetings in scenic Fargo, North Dakota.

This summer I am continuing research on the influence of predation on the evolution of plant defenses against herbivores.

Advisor: P. W. Price.

BOYD, John A. I am a first year graduate student in the Department of Entomology with Dr. Richard Selander as my advisor. I have received B.S. (1972) and M.S. (1975) degrees in Biology from the University of Illinois, Urbana. During my Master's studies, I was employed at the Illinois Natural History Survey. This past year I have been busy teaching, attending classes, and revising a group of Epicauta (Meloidae) from South America.

Advisor: R. B. Selander

CHIO, Eddie H. The most exciting things that happened in the past year were an addition to the family, a baby girl named Lora on August 31, 1976, passing my preliminary examination on May 24, 1976, and passing my thesis exam on July 14, 1977.

My research is focused on the susceptibility of Diabrotica beetles to insecticides, the mode of action of those toxicants and the resistant mechanism of Diabrotica beetles to insecticides. Working with Drs. Sanborn and Metcalf, we found several interesting results in the past year about herbicides and insecticides in the living organisms. Those data were submitted to four different journals for publication (see publications).

Ping pong is my game. On January 22, 1977, I went up to Madison, Wisconsin to participate in the Chinese Student Reunion. I defeated many ping pong players from 14 other universities and won the men's singles championship. I am the top player on campus as well. We play in the basement of ISR every Friday night. You are welcome to join us.

Advisor: R. L. Metcalf

EVANS, David L. The American Midland Naturalist has just accepted my paper, "Defensive behavior in Callosamia promethea and Hyalophora cecropia (Lepidoptera: Saturniidae)". "The relative defensive behavior in palatable and unpalatable moths" is still being reviewed locally. I am trying to bring my data together so that I can begin writing a paper on avian insectivore feeding behavior. My thesis research is coming along fairly well and I should be finished next year.

Advisor: G. P. Waldbauer

FAROOQUI, Mohammed Y. H. The past year kept me busy completing course work and preparing for prelims. This year I had a chance to work on a "Sludge Project" on soybean and corn, which gave me good experience in that area. Also as a teaching assistant in "Chemistry and Toxicology of Insecticides", I gained a lot in my own field of specialization. My research involves metabolism studies of DDT analogues in houseflies. I have started the work and hope that it will end up with the desired goal, a thesis.

Advisor: R. L. Metcalf

GERDES, Charles F. This year I've studied thrips with scanning electron microscopy and compiled a list of types for thrips in INHS collection. Last year I attended the XVth International Congress of Entomology, collected insects and took pictures on a second camping trip in Canada.

Advisor: L. J. Stannard

GUNDERSEN, Ross W. This past year I have completed my research and thesis on the postembryonic brain development of Phormia regina (black blowfly). This work has interested me in the factors necessary for neuronal integration and constancy during the development of the nervous system.

During the next two years I will be conducting postdoctoral research on neuronal development and differentiation at the University of Miami School of Medicine in Florida.

These past four years in the Department of Entomology have been arduous and frustrating, but now that my doctoral training is ended I can say that it was worthwhile and fulfilling.

Advisor: J. R. Larsen

HARVEY, Jeanne P. I transferred into the Entomology Department during the year from the Cell Biology Program. Since all my course work is finished I have only the major hurdle left to jump before getting a masters degree, i.e., the thesis. I am studying members of the Diabrotica genus using starch gel electrophoresis to examine genetic relationships, and possible hybridization.

Advisor: R. L. Metcalf

HSUEH, Tai-fang. Just realized who is who in this department it is already the end of my second year. I have survived most of the core courses and have also started my research on trehalose related enzymes using the most lovely material. . .flies, of course! Since the XV International Congress last summer my greatest wish is: to present a paper next time.

Advisor: S. Friedman

JACKAI, Louis E. I finished with my course requirements and passed my preliminary examination in September 1976. I have since been working in a more devoted manner on my research. The topic of my thesis research is Induction and Host-selection in the Soybean Looper, Pseudoplusia includens.

During the 1976/77 academic year I hope to have my research completed.

Life outside academia has been mostly at low gear, but has remained interesting enough to allow for wholesome synchronization of body and soul. Working with the soybean looper has a way of putting one's social life 'out of synch.'

Advisor: M. Kogan

KARDATZKE, James T. I am a Captain in the US Army and finished my doctorate in May, 1977. The topic of my thesis was "Hatching responses and larval toxinosis for Aedes mosquitoes". In June, I returned to active service at Fort Sam Houston, San Antonio, Texas where I am attending the Officers' advanced course. I am married to the former Kay Tabaka and have a 2 1/2 year little girl named Kathy and a 4 year old mutt named Tony.

Advisor: W. R. Horsfall

KRITSKY, Gene R. In the past 18 months I have completed my masters, prelims, and am now finishing up my Ph.D. Between research and travel, I have been working on photography, egyptology, and Department history. I have amassed a large amount of Department memorabilia which is being deposited in the Archives for the safe enjoyment of future department members.

Advisor: L. J. Stannard

LISOWSKI, Edward A. I entered the department this past January after finishing my B.S. degree in December. After a semester of coursework I hope to begin the field work for my master's thesis this summer. Using electrophoresis I will be looking at allozyme variation in a highly polymorphic species of Tephritid flies.

Advisor: S. H. Berlocher

MARI MUTT, José A. The year 1976 and, so far 1977, have been most productive years for my schoolwork and research. During this time I finished all course requirements and passed my prelims. Three of my papers have been published during this time and several others have been accepted for publication. Two insect species (neither of them Collembola!) are being named after me.

I did quite a lot of travelling during this time. Worthy of mention are the insect collecting trip to Arizona last summer, the trip to the International Congress of Entomology in Washington and, of course, my visit to Puerto Rico (home) last Christmas.

The future seems bright. I look forward to a job in Puerto Rico, either with the University or with the Agricultural Experiment Station.

Advisor: L. J. Stannard

MAYSE, Mark A. My days as a graduate student are now completed and I have accepted a position as assistant professor-extension survey entomologist at the University of Arkansas, Fayetteville. During the past summer my research involved colonization patterns shown by arthropods in soybean, and the effects of different row width plantings of soybean on the population levels of various herbivores and their natural enemies.

Advisor: P. W. Price

MOLLET, Judith A. This has been my second year at the University of Illinois and I plan to finish my M.S. degree this summer. During the year I finished my course work, much of it for the second time as Illinois would not accept my previous work done as an undergraduate at U.C. Riverside, so it was not very challenging. However, I have enjoyed working at the Illinois Natural History Survey, on my research, and I attended the North Central Branch meetings at Fargo N.D. where I presented a paper. After completion of my M.S. degree I plan to find a job somewhere in Illinois and perhaps in a few years return to school for a Ph.D. For now through, continuing to repeat coursework I have had before does not interest me and it appears at this time that I will learn much more outside of school than in.

ed. note. As is known to all alumni, core course requirements may be fulfilled by passing proficiency examinations. Ms. Mollet took several of these and was, in fact, granted an exemption in Insect Taxonomy on the basis of one such.

Advisor: W. G. Ruesink

REDBORG, Kurt E. The year has been a busy one for the Redborg's since returning to the campus from Dixon Springs Agricultural Center in Southern Illinois where I was employed by the Illinois Natural History Survey. In my spare time I was able to conduct some much needed field work on the Mantispidae. Our stay at DSAC was very enjoyable, highlighted by the birth of our first child, Kristen Erica.

The summer is being spent writing my dissertation, my speed being directly proportional to the likelihood of procuring a job. Anne has an RA position with the Department of Plant Pathology studying Soybean Mosaic Virus. Twenty-month old Kristen is already a budding biologist, her latest project being the study of mortality in ants (Formicidae: Hymenoptera) as related to stress factors induced by dorso-ventral compression.

Advisor: E. G. MacLeod

STRICKMAN, Daniel A. During the two years since the last Newsletter I have done several things which seemed important to my progress as an entomologist. I received my master's degree in May, 1976, after writing a thesis concerning the role of moisture in the selection of oviposition sites by Aedes vexans and Ae. trivittatus. I spent the summer of 1976 doing field work at the Macon Mosquito Abatement District in Decatur, Illinois. My first article appeared in June, 1977. At the time of this writing I am again in Decatur doing more field work concerned with some practical problems involved in the management of mosquitoes.

During the coming year I hope to complete the requirements for a Ph.D. This will involve more work in the laboratory and the composition of a thesis. I have Dr. W. R. Horsfall, my advisor, to thank for his encouragement and skillful direction in all of these efforts.

Advisor: W. R. Horsfall

WAGNER, Steven W. I arrived last fall after receiving my B.A. in May 1975 from Wabash College with a major in biology. The interim year was spent in Alpine, Texas with 6 months of the stay spent studying the life histories of insects associated with locoweed, Astragalus sp.

Between my course work of this last year and next I plan to travel south for a summer at the 'Survey'.

I am working with Dr. William Ruesink on the affects of predators and parasites on the population dynamics of the corn leaf aphid. Provided the aphids show up I anticipate finishing my M.S. by next spring.

Advisor: W. G. Ruesink

WALKER, William F. This has been an enjoyable year for me, with no required courses and no prelims. After spending much of the summer learning about marine invertebrates, I have settled down to making further progress on the role of JH in mating and feeding behavior in the large milkweed bug. As a result of these studies I have also become interested in the evolutionary aspects of mating and sperm utilization strategies. After spending most of this summer in distant places, I hope to finish my thesis next year.

Advisor: J. H. Willis

WALTON, Barbara T. Work has been progressing on my studies of metabolism of two insect growth regulators and the effects of these insecticides on cuticle production in Culex quinquefasciatus. I'm looking forward to joining the staff at Oak Ridge National Laboratory upon completion of my thesis. My husband, Bob, will be continuing studies in chemistry at the University of Tennessee in nearby Knoxville.

Travel for the year has been limited to a trip to Fargo, North Dakota, to present a paper at the E.S.A. branch meeting and trips to Minnesota, Ohio, and Pennsylvania to visit with family and friends.

Advisor: R. L. Metcalf

WATSON, Phillip L. This was my first year after prelims and was spent mostly on my research. My research centers around the interaction between a microsperidian pathogen, Nosema whitei and a population of Tribolium confusum. In conjunction with this study. I am attempting to create a predictive computer model explaining that interaction.

I did also get the pleasure of attending a international colloquium on invertebrate pathology in Kingston, Ontario last year and will present a paper at this years meetings of the Society of Invertebrate Pathology in August in East Lansing, Michigan. I am looking forward to finishing my study this year.

Advisor: W. H. Luckmann

WEBB, Donald W. Since becoming a graduate of the department of Entomology in 1976 my time has been spent living in the library to get through insect ecology and taking up residency in the physiology labs to Ascertain why my experiments did not work. Interspersed between these activities is a full time job as an Associate Taxonomist with the Illinois Natural History Survey.

Advisor: J. G. Sternburg

WEIS, Arthur E. I arrived at the U of I last fall. Both my wife Audrey and myself found the transition from the "big city" (Chicago) to C.U. most enjoyable. While I'm at school, trumpeting down the walls of ignorance, Audrey works as a mental health therapist at the Adler Zone Center.

This summer, I'm doing research on the Cecidomiidae. Little is now known about their evolutionary ecology, but I hope to be able to make some sense of their unusual reproductive biology.

Advisor: P. W. Price

NONACADEMIC AND STAFF

The Departmental Office has seen many new faces during the past two years. Ruth Plymire, who had been with the department for fourteen years moved to the School of Life Sciences Office with Dr. Larsen. She was replaced by Marlene Talbott, who was in the department for about six months before moving with her family to Florida. Donna Mohr became the new staff secretary in the department on August 2, 1976.

Judy Michaels was replaced by Jill Edwards on October 1, 1975. Bonnie McMillan was replaced by Mary Sargent on May 16, 1976 and Eloise Duvall is still the "Queen of the Creepie Crawlies" (Daily Illini, 1976).

JAMES P. FITZSIMMONS

During the past year we have made two trips to Florida.

We have also moved to the country from Urbana and enjoy it much. We have no new additions to the family.

PO YUNG LU

Last year was the milestone in our life. Our first son, Bryant Jayheng was born on April 1st. He is a very happy boy. I made a business trip to Pomona College, California to consult Dr. Hanseh on partition coefficients of organic compounds. Also made side trips to University of California, Riverside and California Tech. It was a very fruitful trip.

E. RUTH MILLHOLIN

Its been a busy year in the lab. Dr. Metcalf and Dr. Lu were on Sabbatical Leave for a few months while those who remained behind endeavored to keep the research going forward. We have been very busy doing some partition coefficient studies for the Environmental Protection Agency.

The Centennial Celebration of the Department was a memorable and thoroughly enjoyable affair. I'm glad so many could return for it.

On the personal side, a quick and interesting trip to Yucatan and Honduras in March got me away from our horrendous winter for a few days. Having my son elected to Eta Kappa Nu the Electrical Engineering Honorary has been the high point of the year.

NEWS ABOUT THE FACULTY

STEWART H. BERLOCHER

Since I have been in the department, and in Urbana, for less than a year, most of my activity has been directed towards moving in. I have found, not to my surprise, that moving into and organizing a laboratory takes much more time than moving into an apartment. All my equipment is finally functioning, though, and I have just resumed my efforts to find out how many species of Rhagoletis fruit flies there really are.

Looking back over the last year, I believe that the two most memorable events in my life here have been teaching my first class, and surviving the winter. As a native Texan and a southern Texan at that, I guess I would attach the most significance to the latter event.

All in all, I find Urbana to be an interesting place, although there is a definite paucity of enchiladas.

FRED DELCOMYN

Last year was an interesting one from several points of view. My own studies of the function of giant fibers in cockroaches came along well, and both my students, Darryl Daley and Barbara Mendius, are beginning to make good progress on their own thesis projects. Everyone in the lab was stimulated by attendance at the Neuroscience meetings in Toronto in November.

On a personal level the year was brightened for me and my wife by the arrival of our first child, Julia, who obviously takes after her mother in her ability to charm everyone she meets. She will probably begin taking an interest in insects this summer!

GOTTFRIED S. FRAENKEL

One of the most gratifying by-products of a long academic career are the close personal relations which develop over the years with colleagues and former co-workers and students. During the summer-fall of 1976 I took 2 months off to visit old friends of this kind in England (Miriam Rothschild), Denmark (Ellinor Bro Larsen), Prague (Jan Zdarek), Munich (my home town), Israel (Rachel Galun, Eliahu Zlotkin) and Paris (Marie Raabe and S. Fuzeau-Braesch).

My research is still, and probably eternally, concerned with the intricate hormonal relationships during pupariation of flies. This has been my field of enterprise for the past 43 years (with large gaps). It

involves not only ecdysone, as is still largely believed, but at least two proteinic hormones of neurosecretory origin, and a role of cAMP. Some of this work is now at long last in the process of being published. My chief co-workers on this problem over the past two years were James Blechl (who is now graduating) and Dr. I. Morris Seligman (now teaching at Illinois State at Normal).

Other recent or current research, not surprisingly also implying fly larvae, concern the development of undersized fly larvae (already published), sources of energy for fly larvae (with Dianne Pollakoff, a recent graduate), and the utilization of the food in fleshfly larvae.

The research with Dr. Carol Pappas on the effect of nutritional and hormonal factors on oogenesis in flies is now at long last in the process of publication.

Dr. Jan Zdarek, from Prague, who worked with me before for 2 years (1968-1970) is now back here for a spell of 6 months, to finish old work, and hopefully gain new insight into the processes which form the fly puparium.

STANLEY FRIEDMAN

These past two years have been hectic. Having been accorded the singular honor of headship of our department, I have been trying to make my way through the morass of bureaucratic interaction among faculty, school, and college. My success is attested by our continued existence as a viable department. On the brighter side, Andrew Chen and I have completed some research on the hormones involved with insect blood sugar homeostasis (for which he won this year's Balduf Award), and Andrew has now graduated. Malethu Mathew has been trying to work out a perfusion technique which should be of great assistance in measuring fluxes of compounds in the blood of certain insects, and Tai-fang Hsueh and I are doing a taxonomic characterization of a highly regulated enzyme directly involved with energy utilization. I have also had the pleasure of being associated this year with Dr. Hiro-Aki Yanagawa of the Sericultural Institute in Tokyo, who is working with me on some of the biochemistry of blood sugar synthesis. And, Dr. Maria Rosales-Sharp has brought to our laboratory some of her expertise in the culture of the malarial protozoan in and out of mosquitoes, so we hope to be able to gain some insights into the relationship between the definitive host and causal agent of malaria.

WILLIAM R. HORSFALL

I became a professor emeritus May 21, 1976 after 30 years with the department. I have remained active as an advisor to 3 Ph.D. candidates yet to complete their degrees. Other activities include: (1) consulting entomologist to mosquito abatement districts and municipalities with emphasis on prevention of transmission of encephalitis virus to humans; (2) writing for the departmental leaflet series announced elsewhere in this issue of the NEWSLETTER; (3) travelling (1 month in Italy).

During the spring semester (1977) I have dusted off my spurs and am teaching the course in medical entomology. Even after a year out of the classroom, I find the old drive is still there, and I enjoy the direct contact as much as ever.

HANS E. HUMMEL

Research, teaching, public speaking and departmental service took equal shares of time in 1976 and 1977.

Research was proceeding briskly with experiments towards the understanding of sex pheromone communication in some Lepidoptera and Coleoptera species. We now find more and more examples of multiple pheromones supporting the notion that insects use more than 1 chemical channel for relating their messages. Often, the demands of a steady insect supply for research and the seasonal character of natural insect populations are in conflict. While Drs. Sternburg and Waldbauer advised with Hyalophora cecropia and H. promethea rearing, no such generous information source exists for the economically important beetles of the genus Diabrotica. Thus, rearing proved to be a challenge. Due to the persistence of some of my students, however, breakthroughs have been accomplished leading to the partial characterization of the mating pheromones of the Southern corn rootworm and the Striped cucumber beetle. Also, Black cutworm chemical communication is being studied jointly with members of the Illinois Natural History Survey. Results of most of these endeavors have been presented at various international (Hamburg 1976), national (New Orleans 1975) and regional meetings (Denver 1976 and Fargo 1977). Invited seminars at the USDA laboratory in Peoria (1976) and at various intramural departments (1977) contributed to the ongoing series of public information.

"Fundamentals of insect control" (Entomology 319, jointly taught with Dr. R. L. Metcalf in the fall of 1976) has now fully been interwoven with the ideas of pest management and enjoys campus-wide popularity. "Invertebrate chemical communication", a course first taught as a special project in the fall of 1976, very recently received full standing and will be taught as Entomology 323 in the spring of 1978. While Dr. Metcalf was on sabbatical leave, I taught insect toxicology (Entomology 420) in the spring of 1977.

Teaching of all these courses has been a most enjoyable experience and stimulated plans for another new course in "Chemical ecology" to be jointly offered with several cooperating faculty members of other departments.

In the summer of 1976 the American Chemical Society awarded me a travel grant to participate in the 10th International Congress of Biochemistry and to present a poster within the section of insect biochemistry. Shortly thereafter I participated in the 15th International Congress of Entomology at Washington, D. C. Another highlight was the invitation of the Entomological Society of America to organize and moderate a symposium on "Insect sex pheromone communication" on March 30, 1977. A well attended panel discussion on the subject "prospects for pest management applications of pheromones during the next decade" was the part of the program which attempted a prognosis for the immediate future. It enjoyed an overwhelming response by all participants.

Last not least I had the privilege to serve on 4 departmental and School committees. The amount of time spent was more than outweighed by the experience gained regarding internal mechanisms of this institution. Life has been good to me and let me settle down after 18 years as a traveling scholar.

ELBERT R. JAYCOX

In 1976 I revised and enlarged our beekeeping manual that had gone out of print. The new book, *Beekeeping in the Midwest*, is available in hardback edition from University of Illinois Press or in paperback from the Agricultural Publications Office. The printing of the paperback edition was shared by Wisconsin, Iowa, and Purdue where it is used as a text and extension publication as it is in Illinois.

From now on we intend to offer two classes on bees each fall: Elementary Beekeeping, probably as Horticulture-Entomology 131, and Behavior of Honey Bees, Horticulture-Entomology 361. The beekeeping class was revived in spring semester 1975 with 65 students and about 10 auditors. Included were a couple of entomology staff members. By changing the class to the fall semester, especially with our August start, we can give the students some field trips or labs to see at close range how bees live.

In May 1976, the family and I made a business-leisure trip to Germany, Austria, and Switzerland, visiting laboratories and research institutes. We also spent four days in the Austrian Tirol where I observed how bees are managed in bee houses. In spite of the dry year, the Austrians harvested a record crop of honey, much of it as honeydew from conifers. The dry weather favored development of large populations of insects that produce honeydew.

MARCOS KOGAN

1976 was an eventful year. It started out with a period at the newly formed National Soybean Research Center in Londrina, Parana, Brazil. A pest management program initiated in Brazil during the 1974/1975 season was repeated with very encouraging results. This program that I started in collaboration with Sam Turnipseed from Clemson, was adopted nationally in Brazil and in the pilot farms where it has been applied it brought about a considerable reduction in the level of insecticide use.

Following the Brazilian trip I went to Thailand to attend a regional conference on soybean production, protection and use, sponsored by the U. of I. - INTSOY program and the Asian Vegetable Research and Development Center, from Taiwan. In Thailand I was hosted by Tawatchai Sitchawat, who received his M.S. from the U. of I. a year before. It was good to meet a former student in his native country. It made me feel at home. Thailand is a fascinating part of the world.

Except for shorter trips in the U.S. I spent the rest of the year trying to catch up with the work at home. Sathorn Sirisingh, also from Thailand, completed his Ph.D. degree by the middle of the year, and our summer program was very active.

Work in the field concentrated on host-plant resistance, economic injury levels for potato leafhoppers, and on sampling procedures. I was very lucky to obtain support for two new projects on the physiology of soybean resistance to insect pests and the study of biological races of the Mexican bean beetle. In August I took time out to attend the International Congress of Entomology in Washington, but after that much travel I just could not afford to attend the National Meetings in Hawaii.

This was, in fact, my first year on the staff of the Department of Entomology. It has been a gratifying experience which even resulted in my first contact with undergraduates when I participated with Stan Friedman and Bill Ruesink in the teaching of Entomology 101.

JOSEPH R. LARSEN

My activities as Director of the School of Life Sciences have precluded my spending as much time in the department as I would like. However, I am still very much involved in my research with insect sensory receptors and have been able to maintain an active program studying the ultrastructure of sensory receptors. Prof. Armand Whitehead from Brigham Young University was visiting in my lab this past year doing postdoctoral work on the taste receptor of the honey bee and I still have two graduate students actively pursuing their degree programs. Mary Fisher continues to hold the laboratory together and does a superb job as technician and general manager of the laboratory. I am still very much involved with the department in teaching half of insect morphology as well as my responsibilities in Biology 110-111.

The Larsen family now finds itself spread about the country and increasing in numbers. Our oldest daughter, Pam, and her husband Dave are moving to St. Louis, Missouri where he has just accepted a position in the banking business having finished his MBA degree at Illinois. We are now the proud grandparents of 3 lovely young granddaughters. Our #2 daughter, Deborah, was recently engaged and contemplating a wedding in late summer 1977. Our youngest, Jennifer, is approaching her senior year in high school and anxiously looking forward to college.

Our travel this past year was limited to a few days in St. Louis, a trip to Brigham Young University to evaluate their graduate education in life sciences, and a few pleasant days in Turkey Run secluded from the world of television and telephones.

WILLIAM H. LUCKMANN

1976 marks 11 years as Head, Section of Economic Entomology, Illinois Natural History Survey. Being an administrator is rewarding since you have the opportunity to see good people and programs develop and to lend your support. I spend whatever extra time I have working with several technicians and students on the biology and behavior of several insects attacking corn, with emphasis on detection and prediction. I have proposed adoption of a state-wide program for pest management of corn rootworms based primarily on cultural practices and a deliberate commitment by a majority of Illinois corn producers. It is a difficult task selling the plant to so many people.

ELLIS G. MacLEOD

Research is continuing on several long-term projects involving the biology of the Neuroptera. Field work in connection with these studies is being pursued in southern Illinois, New Jersey and in Florida. A visit last summer to England with its long tradition of Neuropterology did much to provide a feel for the roots of this subject.

ROBERT L. METCALF

The spring semester 1977 was spent on sabbatical leave. Esther and I spent 3 weeks at the University of California, Davis collaborating with our son Robert A. Metcalf, Assistant Professor of Zoology, in a study of the population genetics of Diabrotica beetles. We traveled to Taiwan for 3 weeks as consultants to the Joint Commission on Rural Reconstruction. During this visit we traveled nearly 2000 miles by automobile visiting research laboratories, advising about problems of pesticide usage and environmental pollution and lecturing about pest management. A final week was spent at the University of Hawaii, collaborating with Prof. W. C. Mitchell on continuing studies of the nature of the olfactory receptors of the oriental fruitfly, Dacus dorsalis.

PETER W. PRICE

Travels out of the state included a two week lecturing trip to the University of Texas, Austin in April, and a visit to Washington, D. C. for the International Congress of Entomology in August. In June our second son, Robin Andrew, was born. Research and teaching continued along the same lines as in previous years. I shall be on sabbatical this coming year, 1977-1978, assisted by the receipt of a Guggenheim Fellowship. I hope to spend the first six months traveling in Europe, and the second half year back here in the U.S.

MARIA ROSALES-SHARP

In July 1975, I got back from the southwest, found a niche in the department (many thanks to Drs. Larsen and Friedman) and as visiting assistant professor am able to continue my research on the in vitro cultivation of the malarial parasite.

I made a trip to Europe in October-November 1976, and it was very enjoyable and informative, business- and research-wise. I was invited to give a seminar at the Polish Academy of Science, Department of Cellular Biochemistry, Warsaw, Poland. Topic: Cultivation of the Sporogonic forms of the malarial parasite.

I also attended an invited workshop (March 9-12, 1977) on the Biology and cultivation of malarial parasite at the Rockefeller University and presently serve as temporary advisor to WHO Special Programme for Research and Training in Tropical Diseases.