ENTOMOLOGY NEWSLETTER

Department of Entomology
University of Illinois
at Urbana-Champaign

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ABOUT THE COVER

Please note the cover, an original drawing by Alice Prickett, our School artist. We have tried to make it suitable for framing. If you cut it on the outside lines, it can be directly inserted into a $2.00 8 X 10 frame obtainable from your nearest cut-rate drug store. Hang it on your wall as a memento of your department in 1984. We'll be back in '87.

ACKNOWLEDGEMENTS

Thanks are due our departmental office staff for the hours they have spent getting the material together for the Newsletter and for keeping all of us as happy as we have ever been. I speak here of Dorothy Houchens, who is in charge, Shelley Hendershott and Lois Streid. They are not only intelligent and cooperative, but are genuinely nice people.

I must also mention that Eloise Duvall, our main source of large numbers of insect species for classroom and research over the last years is even more actively participating in departmental activities. Although she claims that she will be retiring within the foreseeable future, we reject this idea and continue to operate on the assumption that we will not let a good thing go.

FROM THE HEAD

At last year's National Meetings, a number of alumni asked about friends from whom they and we had not heard for some time. We decided to make some inquiries, and this Newsletter contains the fruit of those endeavors. You will find news of many of your old friends and lost colleagues written in their own inimitable styles (edited slightly) from pages 41 to 79. I have taken a great deal of pleasure in reading of all of these doings, and it may be that our collection of information will lead some of you to pick up your pens and write to people you remember fondly, but with whom you have not maintained contact. Please notify anyone you know who has not responded that we would appreciate hearing from her/him, and that we will again be asking for a paragraph in about three years.

Now to business about our current departmental activities.

The past few years have been full of prizes and awards for both senior and junior faculty. Here are some of the more interesting ones:

May Berenbaum
1984 Presidential Young Investigators Award (only 3 given in Ecology this year in the entire U.S.). A five year award for young scientists of significant achievement and great promise

Fred Delcomyn
1983 Fellow of AAAS

Gottfried Fraenkel
1980 Honorary Doctorate - University ofTours, France
1984 Honorary Doctorate - Hebrew University,Jerusalem, Israel

Stanley Friedman
1983 Lady Davis Visiting Professorship in Zoology - Hebrew University, Jerusalem, Israel

Joseph Larsen
1984 Brigham Young University Distinguished Visiting Professorship

Robert Metcalf
1983 Founder's Award, Society of Environmental Toxicology and Chemistry

Our lives as members of the School of Life Sciences have been somewhat changed with the advent of a new director, Dr. S. Kaplan, most recently head of the Microbiology department. With this move, we welcome J. R. Larsen back into the departmental fold as a full-time member and look forward to his assistance and support over these next several years.

Things in Life Sciences are complicated by both the financial problems which every public university is presently facing, and the academic problems incurred by the strong turn toward molecular biology which is being taken in every segment of the biological sciences. We are sensitive to these latter needs and have been involved in extended departmental discussion, leading to a new graduate course in insect genetics, into which

we hope to incorporate an entomological understanding of the utilization of genetic engineering in pest management. We have, as well, a number of other matters of academic interest to report. Our advanced course series in Pest Management is now on line: Dr. J. V. Maddox is teaching Insect Pathology with great success; a course in Biological Control, run by Dr. Kogan and, now, Dr. Irwin (see below for vitae) will be given next year; and, last, but not least, Modeling of Insect Ecosystems is being taught by Bill Ruesink. We have also instituted a course in Chemical Ecology, given by Drs. Berenbaum, Metcalf, and David Seigler, the latter a Professor of Plant Biology, who recently obtained a joint appointment with us (see below for vitae).

As far as the well being and growth of the department is concerned, we are more than holding our own, although it appears that our medical entomologist, Barry Miller, who was hired to take the place of Duane Gubler (presently head of a CDC section in Puerto Rico), is also in the process of being lured away by the Federal government to service in CDC at Fort Collins, Colorado. There will be no replacement for him at this time, and the future remains cloudy with respect to the position itself.

On the positive side, we are pleased to announce two new joint appointments: Dr. M. E. Irwin from the Section of Economic Entomology of the Natural History Survey and Dr. D. S. Seigler from the Department of Plant Biology (nee Botany).

Mike Irwin of the Survey is an old friend or colleague of many of us, but for those who do not know him, a short vitae follows:

Dr. Irwin received his Ph.D. in Entomology at U. Cal. Riverside in 1971, writing his thesis on biocontrol of pink bollworm. He spent his first three postgraduate years as a taxonomist at the Natal Museum in South Africa, and since then has been employed at the Natural History Survey. Dr. Irwin's interests are in research and outreach activities on pest management of the soybean ecosystem, especially as it relates to developing countries in tropical and subtropical environments. In this, he has been extremely active in the International Soybean Program (INTSOY). His specific research presently centers on soybean virus epidemiology and predator-prey interactions.

David Seigler, in the Department of Botany since 1970 and a Professor of Plant Biology since 1980, is an organic chemist interested in secondary plant compounds. He became involved with us as a result of finding mutual ground with the large number of our faculty working on Insect-Host Plant interactions. His eagerness to take on the responsibilities of helping our graduate students, participating in a course in Chemical Ecology, and, generally, becoming part of what we hope will be an Insect-Host Plant training program prompted our offer of a joint appointment.

I believe that we have gained enormously from adding these excellent scientists to our teaching and research staff.

In further recording the welfare of the department, I tell you with a feeling of great sadness that Bill Luckmann has retired as of September 1. Although I am convinced that our relationship with the Survey will continue to flourish and grow with the movement of Bill Ruesink into the position, I cannot help but comment that it was only because of Luckmann's affection

for us and his recognition of the best interests of both the Section and the department that the bond between us has become so strong. I hope that those of you who were students during his time in office will come to recognize his invaluable contribution to your education through his untiring efforts to bring out our best. If you haven't yet done so, a letter to Bill might be in order. His address is:

Dr. William Luckmann
172 Natural Resources Building
607 E. Peabody
Champaign, IL 61820

since he will continue to work with some of the programs in which he was involved during his tenure in office.

I must finally comment in passing about the physical facilities in which the department has taught its courses over the years. Harker Hall remains the backbone of our classroom space and we expend money every year to keep it functional, but those of you who have taken Insect Physiology and Morphology over the past 15 years will be pleased to know that the suite on the 4th floor of the Natural History Building (the same rooms in which it rained on one occasion, the ceiling fell on Dr. Sternburg on another, and in which, in winter, we were often forced to wear gloves and outer clothing) has been turned into a thing of beauty, worthy of the best of entomology. The quality of teaching will not improve (it could not get better), but the ambiance - - ah!

As for myself, I carry on in the best way I know, bleeding a little every time the department has a set back, but enthusiastically looking forward to a future filled with research, teaching, and interaction with students and colleagues who, I hope, will enhance the reputation of the department as you from our past have continued to do.

My best regards.

S.F.

G. S. Fraenkel 1901 - 1984

It seems that bad news is never singular. I write this further paragraph to report on the death of our most esteemed colleague and my mentor and friend, Gottfried Fraenkel, who died of leukemia on Friday, October 27 at age 83. Those of you who were privileged to know him might be interested in the short biography I wrote about him in 1980 which appeared in a symposium volume and is reproduced below. At the end of that piece I said, "Fraenkel has been physically "home" for the past twenty five years, but his intellectual voyage continues unabated." You will be pleased but not surprised to hear that he continued to pursue his most recent research interests, Factors Influencing Blowfly Eclosion, until two weeks before his death.

(from "Insect Endocrinology and Nutrition" Plenum Press, 1981)

In examining the corpus of G. S. Fraenkel's achievement, one is struck by the breadth of his subject matter as well as his mastery of the experimental method. It is to honor this diversity of interest that we have bound together in this volume two symposia of very different thematic content. However, even these titles, insect nutrition and endocrinology, hardly indicate the range of his effort, which encompasses such other areas as invertebrate behavior, coordination of function, temperature adaptation and host selection. Mindful of this large number of very different subjects, we might well derive some interesting insights from an examination of his scientific life and the contexts in which his various contributions were made.

Gottfried Samuel Fraenkel was born on April 23, 1901 in Munich, Germany, and as a young man became a member of one of the Zionist youth groups which in the period after the first World War provided the ideology and manpower that ultimately led to the birth of the state of Israel. It was at this time that he made a commitment to go to Palestine as a teacher, and he pursued his course vigorously, completing the primary step in late 1925 with a Ph.D. in Zoology at the University of Munich. His major interest as a student was animal behavior and orientation, and his thesis provided the first real proof that the statocysts in medusae (jellyfish) really functioned as such.

Before taking the plunge into the unsettled conditions of the middle East, he decided on a postdoctoral stint, and was lucky enough to obtain an International Education Board fellowship for a year, permitting him to work through 1927 at the Marine Zoological Stations in Naples (Italy), Roscoff (France), and Plymouth (England), with a short time in Alfred Kühn's laboratory in Göttingen. All of these studies were directly concerned with orientation, or, as in the case of his paper with Kühn (on the spectral photosensitivity of bees) based upon orientation reactions.

His European journeys finished, Fraenkel went to Palestine to become a teacher, but was hardly settled in when he was introduced to F. S. Bodenheimer, an outstanding entomologist and the newly appointed head of the Department of Zoology at the Hebrew University. This

meeting changed Fraenkel's life, since with the offer of an assistantship by Bodenheimer, he was taken from the world of a school teacher into the world of research. Within a few months, a locust outbreak occurred (the first in Palestine in 15 years), and Fraenkel plunged into the investigations which were to culminate in his classical papers on the physiology and behavior of the migratory locust and his more general studies on migratory behavior and coordination of function leading to and during flight. It is well to point out that it was while working on locust behavior that he discovered the tarsal reflex (removal of the substrate from tarsal contact will cause certain insects to assume a flight posture and begin wing flapping), which opened the way for all further laboratory studies on insect flight. (It was also the Palestine work coupled with that done earlier in Naples which led to the classical text, "Orientation of Animals", written with Donald Gunn in 1940.)

As a result of this independent success, his interactions with Bodenheimer were not easy. His scientific life became so constricting and uncomfortable, that ideals and interest notwithstanding, he felt impelled to leave, moving back to Germany in 1931, where in spite of being a Jew he attained the position of Privatdozent in the University of Frankfurt. He had hardly begun his academic career, when in 1933, under the pressure of the Nazis, he and all of the other Jewish faculty were fired. He emigrated to England, and, through the efforts of English scientists who were financially helping to support their displaced colleagues, was able to secure a post as a Research Associate in University College of the University of London. He was at University College for only two years, but it was in this position, under the pressures of a new language, a new culture, a new family, and almost no salary, that the classical fly larva ligation experiments were performed. This work, establishing the presence of a moulting hormone in flies, and that of Wigglesworth on Rhodnius (which, as Fraenkel later found, was taking place at the same time just around the corner in the London School of Tropical Hygiene and Medicine), form two of the cornerstones of modern insect endocrinology.

In 1935, he was hired into a post in insect physiology (perhaps the first full time teaching position in this discipline in the world), in the Department of Zoology and Applied Entomology at the Imperial College of London University. It was expected by the administration that he would begin to think in practical terms, but this was not to be, since his interest in flies, stimulated by his work on the hormonal control of development, became even stronger, and his next four years were spent examining the morphological and physiological adaptations of their various life stages. In this job he was meeting many other biologists at scientific gatherings, and it was at one of these that he met young Pringle, whose work on insect campaniform organs and unique insights led to their joint publications on the halteres of Diptera. It was here also that he met and described to the physical chemist, Rudall, the strange changes occurring in the larval fly integument at pupariation, a discussion which was to provoke a fruitful collaboration on the cuticle, and Rudall's lifelong interest in cuticle structure.

When, in 1939, England went to war, the Zoology-Entomology Department of the Imperial College was evacuated to Slough and the Pest Infestation Lab was inaugurated. Munro, the Professor and head of department, a toxicologist by interest, intended that Fraenkel would work on insecticides, but, still independent, Fraenkel chose to take the view that understanding the nutritional requirements of stored grain pests would develop the intelligence with which to deal with them successfully. It is doubtful whether Fraenkel's work contributed directly to the war effort, but his experiments and results then and later have shaped the views of a generation of insect nutritionists and applied entomologists. Needless to say, his approach to his task did not endear him to Professor Munro.

In 1947 he was invited by Glenn Richards to give a series of lectures at the University of Minnesota, and, as a result of his visit, he came to the attention of entomologists at the University of Illinois. In 1948 he received an offer from that department, and with encouragement from Munro, decided to emigrate once again and take up a position as Professor of Entomology at Illinois. From this time on, he was "free" to choose the directions of his work (although his previous history leaves us with no doubt that he had always been free in his own mind to do just that).

Just prior to leaving England, he discovered a soluble factor from yeast with vitamin activity for tenebrionid beetles, which he carried with him to Illinois. On the campus he found an interested biochemist in Herbert Carter who, with some of his students, collaborated with Fraenkel in 1952 to isolate, crystallize and identify vitamin B_T (Tenebrio) as carnitine. Further work with various colleagues (Bhattacharyya, Friedman) established the universality of occurrence and first indications of the importance of carnitine in Coenzyme A transfer reactions. These ideas and reaction mechanisms have since been incorporated into the common body of biochemical information to the extent that their origins have all but disappeared from the literature.

At the same time, given room to stretch his mind, Fraenkel began to ask questions about the meaning of his nutritional observations. Coming at the problem from two directions, he and Dethier had both concluded as early as 1951 that the similarities in nutritional requirements across the class Insecta, and the fact that plant leaves generally contained all of the required compounds, meant that host specificity must be based upon the presence in plants of other compounds which served to attract or repel individuals of different species. By 1958, Fraenkel had examined enough of the literature to recognize that the so-called "secondary" plant compounds, of many different structures and apparently not moving through the major pathways, might provide a clue to the evolution of host selection. For years, botanists and chemists had been isolating different classes of these compounds and associating them with different plant families, but had been unable to establish functions for most of them. With what some consider a flash of insight, but is documented in his 1959 Science paper as a long, thoughtful process tempered by his extensive experiences in nutrition and behavior, Fraenkel opened the field of insect-plant coevolution based upon chemical and sensory interactions between the groups, by describing the raison d'etre of secondary plant

compounds "as solely for the PURPOSE to repel and attract insects" (caps. mine).

It was in 1961, when this idea was beginning to cause ferment in ecological circles that Fraenkel received one of the few Research Career Awards given in his field by the U.S. Public Health Service. Then, with many of his students (Soo Hoo, Hsaio, Nayar, Waldbauer, Yamamoto) engaged in an examination of the chemical basis of host selection, and the pressures of his career relaxed, he was able to return to the cyclorraphous Diptera, whose adaptations had so intrigued him in the 1930's, and which by force of circumstance had been excluded from his laboratory. There were also good scientific reasons for his return to the field of endocrinology, since he had never been able to continue his pioneering experiments on ecdysone, and others were now showing the way to interesting and important aspects of the hormonal control of development.

His long memory took him back to 1936 and experiments he had done on newly emerged adult blowflies, and it was from information originally developed in that paper that, in 1962, he reported a new hormone which was responsible for adult tanning. By 1965 the hormone had been purified, generally characterized, and named "bursicon", and for the next years, Fraenkel and those of his students not doing host selection experiments (Seligman, Fogal) spent their time delineating its activity. As others became aware of Fraenkel's initial observation that bursicon was present in insects in a number of orders, interest grew, so that by 1968 many persons were engaged in corroborating and extending his work. It was time to move on to other questions concerning fly development, and it was also at this juncture that Fraenkel's excellence was formally recognized by the scientific community in the U.S. with election to the National Academy of Sciences.

The anecdote introducing Dr. Denlinger's paper in this symposium provides us with an explanation of how Fraenkel's serendipity led to his 1968 incursion into the physiology of diapause, a bridgehead which Denlinger has brilliantly expanded, but it was not chance which made him pick up the fly puparium once again.

If bursicon was the tanning hormone in the adult fly, what replaced it in the tanning of the puparium? This obvious question had to be answered in Fraenkel's lab, and it prompted an overall review of the nature of puparium formation under the influence of ecdysone. In so doing, Fraenkel in the early 70's established the presence in late larvae of several protein mediators of puparial morphogenesis and tanning, themselves released as neurosecretions through the action of ecdysone. For these investigations, he recruited Dr. J. Zdarek of the Department of Entomology of the Czech Academy of Sciences, who he had met sometime before at a symposium in Czechoslovakia. (This was, indeed, a lucky meeting, since their mutual affection and cooperation on this problem continues to this day.) Dr. P. Sivasubramanian, who cam to Fraenkel's lab as a student, having worked in India as a junior colleague to Dr. Bhaskaran, another of Fraenkel's associates, was also involved in this project. And the international character of the laboratory was capped off with the addition of Dr. Nalini Ratnasiri, a Sri Lankan student. She, together with Dr. Fraenkel, cleared up a

number of questions concerned with the uncertainties surrounding the larval ligation work and its use as a hormone bioassay by demonstrating, in 1974, the importance of the tracheal system in the tanning reaction and its fragility when subjected to constriction.

Dr. Fraenkel became Emeritus Professor of Entomology at the University of Illinois in 1972, but, with the exception of a reference in the annual departmental newsletter, there were no indications of retirement. Work continued on the puparial model for endocrinologically linked events, and new experiments were underway on fly oogenesis. In an examination of the interactions between nutritional states and developmental hormones in promoting egg production, Fraenkel re-evaluated some unpublished work on larval nutrition, and as a result, embarked on a new study concerned with the relationship between nutrition, metamorphosis, and aging processes. These experiments are evolving now, and it makes us wonder whether at 79 Fraenkel has decided that his flies may have something to add to what he has already taught us about aging properly.

Having begun this biographical sketch with the statement that we might learn something from a perusal of the scientific journey of this highly productive man, I come to its end with the feeling that there are real lessons to be derived from his wanderings. The first is that good questions and answers may be developed in the least scientifically crowded places. The second is that virtue sometimes triumphs over adversity. The third, more serious than the first two, is that Fraenkel provides a role model for the young scientist thrust into a position where problem choices are limited. Intelligence and imagination can turn the worst of situations into sources of important information from which broad and useful generalizations may be made.

Fraenkel has been physically "home" for the past twenty-five years, but his intellectual voyage continues unabated.

W. H. Luckmann - An Appreciation

Dr. William H. Luckmann retired after 19 years as head of the Section of Economic Entomology, Illinois Natural History Survey, on August 31, 1984. He was also head of the Office of Agricultural Entomology in the College of Agriculture and a Professor in the Department of Entomology in the College of LAS of the University of Illinois.

In 1965 Bill succeeded Dr. George C. Decker as head of the Section of Economic Entomology and has been largely responsible for shaping the section in its current form. Only one person now on the economic entomology staff was not hired by Bill. He encouraged the staff to work in research teams, often including people from other departments and disciplines. He added an agricultural economist and a modeler to the staff. He was instrumental in developing a computer center at the Survey, and he emphasized the importance of fundamental research in the development of IPM programs.

Bill had a personal interest in international agricultural programs and in addition to encouraging the participation of the staff, he consulted in India, Iran, and Puerto Rico.

One of Bill's major concerns was with the environmental impact of pesticides and to that end he worked hard to remove unacceptable pesticides from the market while simultaneously promoting effective pest management programs that maximized crop protection with minimal environmental disruption. In developing this approach toward pest management he enjoyed the respect and cooperation of both basic researchers and applied agricultural workers.

Bill received his M.S. degree from the Department of Entomology at Illinois in 1949 and was employed as a Research Assistant at the Survey that same year. In 1951 he became an Assistant Entomologist, in 1954 an Associate Entomologist and in 1956 he received his Ph.D. degree from the Department of Entomology at Illinois. He was promoted to Entomologist in 1959 and conducted research on the biology and control of corn insects until the administrative duties he began to accumulate after his appointment as head of the Section of Economic Entomology in 1965 consumed most of his time.

The Department of Entomology and the Section of Economic Entomology have been closely associated for many years. Bill Luckmann recognized the value of this association and under his leadership, ties between the Department and the Survey were reinforced. He obtained appointments in Agricultural Entomology for Entomology Department faculty members. He encouraged the survey staff to participate in teaching formal courses in the department. As a result of his efforts, several courses in the department are taught either totally or in part by survey staff. In cooperation with Dr. Robert L. Metcalf, he co-authored, "An Introduction to Insect Pest Management", a book directed toward insect pest management courses. Contributors to this book include staff members from both the survey and the department. Bill's commitment to students was demonstrated by his request that contributions for his retirement gift be used to set up a student scholarship in pest management. Numerous contributions have been received for the scholarship fund.

After retirement, Bill and his wife, June, plan to live in Champaign. He and June headed west in their pickup truck immediately after his retirement party for a well deserved vacation. They will tent camp in Yellowstone National Park and at other natural attractions in the west. They will also meet several friends who live in that area and who have organized fishing trips for the Luckmanns on the Madison and Yellowstone Rivers. The Luckmanns will have many activities after retirement. They have five children and 11 grandchildren. They enjoy such outdoor activities as canoeing, camping, hiking, and gardening. Bill is an avid fisherman and both he and June are enthusiastic ballroom dancers. Bill also enjoys playing the piano.

Bill Luckmann's impact at the Natural History Survey and the University of Illinois can be truly appreciated only by talking to the administrators, staff and students he had worked with through the years. To many of those people he has been more than an extremely competent professional associate, he has been a trusted friend.

J. V. Maddox

May R. Berenbaum, Assistant Professor

My major interests are in the chemical aspects of interactions between herbivorous insects and their hostplants, and the implications of such interactions in the evolution of host preference and in the organization of natural communities. Research in my laboratory centers on the secondary chemistry of the Umbelliferae and the insect associates of this herbaceous family. On the physiological level, research is underway to elucidate the mode of action and range of toxicity of secondary compounds in the family, including furanocoumarins, phenylpropenoids and polyacetylenes, as well as the metabolic adaptation to these toxicants by family specialists such as Papilio polyxenes (black swallowtail) and Depressaria pastinacella (parsnip webworm). On the ecological level, the role of such environmental variables as light and nutrients on the production of secondary chemicals in umbellifers and concomitant effects on susceptibility to attack by insect herbivores is being examined. On the evolutionary level, we are investigating the extent to which furanocoumarin chemistry in wild parsnip (Pastinaca sativa) is genetically determined and the extent to which it is phenotypically induced by insect attack, in an attempt to ascertain the manner in which changes in plant chemistry affect fitness in both insect and hostplant.

Post Doctoral Associate:
Art Zangerl - Ecological Genetics of Furanocoumarin Production in Wild Parsnip

Graduate Students:
Ellen Heininger - Comparative Metabolism of Furanocoumarins & Furanoquinoline Alkaloids in Papilionidae
Jonathan Neal - Behavior & Physiological Responses of Insects to Umbellifer Allelochemicals
James Nitao - Coevolutionary Interactions between Wild Parsnip and Parsnip Webworm
Steve Passoa - Systematics of Oecophorids
Sherri Sandberg - C_{17} Polyacetylenes as Insect Defense Compounds in Plants

Stewart H. Berlocher, Associate Professor

The last three years have seen a diversification of my work on insect evolution. I have spent a lot of time pondering the problem of phylogeny estimation, and the result of this rumination is a paper on "Insect Molecular Systematics" in the last Annual Review of Entomology. My own research on biochemical systematics continues to focus on tephritid fruit flies specifically the fruit pests Rhagoletis and the ragweed flies Euaresta. However, I am also involved in work on the honey bee through Steve Sheppard, a Ph.D. student, and Colias with Ellis MacLeod. Outside of systematics, I am involved in work on the population genetics of insect introductions and colonizations, and with another student, David C. Smith, on the genetics of host selection behavior in Rhagoletis.

Outside of the realm of science, I have finally perfected the art of creating enchiladas, since the Champaign-Urbana enchilada shortage I mentioned in the last Newsletter has yet to be completely remedied.

Graduate Students:

Ed Lisowski - Systematics of Strauzia (Diptera: Tephritidae)

Bruce McPheron - Molecular analysis of the phylogeny of tephritid fruit flies.

Steve Sheppard - An electrophoretic study of the phylogeny of Apis (Apidae: Hymenoptera).

D. Courtney Smith - Genetics of host selection behavior analysed via interspecific crosses in the Rhagoletis pomonella species group.

Fred Delcomyn, Associate Professor

Teaching my neurobiology course (which has grown to 170 students) and Biology 104 has taken much of my time over the last few years. Nevertheless, interesting results of experiments designed to investigate the role of sensory feedback in the control of insect walking have been obtained. The subject has received increasing publicity in recent years, with reviews on the topic coming out in Kerkut and Gilbert's new multi-volume treatise on insect physiology, and in the 1985 Annual Review of Entomology. In addition to writing those reviews, I was also honored to be able to give the opening address and an invited research paper at a symposium on insect locomotion held at the XVII International Congress of Entomology in Hamburg in August, 1984.

The field is changing rapidly, and I hope to make our department a center for work in it.

Stanley Friedman, Professor and Head

My fate is that of most other department heads, i.e., having too little time to do anything as well as I'd like. However, with two excellent graduate students, Carol Anelli and Charles Vossbrinck, and another two, Randy Cohen and Nathan Schiff, shared with Gil Waldbauer, my major research interests are well satisfied. Carol, after working on trehalose utilization for some time is now engaged in experiments concerned with gypsy moth host preference. Charlie is working on carnitine synthesis and function, and Randy is on a project involving food choice and dietary sufficiency, a behavioral activity in which Gil and I share a mutual interest, although he has been at it much longer. Last year I was given the opportunity to work in Israel for a sabbatical semester, doing some lecturing and sharing my time between studies on adult Ceratitis capitata food utilization and sand fly infection with leishmania, an interest I take up infrequently. It was a wonderful six months. While in Israel, I was asked to spend a month and give some lectures in a new graduate program at the International Center of Insect Physiology and Ecology in Nairobi, Kenya. Based on my extramural experiences, I suggest that all of you get to East Africa by hook or crook before the birds and large mammals disappear. You won't regret it. (By the way, the graduate program is excellent.)

Graduate Students:

Carol Anelli - Physiological Basis for Age Related Host Range Increase of Gypsy Moth Larvae

Stephen Briggs -

Sylvia Reid - Controlling Mechanism of the Post-Eclosion Behavior

Charles Vossbrinck - Carnitine Synthesis and Function in Insects

Michael E. Irwin, Associate Professor; Associate Professional Scientist, Economic Entomology Section, Natural History Survey

Work during the past few years has concentrated in the areas of outreach and research. Outreach efforts have stressed the implementation of integrated crop protection practices in developing countries, with emphasis on Latin America and soybean. Research efforts have stressed three areas: plant virus epidemiology, dispersion and dispersal of aphids, and the biosystematics of the dipterous family Therevidae.

Research into plant virus epidemiology emphasizes the role of aphids as vectors of soybean mosaic virus. It has stressed the effect of environmental cues on aphid behavior, especially visual cues eliciting alighting response. The concept has been to study plant virus ecology to develop good control strategies.

The dispersion and dispersal studies have stressed the long-range and field movement patterns of aphids, especially the corn leaf aphid, Rhopalosiphum maidis. These studies, conducted in collaboration with an insect geneticist, aphid taxonomist, insect biochemist, simulation modeler, meteorologists and electronic engineers, have delved into such aspects as flight energetics, electrophoretic differentiation of enzyme systems from discrete populations, sampling methodology, especially from aircraft at various heights in the atmosphere, radar detection, and the development of back trajectory analyses.

Therevidae biosystematics has dealt with the higher classification and biogeography of the family. Emphasis has been placed on a generic and suprageneric reclassification of the Therevidae, especially from the Nearctic Region.

Graduate Students:

J. Pat Wynes - Host-Plant Recognition of Soybean Aphids

Marcos Kogan, Professor; Professional Scientist, Economic Entomology Section, Natural History Survey

I think of the span between 1981 and 1984 as the period of my Chinese connection. My interest in the Orient was more than casual. After all, soybean is supposed to have originated in Northern China (or perhaps in Central China as new evidence seems to indicate). The opportunity to observe wild soybean and its associated insect fauna in natural habitats presented itself in August-September of 1981 as I was one of a six-member team of soybean breeding, production and protection specialists sponsored by the USDA to travel for 5 weeks in the major soybean producing areas of

the country. I returned to China for 3 weeks in 1983 as a delegate to the II-China/USA Soybean Research Conference. Both activities helped establish good contacts with Chinese researchers and provided some insight into the soybean insect fauna in the Orient and, it goes without saying, a delightful epicurean experience and a glimpse at a fascinating country, people and society.

During this time Young In Lee (Korea), Hilary DeAlwis (Sri Lanka), and Suzanne Hart (USA) completed their graduate programs and started or resumed their successful professional careers. The publication in 1982 of the bulletin "Soybean insects: Identification and management in Illinois" in collaboration with Don Kuhlman summarized about 10 years of our work in soybean IPM. Two main areas in the research program seemed to be particularly fruitful: the mechanisms of resistance in soybean against insect pests, and the development of a methodology to test the interactions of weed competition and herbivory on soybean in the field. Charlie Helm was the main force behind the field work in the latter project. The insect-plant interactions program was greatly expanded when Dan Fischer joined us in 1983, first as a post-doctoral fellow and then as a co-investigator in a new insect/plant interactions project. Perhaps some of the most significant findings during this period were the role of phytoalexins in soybean as a potential post-infestation antiherbivory mechanism (part of Suzanne Hart's thesis), and the unravelling of the sensorial mechanisms probably responsible for the host-selection behavior in the Mexican bean beetle. I am looking forward in the next five years to concentrate in greater depth on the intricacies of insect/plant relationships.

Graduate Students:

Alan Schroeder - The Use of Tissue Callous to Investigate Mechanisms of Plant Induction Against Herbivores

Wallace E. LaBerge, Professor; Professional Scientist and Head, Faunistics Section, Natural History Survey

Dr. LaBerge is pleased to be back in the saddle administering the Section of Faunistics and Insect Identification at the Natural History Survey after one year (1982-83) in Washington, D.C. as Program Director for Systematic Biology at the National Science Foundation. The experience in Washington was valuable but took a year out of productive research. Since returning to Urbana two large manuscripts on Andrena systematics and zoogeography have been completed and a proposal for support for the Survey's entomological collections has been submitted to NSF and funded for three years. Most of LaBerge's spare time has been getting house and garden back into shape after one year's absence.

Graduate Students:

Steve Heydon - A Revision of the Ptaramalid Chalcidoids

Eugene Miliczky - Resource Utilization of Spring Bees on Salix, Emphasis on Andrena

Joseph R. Larsen, Professor

During the past three years there has been a great deal of change in our lives. I have stepped down as director of the School of Life Sciences, and during the past year we spent a sabbatical leave at Brigham Young University in Provo, Utah with Dr. Gary Booth, a former post-doctoral student of mine. We had an exciting year and did research on the brain and behavior of the blind cave beetle. We have been successful in obtaining egg laying and the rearing of larvae. Also, I did a great deal of work with Dr. Booth on some of the toxicological pollutants of polycyclic aromatic compounds (PAC), specifically their effect on fish gill and liver and also the effect on some insects.

It is good to be back home after a leave of absence, to settle down once again into being a professor in the Department of Entomology. We are anxiously looking forward to our teaching and continuing a research program. We are extremely pleased to acknowledge these associations and to once again say hello to all of our friends and former students in the department.

Graduate Students:

Bruce Steinly - Ultrastructural Studies on the Sensory Receptors of Raptorial Insects

Ellis G. MacLeod, Associate Professor

Work in my laboratory has increasingly turned toward the applications of macromolecular chemistry to problems in insect systematics and ecology. With Rebecca Grosser a project is underway which will, hopefully, allow a quantitative examination of the prey eaten by Ranatra, an aquatic, hemipteran, using immunological techniques to examine the gut contents of the bug. Becky's initial undertakings have been concerned with an examination of the sensitivity and specificity of the procedures under laboratory conditions where the nature of the prey and time of feeding can be controlled.

With Professors Berlocher and Sternburg, several joint projects are underway involving a study of the geographical variation of and degree of reproductive isolation between several species of North American butterflies. The techniques employed, enzyme electrophoresis, have been widely utilized to secure data on the distribution of electromorph frequencies in wild populations of a number of organisms, but their application to butterfly systematics has been more limited.

Finally, attempts are underway to equip and orient some of my laboratory's research toward the application of the examination of macromolecular sequence differences to the study of some of the broad-scale features of insect evolution. It was initially hoped that the indirect comparison of protein sequences using the approach of microcomplement fixation would be suitable for this work. I feel, however, that the rapid advance in the technologies permitting the direct determination and comparison of protein and nucleic acid sequences has seriously undermined

the usefulness of these older methods. It is my intention to reorient this phase of my work to take advantage of these recent developments.

Graduate Students:

Rebecca Grosser - Immunological Studies of the Feeding Specificity of an Aquatic Bug, Ranatra nigra.

Joseph V. Maddox, Associate Professor; Associate Professional Scientist, Economic Entomology Section, Natural History Survey

My personal research interests continue to be centered around microsporidian parasites of insects, their classification, ultrastructure, and role as naturally occurring regulators of insect populations. However, three of my four graduate students have as the subject of their thesis research fungal diseases of insects. Mickey McGuire is working on Erynia radicans, a fungal disease of the potato leafhopper, Marilyn Morris on an Erynia species in the alfalfa weevil, and Eric Day on Beauveria bassiana in the corn rootworm complex. My fourth graduate student, Joel Siegel has almost completed his Ph.D. thesis on the microsporidium, Nosema pyrausta, and its role in the natural regulation of the European corn borer.

I am also involved in a cooperative study on the gypsy moth with Drs. Jim Appleby and Mike Jeffords of the Natural History Survey. We are developing and evaluating alternate control methods for the gypsy moth. We will be going to several countries in eastern Europe in the spring of 1985 to collect and hopefully import European pathogens of the gypsy moth. In addition I am working on the use of several fungi for the control of soil insects.

As a part of the expanded course offerings in Entomology, we now have a course in insect pathology every third year and I am teaching it this semester for the second time. Since I do not teach regularly, teaching this course serves as a vivid reminder of both the joys of teaching and the time required to prepare a one unit course.

Graduate Students:

Eric Day - Beauveria bassiana, a biological control agent of the corn root worm.

Michael McGuire - Erynia radicans as a pathogen of the Potato Leaf Hopper in the Midwest

Marilyn Morris - The epizootology of Erynia phytonomi in alfalfa weevil populations

Joel Siegel - Effects of Nosema pyrausta on Population Dynamics of European Corn Borer

Robert L. Metcalf, Professor

Research during the past several years has concentrated on the chemical ecology of two major groups of insects: the Dacini fruitflies especially Dacus dorsalis, the oriental fruitfly, and Dacus cucurbitae, the melon fly. This project, supported by an NSF Grant, with Professor W. C.

Mitchell of the University of Hawaii and Dr. Esther R. Metcalf is aimed at analyzing the responses of these insects to a large group of semiochemicals structured around methyl eugenol and raspberry ketone. We are analyzing the basic processes of olfaction, the role of olfaction in behavior, and the coevolution of these insects with plants containing these kairomones.

The other major research efforts relate to the cucurbitacin kairomones of Cucurbitaceae and their role in the chemical ecology of the Diabroticina beetles. This study has been very productive in developing fundamental information about the role of the cucurbitacins as arrestants and feeding stimulants, that is useful in planning advanced IPM strategies including host plant resistance, trap cropping, and the use of kairomone-containing toxic baits. This research has been supported by Competitive Research Grants from the USDA with Professors A. M. Rhodes and R. L. Metcalf as collaborators.

Graduate Students:

Thomas Baughman -

Keith Hunter - Chemical ecology of the Colorado potato beetle Leptinotarsa decemlineata

Richard Lampman - The physiology, biochemistry and ultra structure of the repugnatorial glands of the squash bug Anasa tristis

Hengchen Lin - Aspects of the chemical ecology of the soybean looper Pseudoplusia includens

Edward Sakufiwa - Aspects of the chemical ecology of insect pests of stored grains

James Saxon - Factors affecting the oviposition behavior of the corn earworm Heliothis zea

Gary Tatro - Combined effects of chemical and microbial insecticides on the European corn borer Ostrinia nubilalis

Jay E. Mittenthal, Departmental Affiliate in Entomology; Assistant Professor of Anatomy

My studies on the morphogenesis of arthropod limbs have led me to a model for analyzing the forces and deformations in the shaping of epithelia (cell sheets). The model treats an epithelium as a thin shell of material. The shell is fluid-like, in that cells in a small multicellular element can exchange neighbors. The element responds to bending or to in-plane stretching as an elastic medium. The support within the element against external forces comes from interfacial tensions between lateral surfaces of cells which differ in their adhesive affinities, and from the stiffness of the epithelium, associated with the intracellular cytoskeleton and with intercellular junctions.

The model makes valid predictions for three tests in arthropods. (1) After a patch of arthropod integument is grafted to an ectopic host site, the graft thickens and domes. (2) A pattern of interfacial tensions compatible with the shape of a normal arthropod leg segment can be used to predict the shape of a triplicated segment which regenerates after contralateral grafting. (3) The model can predict how the shape of an epithelial structure should change when its size changes. Predictions

about the shapes of leg segments in Drosophila agree with measurements. Further tests of the model, and studies of the processes which underlie morphogenesis in arthropods and vertebrates, are underway.

Graduate Student:

Mark Sturtevant - Morphogenetic Information in Legs and Sterna of Crayfish

William G. Ruesink, Associate Professor; Associate Professional Scientist and Head, Economic Entomology Section, Natural History Survey

About 3 years ago, I left to spend a year with the Victoria Department of Agriculture in Melbourne, Australia. Their research program in applied entomology and plant pathology consists of about 30 research scientists and about twice that many technicians. Three years ago, they had no one working in the area of simulation modeling. I was invited to spend a year with them so that they might decide whether or not simulation modeling was an area that they wanted to emphasize in their future work. Apparently, I did not discourage them too much as they now have two full-time modelers on their staff and a visiting scientist from the Netherlands there at the moment.

Since returning to Illinois, I have been working on simulation modeling of the black cutworm, on sampling corn rootworm beetles, and on a model for the spread of soybean mosaic virus. The black cutworm work was done in conjunction with Mike Foster who extended some earlier work by Steve Troester and myself. The corn rootworm beetle trapping studies have largely been done by Chip Guse and Dennis Fielding, but Bill Luckmann and Steve Briggs were also involved. The soybean mosaic virus model is a collaborative effort with Mike Irwin, in which we predict the seasonal progress of the disease as a consequence of aphid vector density.

Graduate Students:

Dennis Fielding - Phenology and Population Dynamics of the Squash Bug (Anasa tristis).

Charles Guse - Effects of Weather on Corn Root Worm Sampling Techniques

Craig Reid - The Biology of a Cecidomyiid, with a Computer Model on its interaction with Soybean and Soybean Rust

Lane Smith - Interaction of Potato Leaf Hopper with an Alfalfa-grass Complex

David S. Seigler, Professor; Professor of Plant Biology

My laboratory is involved in the study of plant secondary metabolism and the involvement of these compounds in biological interactions. The role of these compounds in plant-insect interactions (such as herbivory) is of special interest. Much effort has centered on the legume genus Acacia. These woody shrubs and trees of the American Southwest and Mexico are rich in tannins, cyanogenic glycosides and phenolic materials. Study of these compounds has provided a basis for resolution of systematic problems within

the genus and will ultimately provide a base for more complete understanding of biological interactions of the group. Other recent work has involved the family Passifloraceae and related taxa. Many of these plants produce complex cyanogenic glycosides which may be correlated with specific herbivores of the genus Heliconius.

Richard B. Selander, Professor; Professor of Genetics and Development

For the last three years I've been concentrating on the taxonomy, behavior, and development of South American blister beetles of the tribe Lyttini. One of the principal genera is Pseudomeloe, which occurs widely through the Andes and surrounding areas and is one of the most conspicuous insect groups on the Altiplano and the Atacana Desert. In 1983, I spent six months in South America, working in Ecuador, Peru, Chile, and Argentina. On one trip, Luis Pena, two of his helpers, and I camped out for three months on the Atacana Desert and in southern Peru, with an extended side trip through the high Andes of northern Argentina. On another, I collected in Patagonia and in the Nothofagus forest region of southern Chile. This trip was exceptionally exciting because it yielded not only several new species but a new genus of blister beetles.

Back in the lab, in addition to working up the material from the South American trips, I have been studying larval diapause in the common black blister beetle, Epicauta pennsylvanica. This is one of the few species that overwinters in the first larval instar. The study is complicated by the fact that the incidence of diapause varies geographically within wide limits.

James G. Sternburg, Professor

My interests over the past few years have centered around mimicry by insects of other insects, or of objects within their environment. A mimicry complex with Battus philenor (Papilionidae) as the toxic model has been the focus of continued field studies. The most recent studies have been in Michigan, north of the range of Battus, but within the distribution of several of the mimics. It is hoped that this work will help in understanding the selective pressures involved in mimicry, and in particular what happens when mimicry breaks down.

I have more recently begun a study of speciation in the genus Phyciodes (Nymphalidae). This will be done with my two colleagues, Ellis MacLeod and Stewart Berlocher. We hope, by gel electrophoresis techniques and isozyme studies to determine how distinct the northern and southern pearl crescents are from one another, and whether, in one locality, there may be hybridization with a third species.

Photography of insects in nature has continued to occupy my spare time in the summer. At this time, I have thousands of slides, many showing crypsis or mimicry.

A vacation trip combined with some collecting around Lake Superior was one of the highlights of the summer. We camped part of the time, and were rained on more nights than not. Ontario is very, very scenic, and well worth seeing. Our oldest daughter and her three boys visited us part of the summer, which was very nice. And our youngest daughter is working as a keeper at Brookfield Zoo in the bird section. Our son is a C.P.A. with a national firm, specializing in tax and investments. My teaching still includes morphology, general entomology, agricultural entomology, and the identification of immature insects.

Gilbert P. Waldbauer, Professor

During the last three years I have been working on two different research projects. One is a study of Batesian mimicry in insects, and the other is a study of dietary self-selection by corn earworm larvae. The mimicry study includes two parts. One, done in conjunction with Jim Sternburg, is an attempt to measure mimetic advantage in the geographical absence of the model using painted promethea moths that are released and then recaptured in pheromone traps. The other is a study of the phenological relationships of mimics, their models and insectivorous birds. These studies took me to a conference in Paris and to three summers of work at the University of Michigan's beautiful field station on Douglas Lake. The self-selection study is a joint effort with Stan Friedman. We are measuring the earworm larva's ability to eat two or more separate foods in proportions that will yield a more favorable nutrient balance than will any one food or a homogeneous mixture of them. We have demonstrated self-selection by the earworm on artificial diets and are now looking at self-selection on natural diets.

Graduate Students:

Randy Cohen - Physiological Basis of Feeding Choice for Optimal Nutrition in Heliothis zea

Nathan Schiff - Component Selection of Heliothis zea on Cotton

Laura Simms - Biology of Larval Instar Variability in Heliothis zea

Judith Willis, Professor; Professor of Genetics and Development

I spent 1983 as Program Director for Cellular Physiology at NSF. My responsibilities included seeing that $6.3 million were judiciously dispensed in response to about 300 grant applications,in endocrinology, immunology, and some muscle physiology. It was an excellent opportunity to gain a rather depressing overview of the funding available for insect physiology, for I visited study sections at NIH, sat in on the panel for the USDA Competitive Grant Program and talked to a lot of people. Support for basic research with insect systems comes from a variety of sources, and is, as you all know, really inadequate, considering the opportunities available for making fundamental discoveries and developing the foundation for rational control of pests.

The job was demanding in time, fascinating in scope, and just manageable in responsibility thanks to a couple of fine secretaries and a

wise assistant who managed to time her assessment of a crisis state to be out of phase with mine. I learned a lot of governmental jargon, and how to write memos and bullets.

NSF also encouraged (and funded) my attendance at several meetings--FASEB in Chicago, International Symposium on Invertebrate Tissue Culture in St. Augustine, International Conference on Insect Neurochemistry and Neurophysiology in Maryland, International Colloquium on Invertebrate Hormones in Strasbourg (France), ESA in Detroit, and an Intramural Planning Workshop on Fundamental Biology at the USDA in Beltsville. Thanks to an intensive bout of research before I left for Washington and the hard work of my graduate student, Diana Cox, and a wonderful technician, Laura Koryta (now departed for marriage and industry) there were lots of new things to present at the two meetings at which I had promised to give papers before learning about NSF. We now have considerable evidence that different metamorphic stages are not built from discrete sets of genes.

Transition back to the U of I was facilitated by a sabbatical leave. A summer in Mike Ashburner's lab at Cambridge University taught me to excise bits of genes, label them, and then use them with endless pipetting to learn that Drosophila switches the promoter it uses for ADH just before metamorphosis. A second jaunt to Ed Marks' lab in Fargo, provided many interesting contrasts, and I am now busily analyzing the results of an orgy of labeling studies we carried out on cell lines and tissues to follow both protein and chitin synthesis under different hormonal regimes.

I'm supposed to settle down to a routine existence next semester, delivering lectures in insect physiology and sharing the 426 seminar with Stan. New opportunities for travel loom, however, as in the fall I will be a Sigma Xi National Lecturer.

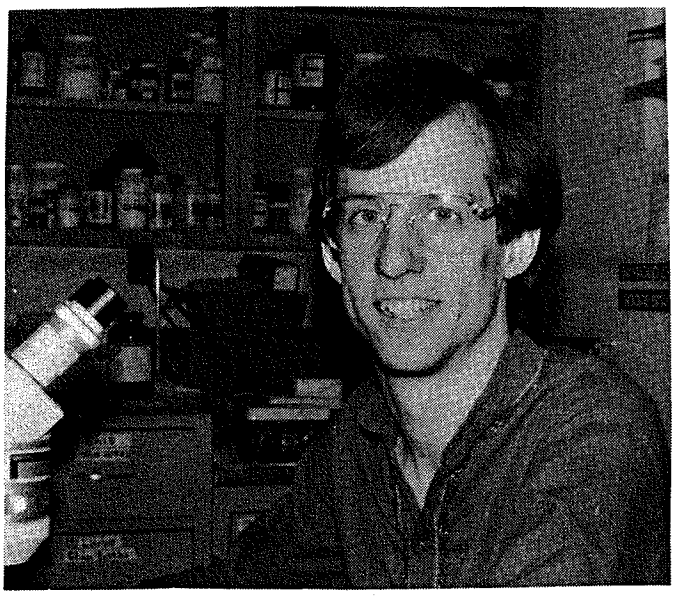
Graduate Students:

Diana Cox - Comparisons and Characterizations of Cuticular Proteins

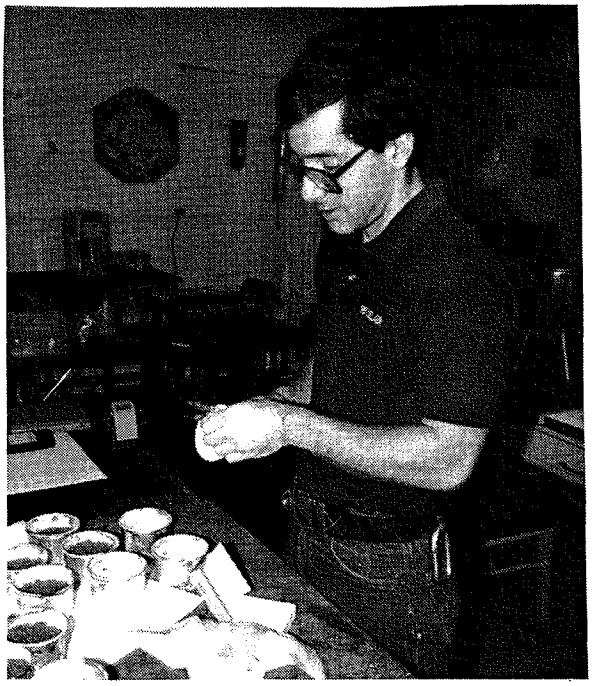
Sara Lanka -

HERBERT H. ROSS MEMORIAL FUND AWARD

The Herbert H. Ross Memorial Fund was established through the University of Illinois Foundation to honor the memory of Dr. Ross who had a long and distinguished career at the Illinois Natural History Survey (1929-1969) and University of Illinois (1947-1969). He was Principal Scientist and Head of the Section of Faunistic Surveys and Insect Identification, and Professor of Entomology at the University. Dr. Ross' research was widely recognized in such diverse fields as evolutionary theory, community ecology, biogeography, and systematic entomology. The memorial fund was established to honor Dr. Ross' contributions to and promote research in biological systematics. Each year one or more cash awards are given to support individual research. Winners are chosen from proposals submitted by faculty and graduate students at the University of Illinois and staff of the Illinois Natural History Survey. Steve Heydon and Nathan Schiff, both graduate students in Entomology, won awards during 1983 and 1984.



Steve Heydon



Nathan Schiff

REPORT OF THE GRADUATE STUDENT ADMINISTRATION COMMITTEE

GSAC activities over the past few years have, as usual, centered on admission of new graduate students. A summary of our applications and admissions appears below. Although we still have excellent students joining our department each year, we find that the pool of applicants from which these students are drawn seems to be shrinking. Therefore, it is important for graduates of our department to encourage their best students to apply to Illinois and continue our great tradition.

Year	No. of Applicants Domestic	Foreign	No. of Students Accepted	No. New Students Enrolled
1982	12	16	7	6 domestic 1 foreign **7 Total**
1983	19	9	16	7 domestic 3 foreign **10 Total**
1984	10	11	10	6 domestic 1 foreign **7 Total**

REPORT OF THE ENTOMOLOGY GRADUATE STUDENT ASSOCIATION

The Entomology Graduate Student Association was formed some years ago to give students the opportunity to make themselves heard in the councils of the department. At present, there is a representative at all faculty meetings to report student views and needs, and to take back to the students any new decisions which may be of interest or importance to their academic lives. Now for the levity.

EGSA is up to its usual fun activities. Picnics were held in the fall of both 1983 and 1984. At the 1983 picnic the temperature dropped to 55°F., and the newly-arrived students from California thought they would freeze. Fortunately, the weather in 1984 was much more picnic-like. Football, frisbee, volleyball, food, and music were enjoyed by the attendees.

In the spring of 1983, the EGSA sponsored its first annual "Insect Fear Film Festival". Several hundred people showed up to view such classics as Them, The Monster from Green Hell, and Bug (starring a cast of several thousand incendiary roaches). There were also several shorts including The Fly (not the one with Vincent Price) and Tarantula. Members of the association plan to sponsor a second annual festival this coming year.

EGSA has spawned "son of EGSA", an organization know as Illimnologists, most of whose members are entomologists. The sole purpose of this organization is collecting trips.

Of course, we continue to produce the Hexapod Herald and Bug O'Lunch. The first of these is an infrequent graduate student newspaper featuring creative activity of all kinds, the second a weekly informal seminar series which features student research reports.

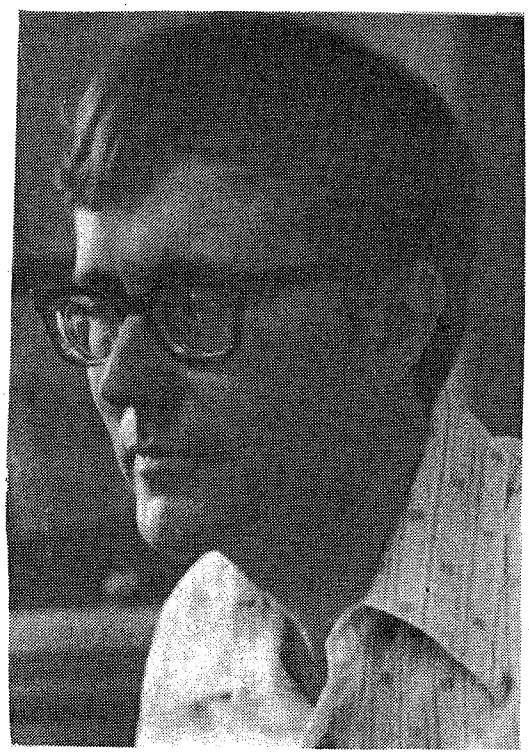
At this time, planning for the winter holiday party is beginning. Along with the usual munchies and good conversation it is also hoped that the entomology department's own somewhat-bluegrass band will make its debut. Try to make it back. If you can't, have a Happy Holiday!

REPORT OF THE SECTION OF ECONOMIC ENTOMOLOGY, NHS

The Section of Economic Entomology, at present, has 13 research scientists and 4 extension specialists, plus about 35 full-time technical assistants. Four of the thirteen research scientists have joint appointments in the Department of Entomology and seven graduate students are currently studying with these four people.

During the nineteen years that William H. Luckmann was Head of the Section, the relationship between the University and the Survey improved greatly. I hope that it will continue to improve during the years that I am Section Head. Specifically, I will propose that many members of the Entomology Department be given joint appointments in the Natural History Survey, and I hope that more of our staff will be given adjunct professorships in the Department. Furthermore, I hope that more research proposals will be developed on which scientists from the Department and the Survey serve as co-investigators.

W. G. Ruesink



RECENT GRADUATES

Master's Degree

1981

Daniel C. Fischer - Tachinid Parasitoids of Acalymma Vittata, Diabrotica Undecimpunctata and Diabrotica Virgifera. Adviser: R. L. Metcalf

Gary E. Tatro - A Partial Life Table of the European Corn Borer, Ostrinia Nubilalis Hubner (Lepidoptera: Pyralidae), in Central Illinois. Adviser: R. L. Metcalf

1982

Pamela K. Anderson - A Preliminary Study of the Weevil Conotrachelus Cristatus on Cassava (Manihot Esculenta Cranz) Within an Indigenous Agricultural System. Adviser: M. R. Berenbaum

Carol M. Anelli - Homeostasis and Aging: Trehalose Regulation in The Adult Blowfly, Phormia Regina. Adviser: S. Friedman

Diana L. Cox - Lepidopteran Cuticular Proteins: Comparisons of Different Morphological Regions, Metamorphic Stages, and Species. Adviser: J. H. Willis

Hilary DeAlwis - Bionomics of Scaphytopius Acutus (Say) (Homoptera: Cicadellidae) on Soybean. Adviser: M. Kogan

Suzanne V. Hart - Effects of Soybean Phytoalexins on Food Choice and Nutrition of the Soybean Looper, Pseudoplusia Includens (Walker), and Mexican Bean Beetle, Epilachna Varivestis Mulsant. Adviser: M. Kogan

Thomas G. Shanower - Evaluation of Carbofuran and Acephate Use as Seed Treatments to Protect Seedling Pumpkin from Attack by the Striped Cucumber Beetle. Adviser: W. H. Luckmann

Karen W. O'Hayer - Transmission of Spiroplasma Citri by the Aster Leafhopper, Macrosteles Fascifrons. Adviser: W. G. Ruesink

1983

David M. Stone - Effects of Soil Compaction on Size and Vertical Distribution of Collembola and Mites in a Forest Soil. Adviser: M. R. Berenbaum

1984

Charles Guse - The Effects of Weather on Western Corn Rootworm. Adviser: W. G. Ruesink

Gail Kampmeier - The Fecundity, Development, and Population Fluctuations of Orius insidiosis (Say) (Hemiptera: Anthocoridae). Adviser: M. Irwin

James K. Nitao - Coniine Toxicity and Deterrency in Heliothis Zea Adviser: M. R. Berenbaum

Doctor of Philosophy Degree

1981

David A. Belluck - Pesticides in the Aquatic Environment. Adviser: R. L. Metcalf

Daniel W. Sherrod - Bionomics and Sampling of the Imported Crucifer Weevil, Baris Lepidii Germar. Adviser: W. G. Ruesink

Donald W. Webb - Phylogenetic Analysis of Certain Lower Brachycerous Diptera in the Nearctic Region. Adviser: J. G. Sternburg

Arthur E. Weis - Ecological and Evolutionary Consequences of Variation in Clutch Size in Asteromyia Carbonifera (O.S.) (Diptera: Cecidomyiidae). Adviser: P. Price

Susan W. Wesley - The Delayed Neurotoxicity of Thio-, Allythio- and Dithio-Carbamates and Its Relevance to a Mode of Action. Adviser: R. L. Metcalf

1982

Bruce H. Stanley - A General Mathematical Model of Sex Pheromone-Mediated Mating and Trap Capture and Its Application to the Black Cutworm, Agrotis Ipsilon (Hufnagel). Adviser: W. G. Ruesink

1983

Daniel C. Fischer - Celatoria Diabroticae Shimer and Celatoria Setosa Coquillett: Tachinid Parasitoids of the Diabroticite Coleoptera. Adviser: R. L. Metcalf

John K. Kawooya - Electrophoretic Discrimination of Species of the Muscidifurax (Hymenoptera: Pteromalidae) Complex. Adviser: S. H. Berlocher

Young-In Lee - The Potato Leafhopper, Empoasca Fabae, Soybean Pubescence, and Hopperburn Resistance. Adviser: M. Kogan

1984

John F. Andersen - The Role of Attractants and Feeding Stimulants in the Selection of Cucurbita Flowers by Diabroticite Beetles (Coleoptera: Chrysomelidae). Adviser: R. L. Metcalf

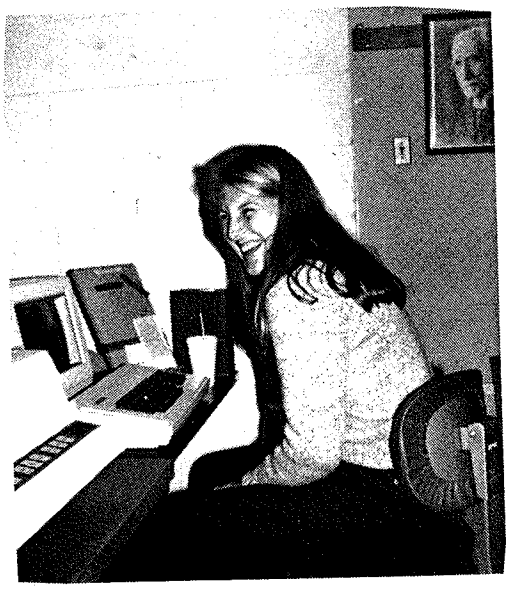
Carl Bouton - Plant Defensive Traits: Translation of Their Effects on Herbivorous Insects into Reduced Plant Damage. Adviser: P. Price

Michael A. Foster - Influence of Weeds Associated with Reduced-Tillage Corn on a Black Cutworm Parasitoid, Meteorus Rubens (Nees Von Esenbeck), and Computer Simulation of the Consequences for Black Cutworm Damage. Adviser: W. G. Ruesink

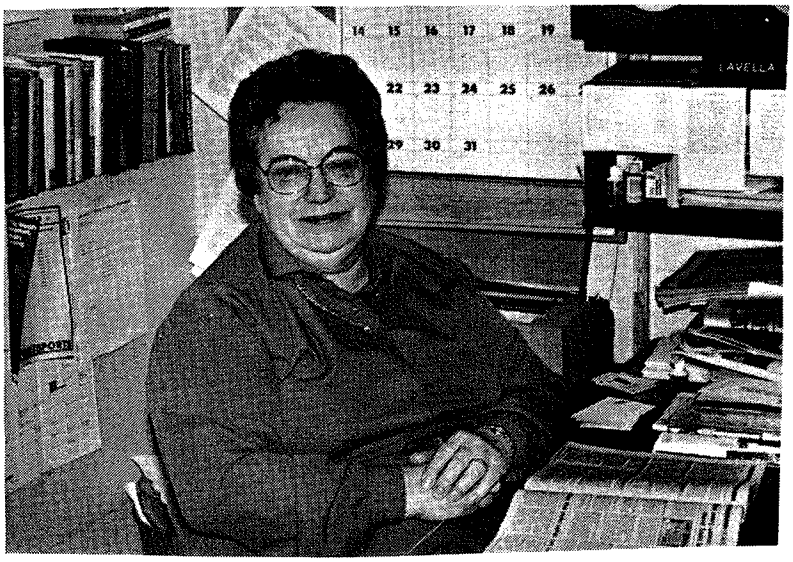
DEPARTMENT OF ENTOMOLOGY

NON-ACADEMIC STAFF

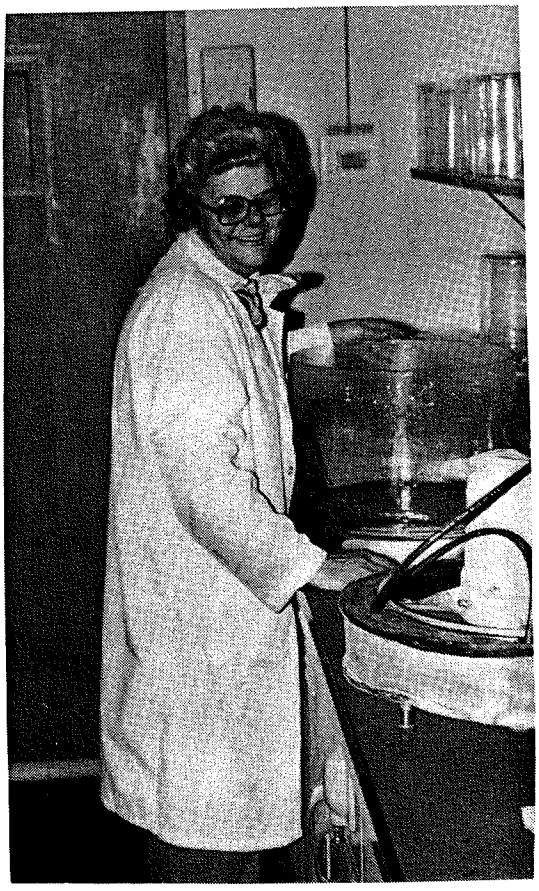
Lois Streid



Shelley Hendershott



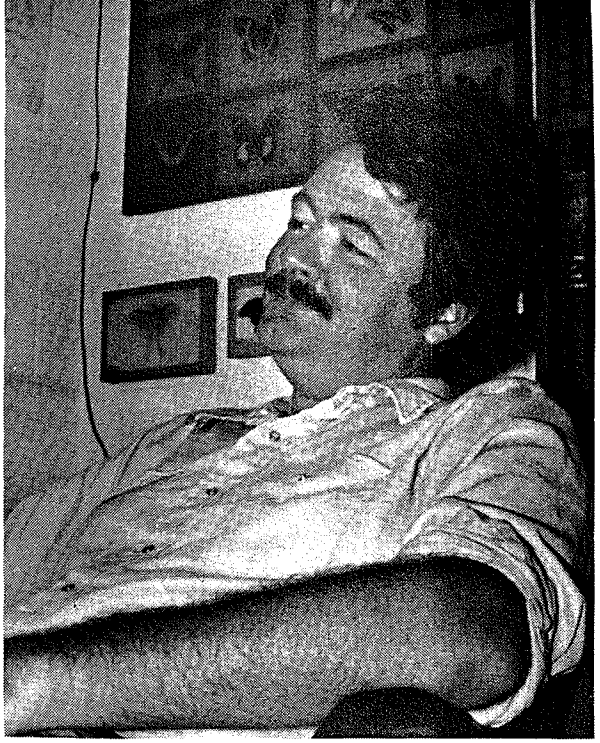
Lavella Whited



Eloise Duvall

Dot Houchens and Stanley Friedman
Head of the Department

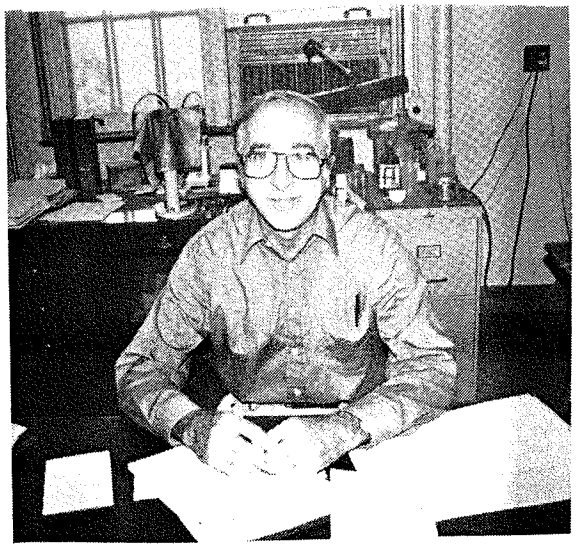
May Berenbaum



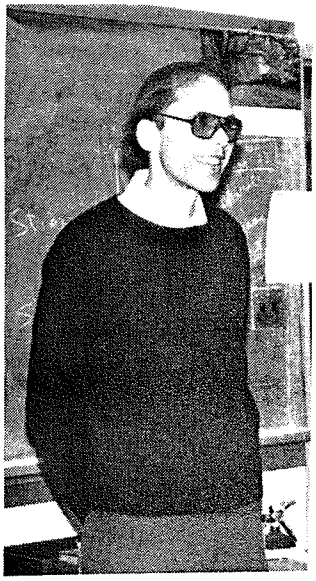
Stewart Berlocher

Marcos Kogan

Mike Irwin

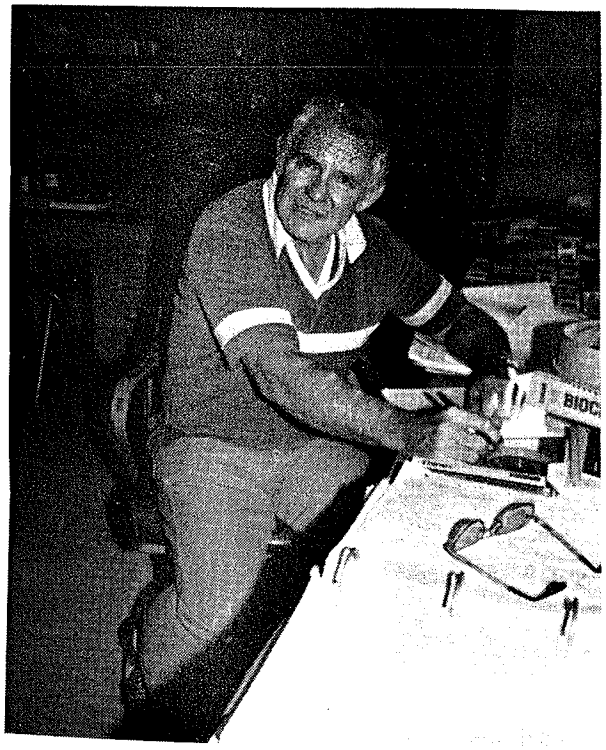


Wallace LaBerge

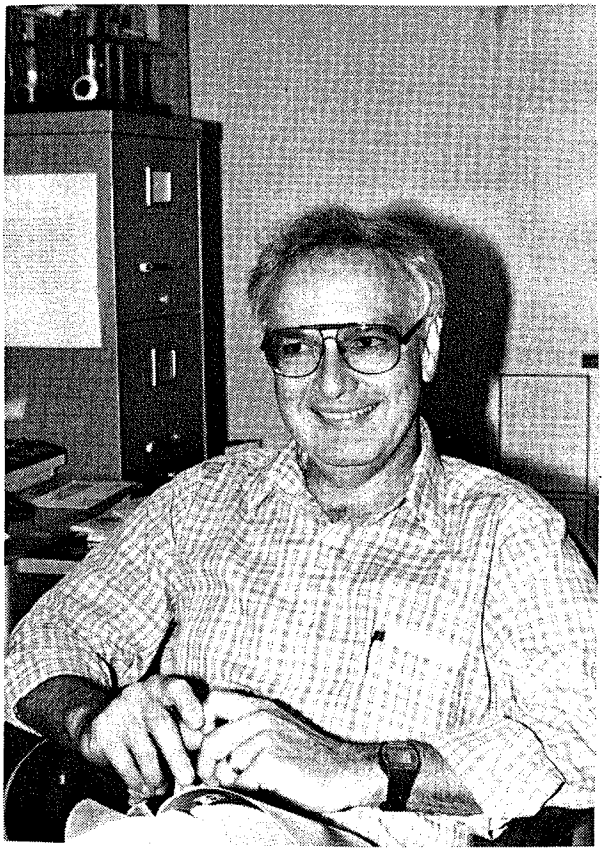


Fred Delcomyn

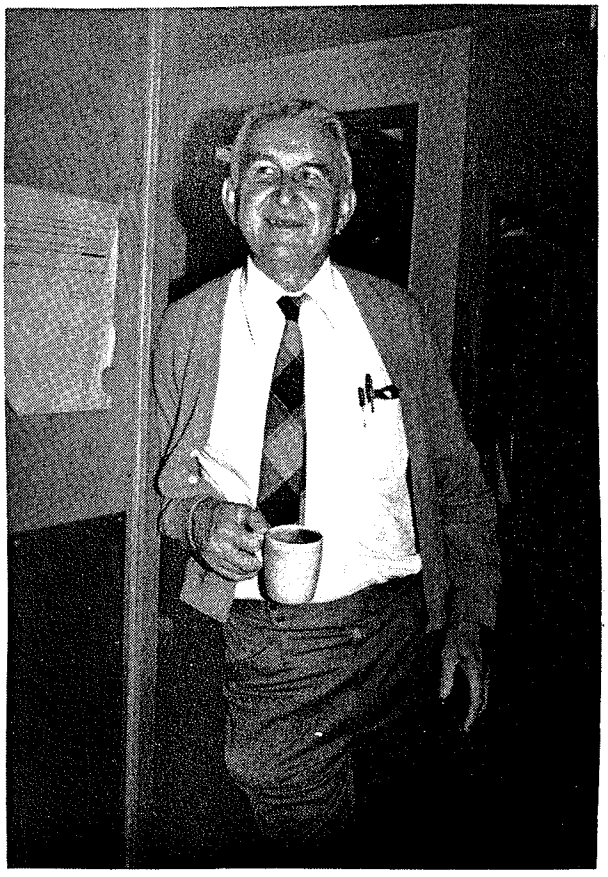
Joseph Larsen



Ellis MacLeod

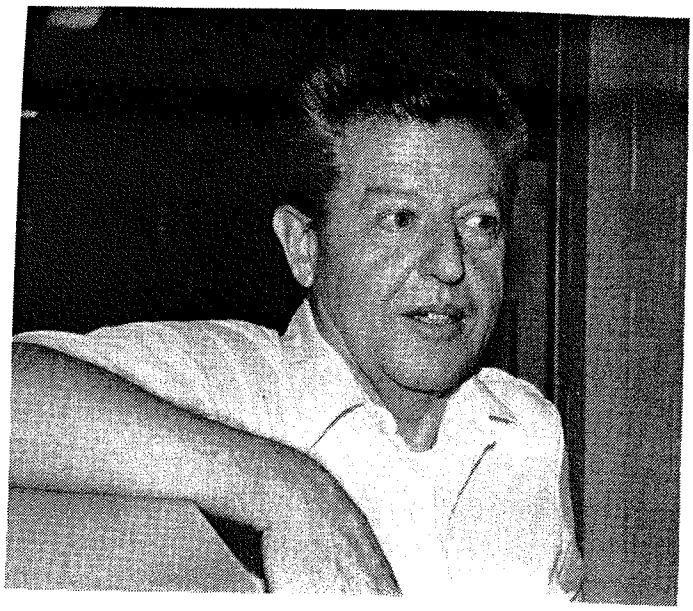


Joseph Maddox



Robert Metcalf

Judith Willis



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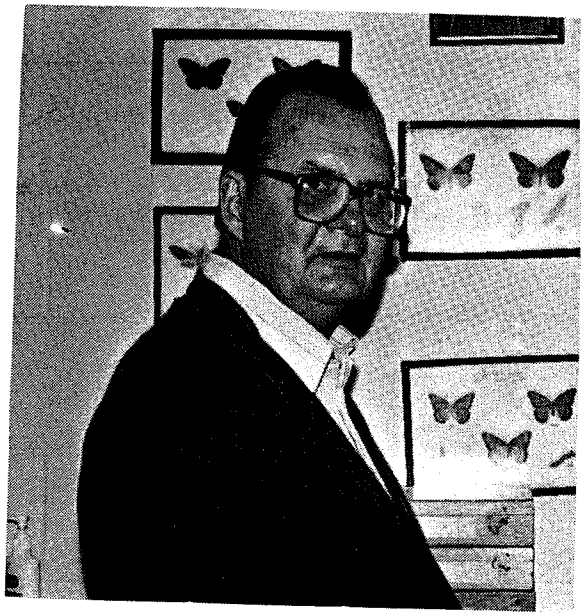

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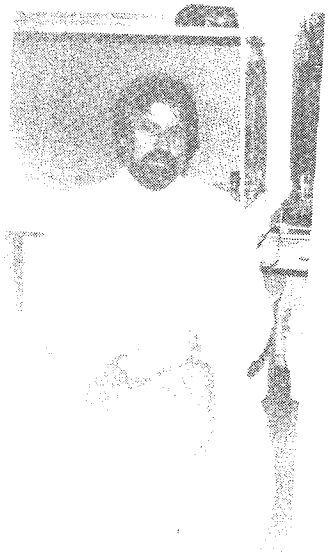
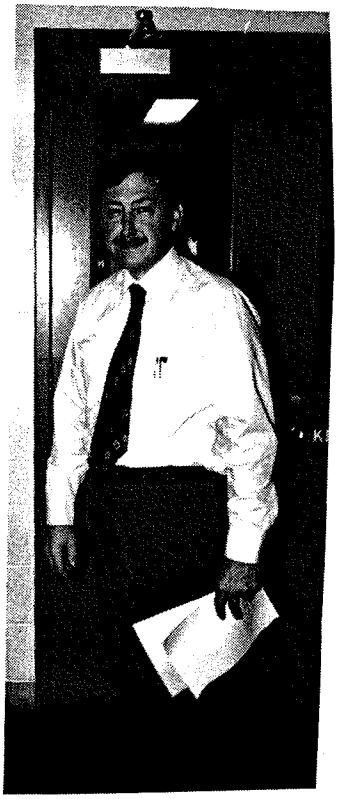
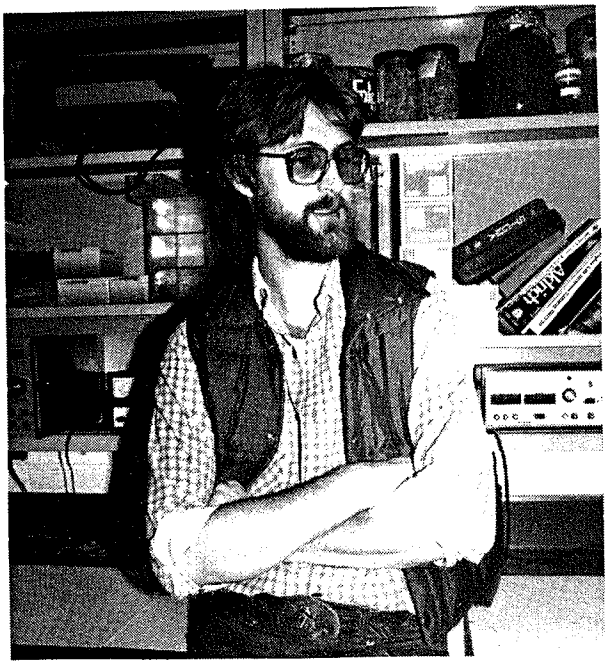


Jan Zdarek
Visiting Associate
Professor

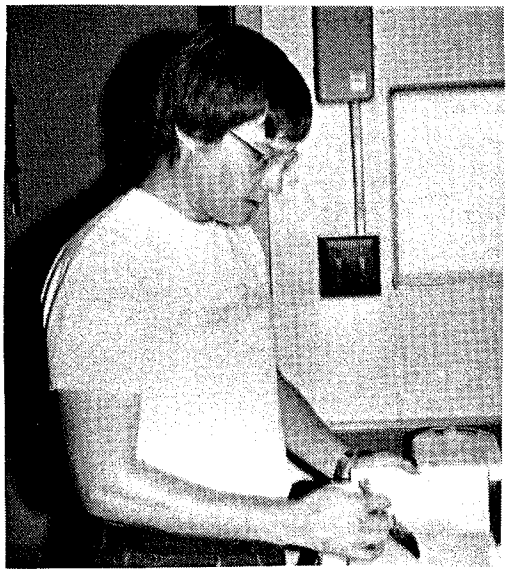


David Seigler

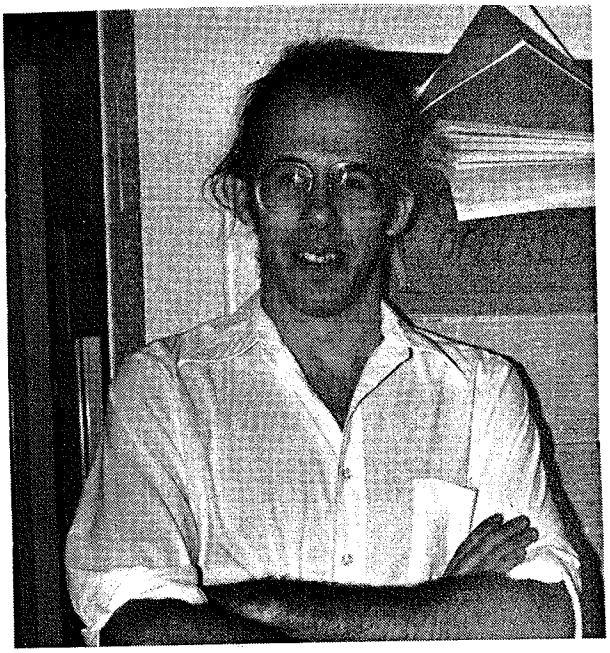


Bruce McPheron

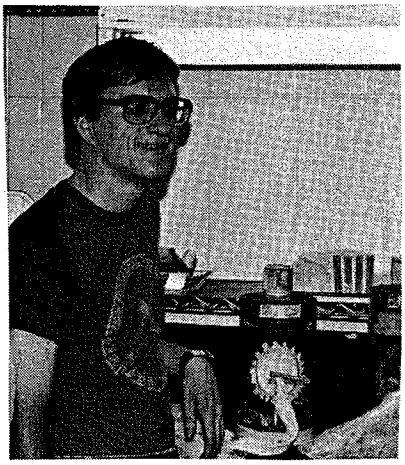
Carol Anelli



James Saxon

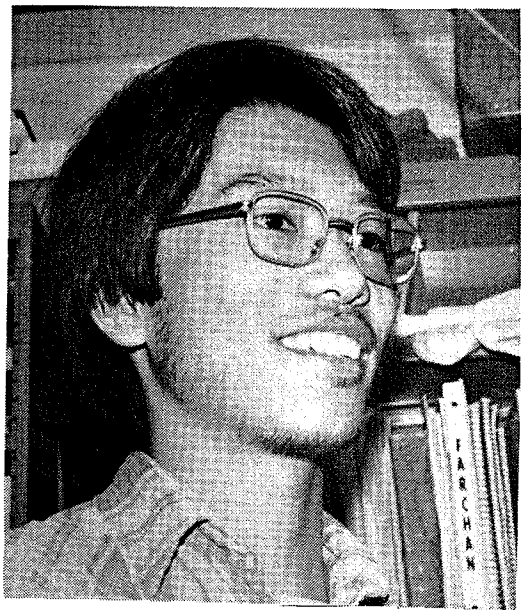


Mark Sturtevant

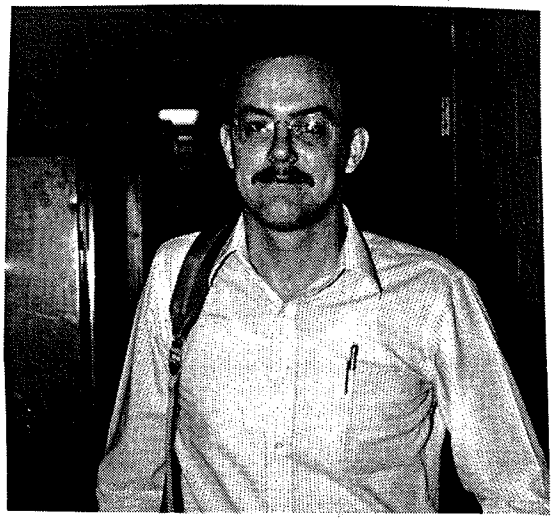


Thomas Baughman

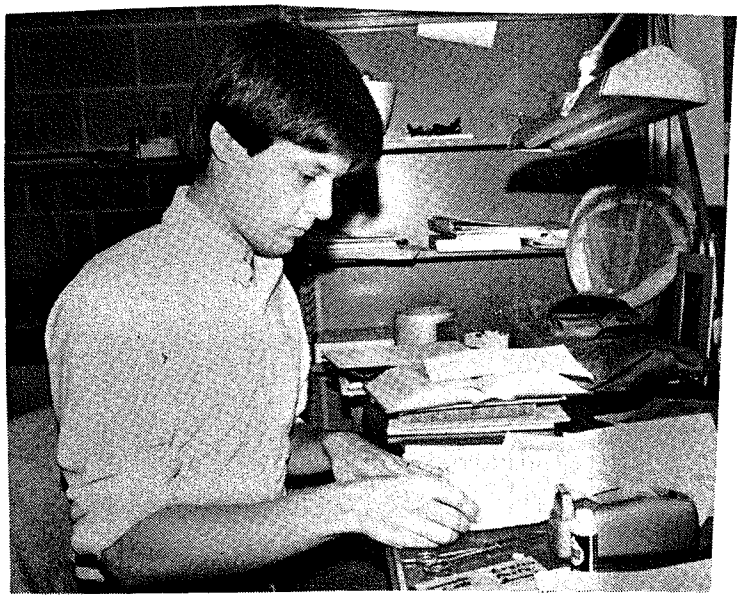
Marilyn Morris



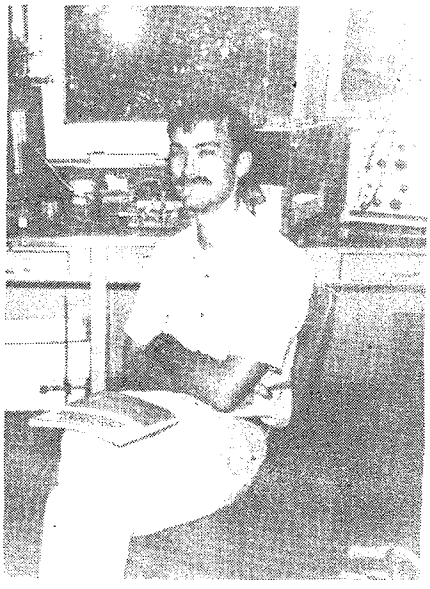
James Nitao



Keith Hunter

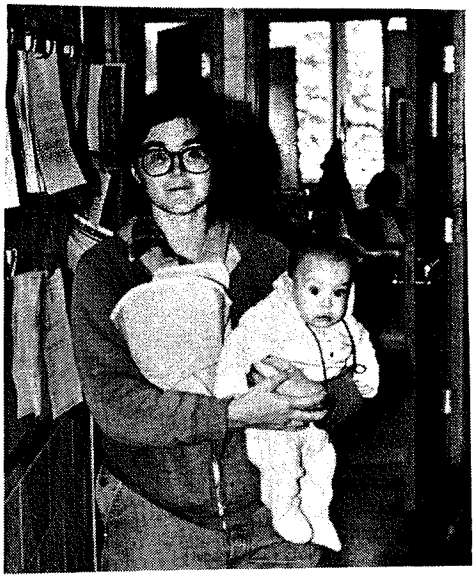


Eric Day



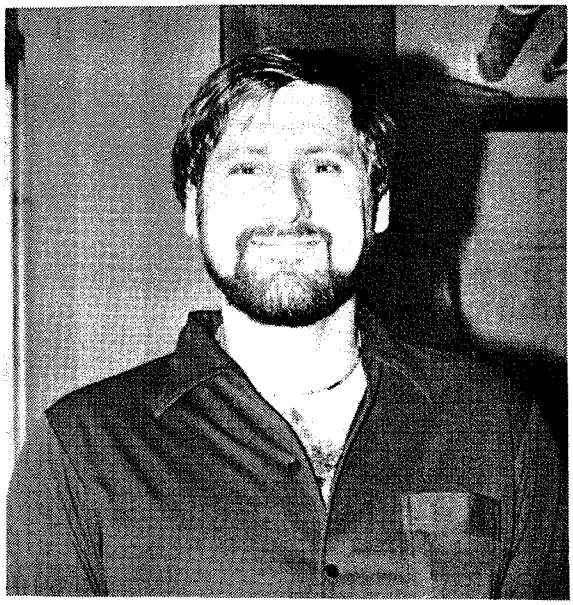
Lane Smith

Dennis Fielding

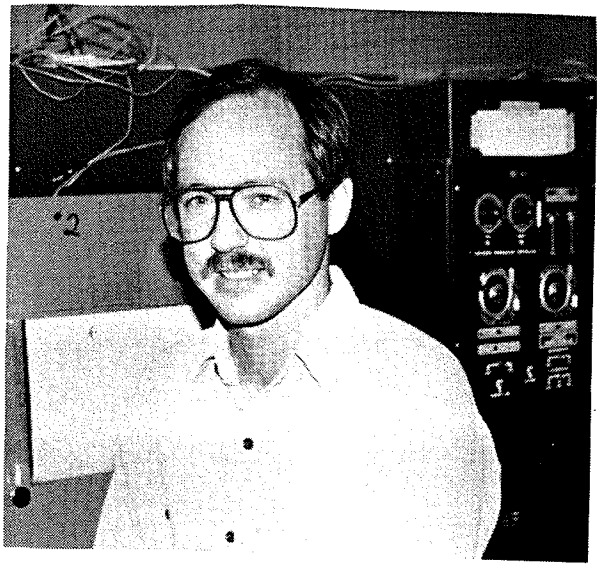


Rebecca Grosser and Daniel

Sylvia Reid

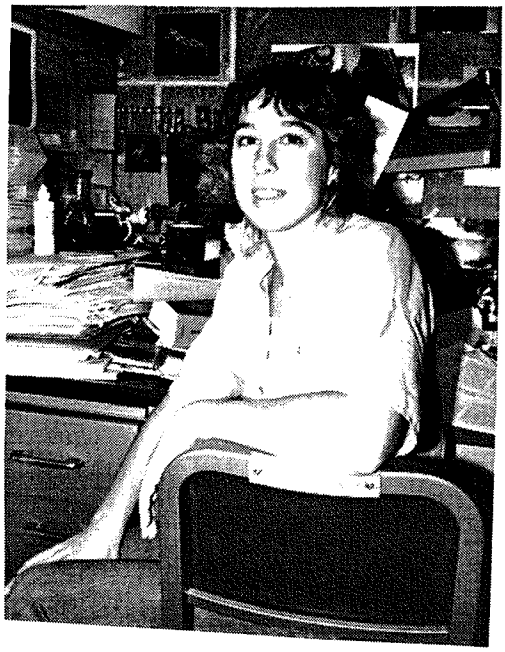


Joel Seigel

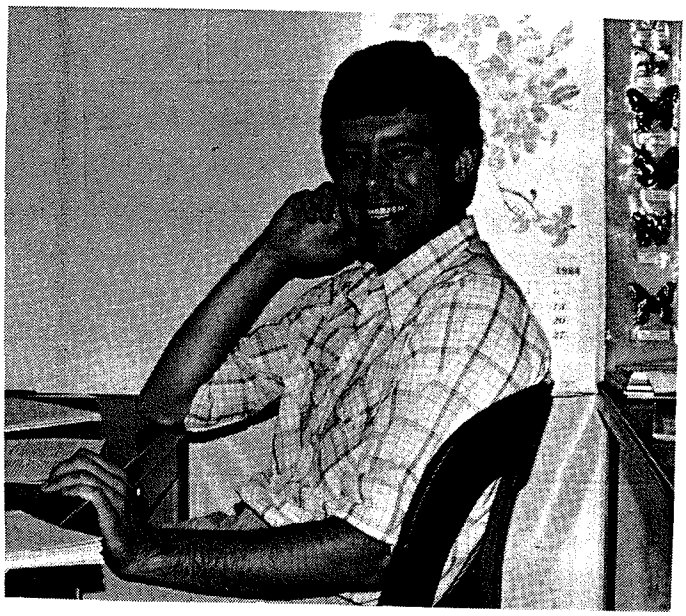


Mickey McGuire

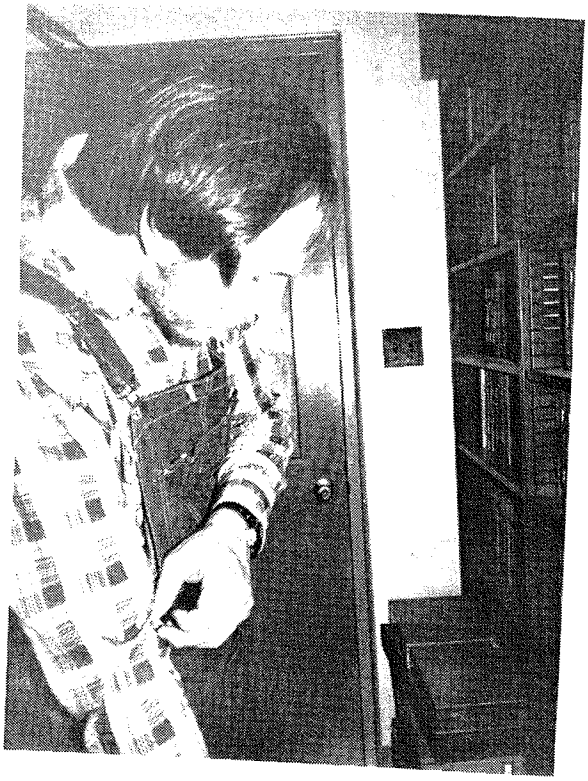
Steve Passoa



Ellen Heininger



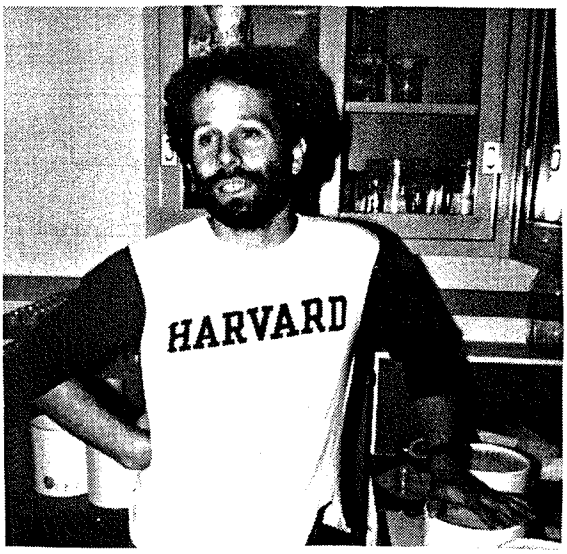
Alan Schroeder



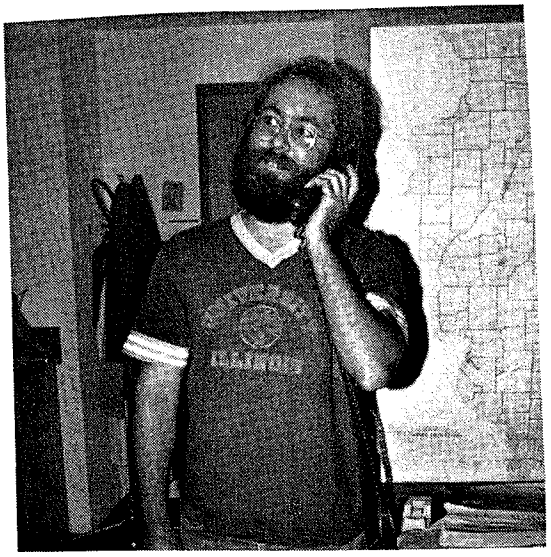
Charles Vossbrinck

Sara Lanka

Eugene Miliczky



Randy Cohen

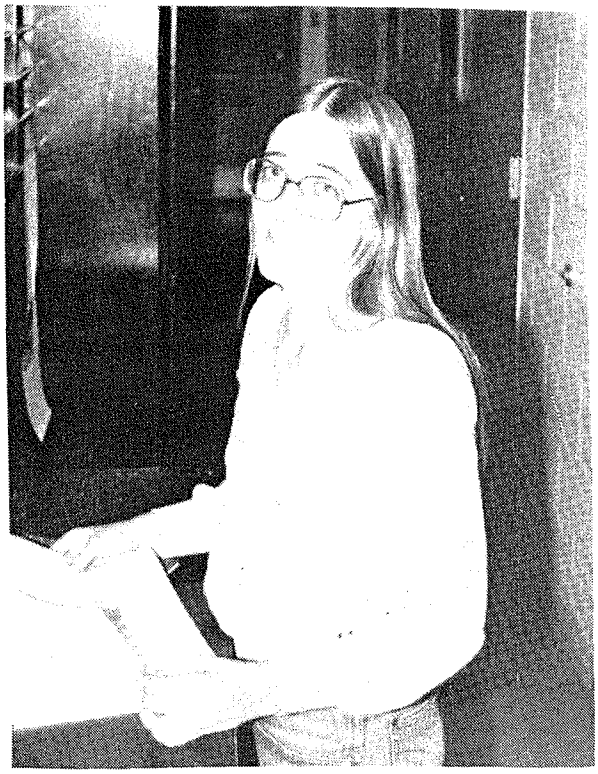


Steve Sheppard

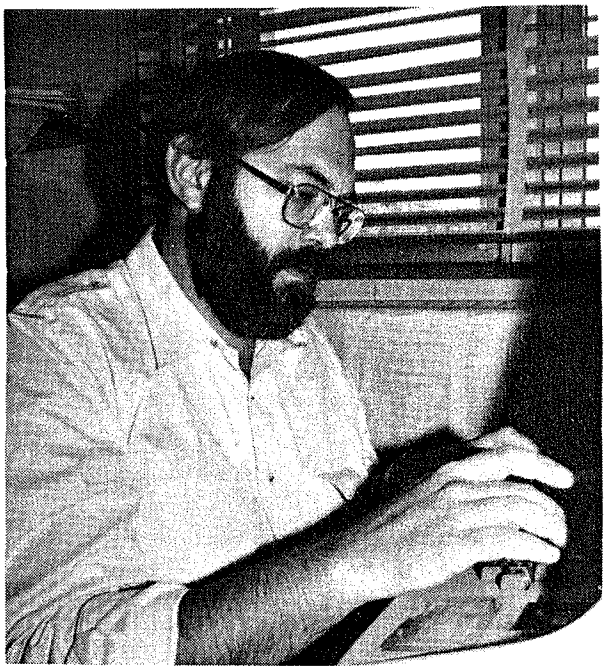
Bruce Steinly

Diana Cox

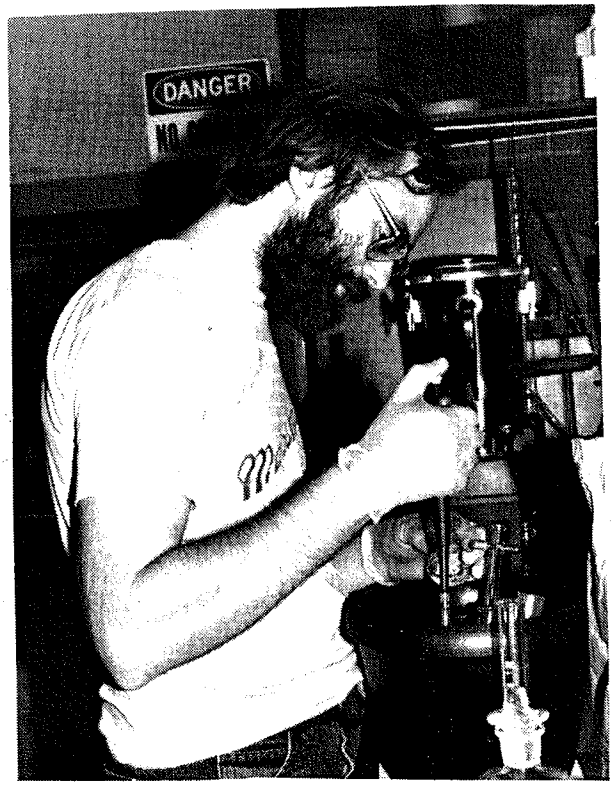
Sherri Sandberg



Laura Simms

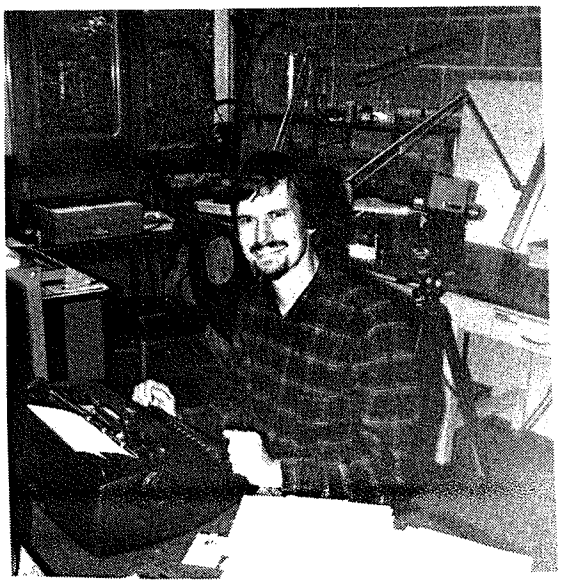


Richard Lampman



Jonathan Neal

Art Zangerl
Research Associate



ABOUT THE ALUMNI

Death

We note with regret the death of Herbert Lipke, a 1953 Ph.D. who studied with Dr. Fraenkel and was a postdoctoral student with C. W. Kearns. At the time of his death on November 27, 1983, he was employed at the University of Massachusetts as a Professor of Biology. He was an excellent person.

Letters

Mohammad Abdullah, 16 New Park Court, Brixton Hill, London SW2 1HS, United Kingdom

I wish to inform you for your newsletter a recent book of mine: Darwin and Evolution from the point of view of a Muslim Scientist. Publishers: Diru Book Depot, 4160 Urdu Bazar, Jama Majid, Delhi 6, India.

John F. Anderson, Head, Department of Entomology, The Connecticut Agricultural Experiment Station, 123 Huntington Street, Box 1106, New Haven, Connecticut 06504

My family and I continue to live in Connecticut on the shores of Long Island Sound where I am Head of the Department of Entomology at The Connecticut Agricultural Experiment Station in New Haven. Research interests are varied and include ticks, spirochetes, rickettsiae, Babesia, forest defoliators, honeybees, pesticides, tabanids and houseflies. A considerable amount of my time is spent studying various aspects of Lyme disease. I am presently President of the Connecticut Tree Protective Association, a relatively large state organization devoted to the care and protection of trees. Within the past year, I received a Citation award from the International Society of Arboriculture, and a special award from the Connecticut Beekeepers Association.

Thomas E. Anderson, Boyce Thompson Institute for Plant Research at Cornell University, Tower Road, Ithaca, New York 14853

In May 1981, I completed my Ph.D. at North Carolina State University. My thesis research considered the population dynamics of the European corn borer in the coastal plain of North Carolina.

In June, I began work at the Boyce Thompson Institute at Cornell University, as an assistant entomologist. I am currently studying the use of entomopathogens in IPM systems, including pathogen-pesticide interactions. I am currently spending most of my time on the use of Beauveria bassiana for Colorado potato beetle management. In addition, I am engaged in a cooperative program with Merck, Sharp and Dohme Research Laboratories on the activity and the mode of action of avermectins, highly insecticidal natural products produced by the soil microorganism Streptomyces avermitilis.

On the personal side: Last February 7, 1983 my wife Susan (whom I met in INTSOY while at the U of I), gave birth to a daughter, Gwynneth Margaret. She's made me appreciate the value of a good night's sleep.

When I'm not in the lab or field plots, you can find me cross-country skiing in the winter, or sailing on Cayuga's waters in the summer.

James W. Apple, 6534 Casabella, Boca Raton, Florida 33433

I have been retired from the University of Wisconsin since 1977. We moved to Florida and now live a few miles from Dr. George Decker in Miami. My "professional activity" involves a few colonies of honey bees. I keep busy doing volunteer work in our Home Owners Association, Camino Woods, and managing two rental properties.

R. T. Bell, The University of Vermont, Department of Zoology, Marsh Life Science Building, Burlington, Vermont 05405-0086

My own recent activities are as follows: my wife and I have just completed the fourth (of five) parts of a revision of the Rhysodid beetles of the world. We are also working on a large collection of Carabidae which we made during a sabbatical in New Guinea in the spring of 1982.

Angel Berrios-Ortiz, Universidad de Puerto Rico en Mayaguez, Colegio de Agricultura Y Artes Mecanicas, Mayaguez, Puerto Rico 00708

It was a very nice surprise to hear from the Entomology Department once again. I thought I was one of the few interested in the whereabouts of fellow grads but it seems the crowd is much larger. I think the fact that we still care to hear about everyone else says very much about the tight friendships, the sense of belonging, the gratitude and the strong attachment that many of us feel towards the University of Illinois and the Entomology Department in particular.

For the past few years, I have devoted most of my time to teaching at the University of Puerto Rico. I have travelled to Colombia a couple of times and also keep doing some research. I consider myself very lucky to be able to go back to U of I now and then during summers.

Govindan Bhaskaran, Interim Director and Professor of Biology, Texas A & M University, Institute of Developmental Biology, College Station, Texas 77843

In my laboratory, we are continuing the studies on the regulation of corpus allatum activity in the last instar larva of the tobacco hornworm (Manduca sexta). Steve Sparagana, one of my graduate students, showed that the CA of wandering larvae and pupae are unable to synthesize JH because of the loss of JH acid methyltransferase activity. In vitro, these glands secrete considerable amounts of JH acid. Concurrent with the change in biosynthetic capacity of the CA, imaginal discs acquire the capacity to methylate JH acid and the JH made in the disc cells prevents precocious adult differentiation. A detailed study of JH acid methyltransferase in CA

and the discs and the mechanisms regulating the activity of this enzyme are in progress.

The rest of my time is devoted to teaching (Comparative Endocrinology in fall and Vertebrate Embryology in spring) and administration of the Institute of Developmental Biology.

Murray Blum, Department of Entomology, University of Georgia, Athens, Georgia 30602

Activities in the last three years include chemical ecological studies of ants in Spain. A joint meeting (U.S. - Taiwan) on Chemical Ecology in Taiwan with a side trip to Hong Kong and lots of ant digs in Thailand after that.

The "Big" news is an exchange program in entomology between the University of Paris and the University of Georgia which I just closed out in Paris on behalf of my school. In finalizing the exchange, I decided to start things out by exchanging myself! We now have an apartment in Paris and plan to stay till March 1985. I have been appointed a Visiting Associate Professor at the University of Paris (VI) (Pierre and Marie Curie University) and will give some lectures in Chemical Ecology - in French, mon dieu! Will do research on ant-derived natural products as insecticides and hopefully see a bit of France. It should be great fun.

U. Eugene Brady, The University of Georgia, Department of Entomology, Athens Georgia 30602

Research at the University of Georgia since 1965 has involved insecticide toxicology and pheromones in stored product insects. More recently, I have been working with prostaglandins and related lipids. The role of these compounds in insecticide action is my current research interest. I enjoy consulting for the family pest control business which is operated by my two sons and my wife, Bobbie. Our grandson is four years old. Hiking on the Appalachian Trail is a favorite activity. Maine by 1995!

William R. Campbell, Ciba-Geigy, Agricultural Division, P. O. Box 18300, Greensboro, North Carolina 27419

In 1975, I moved from the Vero Beach, Florida, facility of CIBA-GEIGY to the Greensboro, North Carolina, facility. I also changed jobs. My current position, entitled Staff Toxicologist, has the responsibility of ensuring the safety of our products. Most of the evaluation studies I am responsible for occur prior to registration, but some, particularly with humans, are conducted after registration. I became board certified in Toxicology in 1979, but I am still not quite sure what this means.

Stanley D. Carlson, Professor, University of Wisconsin-Madison, Department of Entomology, 237 Russell Laboratories, 1630 Linden Drive, Madison, Wisconsin 53706

Soon it will be 13 years since I left Urbana with a U-Haul trailer bound for Madison. After a decent interval I made full professor and am responsible for teaching sensory physiology and insect morphology. As to research, we've recently published some excessively long treatises on insect glial cells - their ultrastructure and membrane specializations. We don't apologize for this seeming excess because for over half a century glial cells were nearly anonymous. We were also able to "drive" photoreception cells and see the "holes" in the membrane from exocytoses of neurotransmitter. Everybody "knew" photocepter cells did this kind of thing but no one had seen them do it before.

As to personal news, being married to Dr. Chi (who has more University degrees than I do) has paid off in my acquiring (siring) a daughter, now six years old. May is a delight. Chi took her Ph.D. in Neurosciences and a second M.S. in computer science (from UW-Madison). She is employed by Nicolet Biomedical Instrument Co., doing the software for evoked potential instrumentation. She cooks, I clean. And that's the news that's fit to print.

Franklin Chang, University of Hawaii at Manoa, Department of Entomology, 3050 Maile Way, Room 310, Honolulu, Hawaii 96822

Greetings! I am presently on the faculty of the Entomology Department at the University of Hawaii in Manoa and hold a joint appointment as researcher with the Hawaii Institute of Tropical Agriculture and Human Resources (HITAHR). I teach graduate level Insect Physiology as well as an undergraduate course in Insect Morphology. For the last several years, most of my research efforts have been directed toward evaluating a special group of chemical compounds for potential use as antipheromone agents and chemosterilants against the Mediterranean fruit fly, Ceratitis capitata. My other areas of interest include hormonal regulation of pigment formation.

Although it has been nearly 15 years, I have not forgotten the many fond memories as one of Stan Friedman's grad students, and the many experiences I shared with fellow grad students during that period.

Andrew C. Chen, 1101 Merry Oaks Drive, College Station, Texas 77840

A lot has happened in the past three years. First of all, I joined one of the world's largest organizations, the U.S. government, in August, 1982. Specifically, I am at the Veterinary Toxicology and Entomology Research Laboratory, Agricultural Research Service, U.S. Department of Agriculture, in College Station, TX, home of the Texas Aggies. (I hate to mention this fact because personally I not too terribly proud of being around the Aggies, but people might not find College Station on the map if I failed to mention this.) I am involved in research on the hormonal control of homeostasis in livestock insects, the stable fly in particular.

I manage to find time on weekends to cultivate my personal hobby, fine woodworking. I have built several pieces of furniture around the house and my ultimate goal is to furnish my entire house with my hand-made furniture.

Soon after I settled down, my wife Pat started working with Max Summers, one of the world's leading entomologists (at least on the basis of funding). The only non-business travel she and I have done in the past 5 years was a trip back to Taiwan this past winter. We spent 3 weeks with our folks, the first time in seven and half years. It turned out to be a very nice visit. I got a lot accomplished, even managing to give two seminars, one at my alma mater, Fu-Jen University, the other at Academia Sinica.

Ron Cherry, E.R.E.C., P. O. Drawer A, Belle Glade, Florida 33430

After graduation in 1976, I went to the citrus blackfly program in Fort Lauderdale, Florida, working there until 1979 when the program was completed. From 1979 to 1981, I was involved in alligator (i.e. big reptile) control and biology in south Florida. Since 1982, I have been working as an entomologist at Belle Glade, Florida on sugarcane and rice insects at the Everglades Research and Education Center (IFAS). Tomorrow (6-28-84), I will be going diving for several days in the Florida Keys on my boat with friends. As you see, from my midwest origins, I have evolved into a total tropical animal including the "laid-back" tropical mentality.

Eddie H. and Li-Chun Chio, Lilly Research Laboratories, Greenfield Laboratories, P.O. Box 708, Greenfield, Indiana 46140

In the past few years Li-Chun has been working as Department Head of Domestic Engineering in the "House of Chio". Besides our two kids (Lora, 7 and Eugene, 4) we have three nieces - all teenagers - staying with us. These new additions make us appreciate "The Waltons" and "Eight is Enough" very much.

Between dropping off and picking up kids, Li-Chun managed to be interviewed last year by reporters from the Indianapolis Star and showed them how to prepare Chinese food. She also has been invited by several clubs to demonstrate Chinese cooking in the Indianapolis area in the past few years.

Working in private industry, I have learned to be an insect exoskeleton - tough but flexible. My research is still focused on R&D of novel insecticides. Up to now, I have two papers concerning insect growth regulators.

This coming June I have been invited to a convention for the Chinese scientific community for the Midwest Region in Chicago and to chair a technical session entitled "Development of Agricultural, Forestry and Marine Resources".

Robert W. Clegern, Lt. Col., USAF, Department of Defense, Armed Forces Pest Management Board, Forest Glen Section, WRAMC, Washington, D.C. 20307

We finished a four-year tour in Europe, where I was fortunate enough to be the Air Force Command Entomologist. In actuality, my duties covered almost anything biological in Europe and the Middle East, so I was spread a bit thin. But great experience! From there we moved to Washington, DC, where for two years I have been the Air Force representative on the Armed Forces Pest Management Board. We push a lot of paper, but also have the primary policy/advisory role for entomology in the Department of Defense (DoD). It's interesting, and as they say in the military, the "opportunities" are never-ending. A few points of possible interest would include (1) (for industry) - we have the responsibility for approval of all pesticides and pest management equipment in the military supply system, (2) (for researchers) - we have an on-going research program within DoD and in conjunction with USDA, (3) (for teachers/extension) - DoD continues to expand its training and certification program - the first such federal program approved by EPA, (4) (for students) - we maintain close coordination with those officers in each of the military Departments who are responsible for the selection and assignment of entomologists, and (5) (for bibliophiles) - we have a fine computerized literature storage and retrieval system.

On the family side, vacations during the past few years have included a memorable trip through England, Wales and Scotland, some time at home in Texas, and a couple of weeks in Cape Cod and Connecticut last summer.

Joel R. Coats, Department of Entomology, Iowa State University, Ames, Iowa 50011

I am currently Associate Professor of Entomology at Iowa State University. I arrived here in 1978 after 2 years at the University of Guelph in Ontario. I teach Insecticide Toxicology and have also been involved in Seminar, Pest Management, and a special topics course in Resistance. My research program includes aspects of insect toxicology and environmental toxicology; I currently have 5 graduate students. I recently edited a book Insecticide Mode of Action (Academic Press), and I am now organizing an Interdepartmental Toxicology Major at the graduate level, spanning 11 departments in 4 colleges. I am involved in activities with the 3 kids but find some time to play and coach softball and play some golf and several racquet sports.

Susan Coats, 12 Insectary, Iowa State University, Ames, Iowa 50011

During the past three years I have been working on my Ph.D. in Entomology. I have completed the coursework and the preliminary examination and am currently conducting research on the western corn rootworm under the direction of Drs. Jon Tollefson and John Mutchmor. My research deals with the physiology and induction of migratory flight: changes and effects of ovariole development and effects of juvenile hormone and anti-juvenile hormone on migratory flight.

In addition, I have slowly been building a violet and houseplant business. A small (10' x 12') greenhouse on the back of our home provides a welcomed refuge for tired eyes and mind as well as being home to a vast array of exotic plants; orchids, violets, episcias, ferns, epiphytic cacti, and many other plants live in splendid harmony here.

Finally, I fill every other waking moment with the pleasure of parenting our three lovely, growing, vivacious children: Sarah is 9 years old and in 4th grade, Jesse is 7 years old and in 2nd grade, and the youngest, Aaron is 5 years old and in Transitional (all-day) Kindergarten.

Ed W. Cupp, Department of Entomology, Cornell University, Comstock Hall, Ithaca, New York 14853

Things are going well professionally. I spend a fair amount of time investigating the epidemiology of human onchocerciasis ("river blindness"; Robles' Disease) in the tropical rainforests of Liberia and in the mountains of Guatemala. By doing so, I've developed a healthy respect for the rigors of field work as well as the logistics and politics required for such endeavors in a foreign setting. At times, the variety and intensity of other arthropod-associated diseases in these countries can also be overwhelming. However, both places are veritable paradises for the medical entomologist!

In between helping Pan Am fill its seats, I've expanded my teaching from medical entomology to include medical parasitology. I was recently made a member of the Department of Preventive Medicine at the Cornell College of Veterinary Medicine. Along those lines, I helped revise a textbook entitled, "Clinical Parasitology", which just came off the presses. The senior author is Dr. Paul Beaver, an Illini alumnus from the '30s who was a student of Henry Baldwin Ward.

Enough of the usual professional chest-thumping. The really exciting news for me and my family is that my wife (Mary) will soon complete all the requirements for a Ph.D. degree in Nutritional Biochemistry. My daughters (Rachel, age 10; Eleanor, age 15) and I are quite proud and also greatly relieved after "housing a graduate student" for the past 4 1/2 years.

I would like to conclude by sending my warmest personal regards to the Entomology Faculty and my colleagues from the Department, and in particular to those students who passed through Morrill Hall during the 1965-69 era.

Paul A. Dahm, Department of Entomology, Iowa State University, Ames, Iowa 50011

I am working half-time, arranging departmental seminars, acting as state liaison with a national pesticide assessment program, and doing some writing.

David L. Denlinger, Department of Entomology, Ohio State University, 1735 Neil Avenue, Columbus, Ohio 43210

Ohio State continues to tolerate me as a faculty member. I've been entrusted with two courses in insect physiology and a few too many committee assignments. A great crew of graduate students and a couple postdocs are keeping my lab alive and well. We continue to devote much of our effort to insect diapause, but we're also excited by our recent discovery of estrogens and androgens in insects. What they're doing there is still a big mystery. Occasionally I get back to Africa to continue work on tsetse flies, and a palm tree on Barro Colorado Island that attracts an annual aggregation of over 70,000 endomychid beetles lures me to Panama periodically. My wife Judy and sons, Michael (12) and Jonathan (7), seem to be thriving in central Ohio. The beehive in our backyard is providing us with our sugar supplies, and we're still jogging around the neighborhood and entering an occasional race.

Jerry DeWitt, Extension Coordinator, Integrated Pest Management, Iowa State University, 105 Bessey Hall, Ames, Iowa 50011

I am presently a Professor of Entomology at Iowa State University in the Department of Entomology and serve as the Extension Coordinator of Integrated Pest Management.

Tobias F. Dirks, Dalton Junior College, Unit of University System, Dalton, Georgia 30720

I teach at Dalton Junior College and operate a pest-control company (Dirks Services). Five employees are now needed to keep everything reasonably under control. Judy works part-time as a medical technologist at the hospital in Dalton.

Our oldest son, Russell (23), has graduated from Auburn University with an Economics Degree. Clarke (22) is in Bozeman, MT where he can do plenty of trout fishing and big game hunting. He will continue his college career at Montana State University in the fall studying wildlife management. Lisa (20) in attending Auburn University majoring in marketing. Matthew (16) is a sophomore in high school.

I still maintain an interest in vespid wasps but have not done any formal research in years. If I ever get to the point where I can pursue one career instead of two, and can have facilities available, I would like to do some research. Now my main activity is to serve as a resource person in the community and write an occasional informative article for local consumption. A consuming interest in the last few years has been the observation of the European hornet (Vespa crabro), which has finally arrived here.

John L. Eaton, Department of Entomology, Virginia Polytechnic Institute, Blacksburg, Virginia 24060

My research interests continue to involve studies of moth ocelli and their function. Recent achievements include discovery of ocellar primordia in larvae and a method of producing anocillate moths for study. I have

also designed a microcomputer monitored actograph for moth flight activity studies. Peg continues to enjoy being a needlework shop proprietor. She is very involved in a national needlework marketing organization and frequently travels in the U.S. on business. Our children are close to leaving home. Scott lives in Richmond, VA. Marc will be a senior in high school and Kent will be a freshman in high school.

Gary Eertmoed, Chicago State University, Department of Biological Sciences, Ninety-Fifth Street at King Drive, Chicago, Illinois 60628

I am still at Chicago State University, teaching a variety of subjects (entomology, evolution, biometrics). There will be no more teaching summers, however. A summer home in Canada allows an annual escape to the real world. My research interests are still centered around psocid taxonomy. Research productivity has been on the increase this year since the Field Museum has provided me with an office and research space where I can retreat from the onslaught of telephones, memos and meetings. My daughter, Jeannine, is now a junior at Urbana; where do the years go?

David L. Evans, American University of Beirut, 380 Madison Avenue, New York, New York 10017

I have moved from my teaching post at the University of Maryland, Heidelberg, West Germany to a teaching and research position at the Department of Biology, American University of Beirut, Lebanon. I have several graduate students, two of whom are finishing this year (1984). The Mediterranean ecosystem of Lebanon is a constant source of inspiration and several research projects are underway: "Behavioral ecology of Palaemon elegans (Crustacea)"; "Defensive strategies of Caenocoris nerii (Lygaeidae)"; "Rhinocoris punctiventris: (Reduviidae) a sit-and wait predator", etc. One project has no name because the species involved is apparently new to science.

If the Lebanese political situation stabilizes next year, I will stay in Lebanon.

I have met a charming Lebanese woman (Henriette) and we are now married.

Mohammed Y. Farooqui, Department of Pathology, University of Texas, Galveston, Texas 77550

It has been about five years since I have left the University of Illinois. Since my dissertation research was in pesticide chemistry I pursued my career in environmental toxicology at the University of Texas Medical Branch at Galveston, TX. These last five years have really been very productive for me. Currently I am working as a postdoctoral research associate on a federal grant to my supervisor.

I am involved in various toxicological and metabolism studies on aliphatic nitriles. The objective of these studies is to understand the relationship between the specific toxicity of these chemicals and their biotransformation. They each have entirely different toxic effects.

Target organs for DMAPN (N,N dimethylaminopropionitrile) are kidneys and urinary bladder whereas PCN (propionitrile) causes stomach and duodenal ulcers. The research I am involved in is aimed at establishing the molecular mechanisms underlying the organ specific toxicity of these chemicals.

In summary, my research interests are mainly directed towards investigating the effects of environmental toxins and understanding the mechanism of toxicity using biochemical parameters involved.

Susan W. Fisher, Department of Entomology, 103 Botany and Zoology Building, 1735 Neil Avenue, Columbus, Ohio 43210-1220

Since departing Illinois with a degree in insecticide toxicology in May of 1981, I have moved on to Ohio State University as one of the untenured masses (read Asst. Professor) whose youthful years are now being offered in exchange for permanent residency. Oh yes, I also married Scott Fisher, my former Latin T.A., in September 1981. (Yes, I did get an A out of the class).

In the scientific realm, my progress at OSU has been slow to mature, but is now coming along. We are actively engaged in a variety of projects which include examining the environmental fate of aldicarb, predicting the fate of aquatic pollutants with computer models, analyzing the genetic basis of insecticide susceptibility in various strains of Tetranychus urticae, studying secondary modes of actions for carbamates in earthworms and general toxicity testing for nontarget species such as pillbugs and earthworms.

In addition to research, my teaching responsibilities at OSU have been diverse. My current responsibilities include the insect toxicology course, a general pesticides course and the biology course for "non-majors". I have also taught a pesticide law course, the basic biology course for majors and have participated in a general toxicology course which attempts to combine the faculty of 4 colleges.

On a more personal note, our farm continues to thrive. Last year saw the addition of various members of the ovine and porcine persuasion. The human population has also been inflated with the arrival of our son, Justin, on March 15, 1984. Thus, our household and careers are in a state of readjustment as we learn to cope with the myriad changes that having an infant in the house brings.

Frank W. Fisk, 916 W. New York Ave, Apt. 202, DeLand, Florida 32720

In the 8 years since retirement from Ohio State University, I've been continuing research on neotropical Blattaria. Last summer we sold our home and are now enjoying Florida living.

Roger Flattum, 2605 Marlboro, Modesto, California 95355

I joined the Biology Department, Winona State College, Winona, Minnesota, in 1967 and taught zoology, entomology and genetics for one year, followed by a year of post doctoral study in insect neuropharmacology

with Dan Shankland at Purdue. In September of 1969 I was hired by Shell Development Company as an entomologist to join a team to conduct exploratory research in insect neurobiology with the objective of discovering new chemicals for the control of insects. After seven years of research at the BSRC, Modesto, California, I was named Manager of the Entomology Department and simultaneously manager of the Plant Sciences Department. I held this position at Modesto for four years. During this period, we established field research stations, a Plant Growth Regulatory Group within the Plant Sciences and integrated basic with applied biological research.

This assignment was followed by a transfer to Houston, Texas and a three year tour of duty as Manager of R&D Coordination for agricultural chemicals. Currently, I'm back in Modesto as Manager of Agricultural Biotechnology. I've been in this new job for about a year. We are recruiting staff (molecular and cellular biologists) to complement existing staff in the search for new ways of controlling agricultural pests (insects, mites, nematodes and weeds) to enhance plant yield and to combat plant disease.

The family is fine! Jean has been very busy during our various moves. Chris, our daughter, is now seventeen, and plans to enroll at UC-Santa Cruz in 1985. Judson is also a teenager and will be in the eighth grade this fall. He is keen on sports right now, and has some size and ability.

Willard Fogal, Petawawa National Forestry Institute, Chalk River, Ontario, KOJ 1JO, Canada

I'm now working at the Petawawa National Forestry Institute and have been for the past 6 years. My research activities have focused on seed and cone insects on white spruce seed trees. These critters are very difficult to control but we've had some success with systemic chemicals applied to soil, injected into stems or sprayed onto foliage. We've also tested Beauveria bassiana as a possible biological control agent and are looking at pheromones as potential monitoring tools. I don't get many opportunities to do physiological research on insects; instead I spend a great deal of time thinking about the physiology of trees and have devoted some time to insect and disease resistance in cooperation with tree breeders and geneticists. The work is rewarding and interesting.

Rachel Galun, Department of Parasitology, Hebrew University Medical School, En Kerem, Jerusalem, Israel

From the mid 70's until 1982, I was head of the Department of Zoology at the Hebrew University in Jerusalem. Since then, I have maintained a position in Zoology and at the same time have been the Principal Investigator on a joint Israel-Egypt (Hebrew U. - Ain Shams U. Cairo) project dealing with arthropod borne diseases. My major research effort in the recent past hase focused on the chemosensory basis of blood feeding in mosquitoes, ticks, tsetse flies, leeches, etc., and on nutritional studies on the medfly, Ceratitis capitata.

Early this year I came to the NIH in Bethesda on sabbatical. When I return to the Hebrew University in November, I shall be taking up a

position in the Department of Parasitology at the Medical School and continuing the above studies.

Francis Gardner, Department of Biology, Columbus, Georgia 31993-2399

I am completing my tenth year at Columbus College in Columbus, Georgia. I am in a Biology Department of nine faculty members with approximately 100 majors. We offer only a B.S. in Biology and are primarily a teaching institution, although a recent change in administration is more encouraging with regard to research activities. I've completely changed my interests to coincide with my teaching assignments in Animal Physiology and General Biology. Equipment and space limitations make research extremely difficult, but I've managed to conduct modest efforts which are aimed at assessing protocols for human performance analysis and exercise physiology. Unfortunately, I've found little time to do much with my favorite creatures - insects (especially P. americana). All in all I'm quite happy with my position here. I'm currently awaiting word from our Board of Regents for promotion to full Professor (institutional approval has been given). Last year I was given the Educator of the Year award by Student Government, having been nominated twice previously. I really enjoy the teaching and I'm happy that I'm also now having more opportunity to do research as well. This is a good opportunity to say hello to all of those that I've lost touch with and truly hope you're all doing well. If you're ever in Columbus, Georgia, give me a call.

I've also been actively combating "Scientific Creationism", but that's another story.

Edwin G. Gemrich II, Parasitology Research, The Upjohn Company, Kalamazoo, Michigan 49001

The years 1982 and 1983 brought major changes in the research management and structure at Upjohn following retirement and replacement of the Directors of both Pharmaceutical and Agricultural Research. Pesticide research was virtually eliminated in favor of programs directed at veterinary research. The Experimental Agricultural Sciences Unit to which I belonged was disbanded; personnel were then assigned to newly designated groups. I enjoyed my association with the EAS Unit having spent 3 years heading up a cooperative insecticide developmental project between Upjohn and Mitsubishi which resulted in EUP Registration in the United States.

I am now a member of Parasitology Research which has a moderate focus on the control of endo- and ectoparasitic insects. Still, I expect to be able to contribute to the program more in the traditional sense of improving their discovery research. I wish to reduce their historical emphasis on "utility" and integrate more chemistry with parasite and host biochemistry and physiology.

I have managed to enlist support for the development of an electrophysiological component in our Parasitology R&D program. Soon, I hope to be directing my attention to the pharmacological actions of

avermectin-like compounds on transmission at invertebrate inhibitory synaptic junctions.

On the lighter side, I am now a jogger. Fast, I am not. My trophy case is proof of that - - it's empty. Gardening still rates as a big plus with me. The only thing that gets me through the cold Michigan winters is the seed and nursery catalogs that begin arriving around Christmas - I know spring can't be far behind (5 months at most). Macho activities continue to include fishing and hunting, considered acceptable pursuits for not spending time with the family, as one is "saving on the wife's grocery bill." I try to sandwich the above activities between the myriad events a parent of teenage children is supposed to attend.

Henry E. Gray, 2812 Scott Street, Midland, Michigan 48640

I retired from The Dow Chemical Company in May 1982, after 29 years in R & D in the Agricultural Chemicals Department. For the last two years with Dow, I was Manager of Product Liability for the Department--truly an eye opener in human relations activities.

Since retiring I have done a limited amount, by choice, of consulting, but a great deal of traveling. I have remained active in entomological professional societies and maintained close contact with the Independent Telephone Industry.

I surely felt honored to receive two ARPE awards - "Outstanding Award in General Entomology" and "For Distinguished Service to Professional Entomology" at the Detroit meetings in 1983.

I will become President of the North Central Branch of ESA in March 1984. I am looking forward to this experience and the opportunity to continue being active in professional entomology.

Paul Gross, Department of Entomology, University of Maryland, College Park, Maryland 20904

I've been on a research "postdoc" here in the Entomology Department of the University of Maryland since I left Illinois in the summer of 1981. I've been fortunate to have had generous support from my supervisor, Pedro Barbosa, and a very friendly working environment. We've conducted several large scale field experiments concerning effects of background vegetation on parasitoid attack rates. In spare moments, I've worked on my Ph.D. thesis and will defend it this fall in Urbana. I'm looking forward to the visit.

Frank E. Guthrie, Department of Entomology, North Carolina State, Raleigh, North Carolina 27607

I am still holding forth at NC State University (since 1954). I'm teaching a combination of the old Kearns-Horsfall courses (an unlikely wedding). Also teach Insect Toxicology every other year and head up our training program in toxicology (not limited to insects).

My research is absorption of pesticides and transport of pesticides by insect and mammalian blood.

Recent "honors" (a real phoney can fool 'em all) include: The Governor's Gold Medal for Science, O. Max Gardner Award, NC Alumni Association Award, Society of Toxicology Award for Education.

My enemies will be pleased to learn that I now do nearly all my traveling in a little battery driven cart. My "friends" (?) will be pleased to hear it has been to Japan, Switzerland, and over much of the U.S.

Retirement? Hell, I'm only 61 and still have the old MARINE SPIRIT.

Suzanne V. Hart, 612 Ralph Drive, Raleigh, North Carolina 27610

Since 1980, I have been working with a soybean breeder at North Carolina State University, Raleigh, to develop soybean germplasm with resistance to corn earworm and Mexican bean beetle. We released 3 lines of insect-resistant germplasm to soybean breeders in 1983. The funding for my present position ends this April/May, so I am working on publications and looking for a new position.

Aside from work, I have been enjoying the mountains and ocean as well as the variety of flora and fauna in North Carolina.

Frank F. Hasbrouck, Curator of Insects, Department of Zoology, Arizona State University, Tempe, Arizona 85287

I started collecting insects in Peoria, Illinois, in 1930 and came to the University of Illinois in 1940. There, Metcalf & Flint were in their heyday. At the Department of Entomology besides Metcalf were Hayes, Balduf, Kearns, & Milum. Horsfall and Fraenkel were to come later. At the Survey, Ted Frison & Herb Ross were in charge of things. Also working with insects there were Barney Burks, Milt Sanderson, Gar Riegel, Katie Sommerman, Dolly Gloyd, and Lew Stannard, to name some of the old crew. My Ph.D. dissertation was done under Dr. W. V. Balduf - a systematic revision of the micro-moth family Acrolophidae.

Earlier this month I turned 64 and have now been semi-retired for 2 years. The University (Arizona State) has kept me on in a 49% capacity to curate the insect collection which I have now worked on for the past 22 years. The official collection is at the land grant institution at the University of Arizona in Tucson. The collection here is sort of a "wildcat" affair that contained perhaps 50,000 specimens when I first arrived in 1962. It now contains about 350,000 specimens thanks to a number of magnificent contributors headed by Dr. Mont A. Cazier. Those on the faculty who strongly supported entomology (Cazier, Herbert Stahnke, Gordon Bender, & Gordon Castle) have all retired (Castle has passed away) and have not been replaced with entomologists and the program has been pretty well phased out in favor of other areas of zoology currently more "popular". All we have left is the collection and one faculty member, an

ecologist, who teaches one or two service courses in entomology. I am presently working entirely alone in the collection.

J. David Hoffman, Mexican-American Screwworm Program, Apartado 544, Tuxtla Gutierrez, Chiapas, Mexico

I have been employed since December 1982 by USDA-APHIS-FS-VS as the Chief of Research and Experimental Development for the Mexican-American Screwworm Program.

I am now in my 24th year with USDA and don't visit Illinois much since both of my parents have passed away, but I still vividly remember my graduate days in Urbana during the mass removal of elms 1958-60. I have heard many kind words about our department over the years. Regards to my friends.

Harry Hoogstraal, Medical Zoology Department, NAMRU-3, FPO New York, New York 09527

During the past three years my research activities have centered on the biosystematics of the Argas ticks of the world; virus infections of Argas and other ticks; the sensory setae associated with the Haller's organ of Argas and other ticks; the biosystematics of the Dermacentor ticks of the Oriental Region and of the Haemaphysalis and Hyalomma ticks of Ethiopian Region; the internal and external anatomy of the family Nuttalliellidae; the tick faunas of the Galapagos and Egypt (in preparation for monographs), etc. Other activities have included supervising research on tickborne relapsing fever epidemiology and on tick hormones and pheromones; supervising and acting as external examiner for M.S. and Ph.D. research at numerous universities around the world; preparing manuscripts for books on tropical medicine, veterinary medicine, Advances in Parasitology, Fauna of Saudi Arabia, Fauna of the Seychelles, etc., serving on editorial boards of 10 scientific journals, refereeing manuscripts for about 20 journals, etc.

Lou A. Jansky, 3305 S.W. 87th Avenue, Portland, Oregon 97225

I have had a private dental practice in Portland, Oregon and have been on the staff of the Oregon Health Science University for the past twenty years.

Donald R. Johnson, Entomologist Consultant, 1362 N. Decatur Rd., N.E., Atlanta, Georgia 30306

After 30 years of service with the U.S. Navy and the U.S. Public Health Service in vector borne disease control programs, I retired from the U.S. government in 1973. I've remained quite active, working as an entomologist consultant, with my office in my home. Usually I attend the meetings of the American Mosquito Control Association, Entomological Society of America, National Pest Control Association, and several other professional associations, in connection with my consultant activities.

Among other things, I am on the Advisory Board of the Pest Control Magazine, and do some training of international participants at the

University of South Carolina International Center for Public Health Research, located at the Wedge Plantation, McClellanville, SC. I have continued my association with the Agency for International Development, where I was on detail from USPHS for many years, now as an occasional consultant. Most recently I participated in the AID Malaria Strategy Workshop last June, to recommend future participation of the U.S. Government in international antimalaria programs. I also am a consultant to a large pesticide application equipment firm.

Kimberly Juhlin, 2 Wadsworth Street, Takaka, Nelson, New Zealand

I have forwarded your letter calling for news which arrived today, March 19, to my daughter, Kimberly Juhlin. Since it most likely would not be possible for her to receive the letter and reply within the time limit, the following in a quick sketch:

Two years ago, April 1982, she left Champaign on her bicycle -- five months and 4,000 miles later she flew to New Zealand -- she has been working with bees on the South Island.

James T. Kardatzke, USA Med. R&D Cmd., Attn: SGRD-PLE, Fort Detrick, Frederick, MD 21701

For the last few years, I have been assigned to the US Army Medical Research and Development Command. Prior to 1981 I was working in a laboratory on developing field survey and control equipment for Army preventive medicine units. Our best item ws a modernized miniature mosquito light trap which is more efficient than the CDC trap in collecting and only has to be visited once a day for battery maintenance. Since May 1981 I have been doing staff work in the medical chemical defense program, primarily on the area of long range planning and budgeting. In June 1984 I will be returning to entomology when I am reassigned to area medical activity at Fort Knox, KY. Going with me will be my wife, Kay (nee Tabaka, a previous secretary of Dr. Luckmann), our 9 year old daughter Kathy, our 5 year old son Ken, and assorted cats and dogs.

Edwin W. King, P.O. Box 1382, Clemson, SC 29633

I retired from the Department of Entomology at Clemson University in 1982, after 25 years of teaching and research there. The teaching was 10 different courses in all, but mostly morphology and taxonomy. The research was mostly biomathematics, tapering off into such things as insects as food, and the rates of feeding of soybean caterpillars.

Somewhat before retirement, I began to put serious effort into biological illustration, and am now a hired pen (or pencil, or scratch-knife) for anyone who wishes my services. Some people have, and I have become a small business---notepaper, prints, originals, commissions. It's interesting, and mildly profitable. It's hard to say when its started, but certainly Pappy Hayes' two-year morphology marathon in 1947-9 provided a certain amount of practice.

Aside from this, there's little I can offer your newsletter. My life is printable, but hardly newsworthy. I'm blessed with good health, satisfactory and independent (2 ea.) children, an agreeable (1 ea.) wife, and most of the things sensible people are content to attain.

John M. Kingsolver, Research Entomologist, Systematic Entomology Laboratory, USDA c/o National Museum of Natural History, Washington, D.C. 20560

In response to your appeal for printable news items for your newsletter, I am still at the same old bench identifying beetles for the Department of Agriculture and trying to improve the classification of the seed beetles (Bruchidae). I have been concentrating for the past few years on bruchids associated with Prosopis, or mesquite, of the Western Hemisphere. This plant has become a rangeland pest in our southwestern states and in Paraguay and Argentina, and 3 or 4 species of bruchids are being tried out for possible biological control. I have worked on several other genera of bruchids that are now involved in biocontrol attempts.

I am fortunate to have one of the most representative bruchid collections in the world available to me, and enthusiastic support from research supervisors for my efforts in the field. I have about six years until I can retire from government service but I haven't decided yet whether I will keep on for a while or not. I certainly have enough projects lined up to carry me through another incarnation!

Kenneth L. Knight, North Carolina State University, School of Agriculture and Life Sciences, Department of Entomology, Box 5215, Raleigh, NC 27650

I retired September 30, 1980 from the position of Head, Department of Entomology, North Carolina State University. After a month's vacation at the coast in October, I filled in during November and December at the Council of Environmental Quality, executive Branch, U.S. Government, Washington, D.C. on a project to encourage the departments of the government to employ IPM philosophies and procedures in their control of pests on government properties and lands.

As with all entomologists of my acquaintance, time remains my most precious commodity. My service since 1981 as Secretary-Treasurer of the ESA has kept me most happily involved in the profession of entomology. Additionally at least a portion of most days is also entomologically involved in the revision of a Southeastern Asian group of mosquitoes in the genus Aedes. This is being done in conjunction with the Medical Entomology Project (U.S. Army supported) at the U.S. National Museum.

My wife, Ruth, continues her staunch but sometimes bewildered support of a retirement life style somewhat different from what she had been led to expect. Our 5 children are all living widely scattered existences of their own. Visiting and otherwise keeping track of them is rather a major task in itself.

Larry Krone, Environmental Health Director, State of Delaware, Wilmington, Delaware 19800

Jim Krysan, USDA Yakima Ag. Res. Lab., 3706 W. Nob Hill Blvd., Yakima, WN 98902

I actually have a bonafide excuse for procrastinating but we now know for sure. Effective Oct. 1, I will be at the USDA Yakima Ag. Res. Lab., 3706 W. Nob Hill Blvd., Yakima, WN 98902. Carole and I look forward to the northwest--we will be "following the children west", as both Pat and Maria are at Stanford; Damian will hold the ground in S.D. at the Med. School.

We are finishing an extensive and satisfying "biochemical taxonomy" of Diabrotica of the U.S. and recent studies on diapause in D. barberi have been exciting. The new assignment will remind me there are insects beyond the genus Diabrotica.

Robert E. Lewis, Iowa State University of Science and Technology, Department of Entomology, Ames, Iowa 50011

Things have been relatively peaceful since our brief brush with the Wall Street Journal and the Tonight Show back in May and June of 1982, and the ensuing clamor from people all over the United States with flea problems.

When my colleague Frans Smit retired from the British Museum (Natural History) in May of 1980, Mike and I decided to continue a newsletter which he had started in 1973. It is called FLEA NEWS and mainly concerns itself with current literature and news of workers all over the world. It runs about 18-20 pages per issue and we put it out twice a year. Mike does the literature part of it as a labor of love (no pay) and I handle the reviews, etc. It is sent out to about 175 people and institutions in about 40 countries.

Between FLEA NEWS, 4 graduate students, my classes in Insect Systematics and Immature Insects, 2 computers (one at home and one in the office), 2 greenhouses containing about 500 orchid plants, a half dozen committees and boards of directors and my Shrine parade unit, I have kept pretty busy the last few years. At least it relieves me of reporting something you couldn't print.

Richard L. Lipsey, Vice President, R & D, Kenco Chem. Corp, 10 W. Adams, Jacksonville, Florida 32202

- Organized the International Consortium of Pesticide Consultants, 1983.
- Started Kenco Consultants, 1983, specializing in pesticide accidents, spills, poisonings for Orkin, law firms and chemical companies.
- Developed 8 new products for Kenco Chemical Corp.
- Raise quarter horses and go to too many 4-H horse shows
- Dabble in Florida real estate.

J. Byron Lovell, Senior Research Entomologist, Insecticide Discovery, American Cyanamid Company, Agricultural Research Division, P.O. Box 400, Princeton, NJ 08540

Helen Louise and I have lived in Pennington, NJ, since Cyanamid moved their Agricultural Research to Princeton in 1961. Our two children have finished college, married, and fortunately are living within half-hour's drive. Helen Louise is very busy in volunteer work in the community as well as working a few mornings during the week for a Pennington physician.

I am still researching new chemicals for insect control and responsible for coordinating our cooperative research programs for Insecticide Discovery on a global basis. A few years ago, I was happy to have discovered AMDRO fire ant insecticide, MAXFORCE and COMBAT cockroach control systems which are now commercial products. My current research is in a novel area of chemistry which has a great potential to generate new insect control agents.

William H. Luckmann, State Natural History Survey Division, 172 Natural Resources Building, 607 E. Peabody Dr., Champaign, IL 61820

I plan to retire on August 31, 1984, as Head, Section of Economic Entomology, Illinois Natural History Survey; Head, Office of Agricultural Entomology, College of Agriculture; and Professor, Department of Entomology, School of Life Sciences, University of Illinois. I arrived on campus in June, 1949, and I can truthfully say that I have enjoyed all 35 years working in entomology in Illinois. It has been a very rewarding career. I am going to miss the friends and contacts I have in Illinois and other states. I plan to accept occasional short-term work assignments following retirement.

June and I like the out-of-doors and we have done considerable canoeing and camping in the midwest and in Canada. I am certain this will continue. Four of our 5 children are married and we have 10 grandchildren. My wife and I are in good health and we are looking forward to more leisure time.

Chris T. Maier, The Connecticut Agricultural Experiment Station, 123 Huntington Street, Box 1106, New Haven, Connecticut 06504

Much has changed since I last wrote a few lines in the newsletter. My wife, Marie, and I reside in North Guilford, Connecticut. Both of us work at the Connecticut Agricultural Experiment Station. Marie is employed by the Department of Plant Pathology, and I am employed by the Department of Entomology.

My research at the Station focuses on the applied ecology of pests of fruit trees and ornamental shrubs. Presently, I am investigating the phenology, development, distribution, natural enemies, and economic impact of two gracillariid leafminers that attack apple leaves. I have also completed studies in the biology of periodical cicadas, the parasitoids of apple maggot flies, and the reproductive success of two weevils. My favorite insects, the syrphid flies, have been neglected somewhat, but not

forgotten. I am now conducting a long-term study on the mating behavior of several mimetic species that defend territories near rotting logs in swamps. Along with entomologists from Yale University, the University of Connecticut, the U.S. Forest Service, and elsewhere, I help to assess the status of rare and endangered species that live in scarce habitats. These activities and others will keep me on the go tomorrow and for many years to come.

Ralph B. March, Department of Entomology, Division of Toxicology and Physiology, University of California, Riverside, CA 92521

As you may know, I retired as Department chairman last June (1983) and became an Emeritus Professor in September. So far it seems like the best of all worlds. I have remained active on a few graduate student research committees and both campus and University administrative committees. Currently, I have just started as a member of the management team negotiating the collective bargaining agreement with non-Senate instructional staff members. My retirement research plans are slowly falling into place with a rather major change of emphasis to working on instrumentational aspects of our biochemical systematics program including computer-instrument interfacing.

Robin and I also have rather extensive travel plans in the making. In September, we'll be spending our normal fly fishing vacation in Montana. I caught and released my personal record last year on the Big Horn - a 4 7/8 lb 23 inch rainbow. Then we are thinking about colonial Virginia in the spring and perhaps either fly fishing in New Zealand, China with a friend who has taught oriental history, or a month in the Alps later.

As you can see, retirement seems great so far with no difficulty in mixing a variety of activities--professional, educational and just fun.

Jose A. Mari Mutt, Entomology Research Laboratory, Department of Biology, University of Puerto Rico at Mayaguez, Faculty of Arts and Sciences, Mayaguez, P.R. 00708

Not much has changed in the past three years, I am still at the Entomology Research Laboratory of the Department of Biology. For a couple of years I have been associate professor and was given tenure last year.

I still work with Collembola. Early this year my paper number 40 was published and some eight are in press. One graduate student has finished her MS thesis under my guidance, and I have two others working on their theses right now.

John C. Marlin, Pollution Control Board, 104 W. University, Urbana, IL 61801

After graduation I continued working for conservation organizations on river preservation and transportation issues. In late 1983 I was appointed to the Illinois Pollution Control Board, which is a state regulatory and quasijudicial agency dealing with pollution regulations, cases against persons and companies accused of violating pollution regulations, and a

variety of other matters. The job is full time and will last until summer of 1986 unless I am reappointed.

Diane is working part time as a nutritionist and plans to teach at Parkland in the fall. We have a daughter named Katherine who was born in November. We spend a lot of time working on our old house on Nevada street

and trying to keep our many brothers and sisters out of trouble with the local and University powers that be.

John W. Matteson, 270-2N-03, 3M Center, St. Paul, MN 55144

Came to 3M in 1967 to initiate an insect control program. After about 6 years the personnel from this program were transferred to research and development of herbicides and plant growth regulators where help was needed for some interesting chemical leads.

After 10 years of herbicide and PGR R & D, I am pleased to report that I will soon again function as an entomologist. The new position is with the Animal Care products Project of the Medical Products Division/3M and involves R & D of insecticides and repellents for use on animals.

Anna-marie and I have two boys and a girl who have managed to be in college concurrently. At least one will graduate this spring. Two of the three are statistics majors. This should give new meaning to the term heredity.

Mark A. Mayse, California State University, School of Agriculture & Home Economics, Department of Plant Science & Mechanized Agriculture, Fresno, CA 93700

In July 1981 I presented a talk at an Agricultural Ecology Workshop on the campus of UC, Berkeley. Of vastly greater significance than the workshop itself was my remarkably fortuitous introduction to the lady who was to become my wife.

We spend almost two years together in Arkansas (U of A, Fayetteville), enjoying the natural beauty of the Ozarks, but seriously looking for long-term career opportunities in the Golden State of California. Last summer our efforts were finally rewarded, and I accepted a position as Associate Professor in the department of Plant Science at California State University, Fresno.

My first year at CSUF has been a tremendous experience. Teaching responsibilities involve the field of integrated pest management, but include beekeeping and even plant nematology. Research activities focus on studies of applied insect ecology in grapes, alfalfa, and almonds. Ann enjoys her exciting role as manager of California's first indoor certified public farmers' market, located in downtown Fresno.

The year-round supply of fresh fruits and vegetables makes life in the San Joaquin Valley especially enjoyable. We're within 90 minutes of three national parks (Yosemite, Sequoia, Kings Canyon), and less than 4 hours

from San Francisco, Big Sur, and Los Angeles. Yet agriculture, a $16 billion per year industry in California, is truly the heart of this unique area. We feel extremely fortunate to be where we are today, and we sincerely invite friends and acquaintances to come see us in Fresno.

J. Frank McAlpine, Biosystematics Research Institute, Agriculture Canada, Ottawa, Ontario, K1A 0C6

I'm still busily engaged on the taxonomy and classification of flies at the Biosystematics Research Institute, Agriculture Canada, Ottawa, but I am planning to retire after 35 years service about this time next year. I expect to continue my research as a Research Associate though.

The biggest and most satisfying accomplishment in the last three years was the completion of Vol. I of the manual of Nearctic Diptera which appeared in 1981. I am a contributor and general scientific editor of that work, and of course was delighted to see it in print and to find it was so well received. It was judged the best technical publication in Canada that year and also won a merit award at the International Competition in Boston. I am just now finishing up the second and final volume, and hope it is equally successful.

I received a severe shock to my body and spirit on Dec. 7 last--a quadruple coronary artery bypass. Thanks to my guardian angels' foresight, and a great group of doctors, I'm still around and making an excellent recovery.

My good wife Naomi is well and enjoying life. Three of our family are married and have produced four grandchildren, with more on the way. Our youngest boy is attending high school here and the second youngest is completing his second year at the University of Toronto's Faculty of Forestry. So, all things considered, life has been good to us.

H. Elliott McClure, 69 E. Loop Dr., Camarillo, Calif. 93010

It is unwise to ask a guy like me what he has been doing; he might tell you! As usual, there have been Board Meetings of Defenders of Wildlife to attend, usually in Washington, D.C. I manage to attend both meetings most years, but missed the spring meeting in 1983 due to being in Thailand at the time.

The year 1982 saw an unusual amount of travel, much of it accompanied by my wife Lucy. In June the Iowa Cooperative Wildlife Unit of Iowa State University had its 50th Anniversary, and I was one of 10 early participants in the unit to be honored. Then shortly thereafter, I spoke before the Fish and Wildlife Service hearing on 1982 game harvest regulations for upland migratory birds. I'm afraid it didn't do much good. Then in the fall, Lucy accompanied me to Tucson for the fall meeting of the Defenders of Wildlife.

There was just as much activity in 1983. The big event of the year was our 50th Wedding Anniversary, the big day being October first. Announcements were sent to over 225 friends and relatives, and 160

replied, filling two large albums. Earlier in the year, there was the Jean Delacour Symposium on breeding birds in captivity, in Los Angeles, a great success. And there was also a tour of the rain forests of Southeast Asia that I led for the Extension Service of UCLA, and a number of courses in bird appreciation that I have given. As you can judge, to accomplish all of these things and more, the McClures have remained in good health.

Mark S. McClure, The Connecticut Agricultural Experiment Station, 123 Huntington Street, Box 1106, New Haven, CT 06504

Since my departure from Illinois in 1975 I have been investigating the ecology and control of exotic scale insect pests at The Connecticut Agricultural Experiment Station. The red pine scale, Matsucoccus resinosae, and two hemlock scales, Fiorinia externa and Nuculaspis tsugae, all native to Japan are destructive pests of Pinus resinosa and Tsuga canadensis in the northeastern United States. My research has determined the effects of climate, host plant quality, competition, natural enemies and pesticides on the dynamics of scale populations.

In 1982 I visited the People's Republic of China as a member of the USDA Pest Management Delegation to study Matsucoccus matsumurae (probably the same as M. resinosae) which has been destroying Chinese pines since its introduction from Japan 40 years ago. In April of this year I will be taking a six-month sabbatical leave to Japan to study factors that regulate endemic populations of these scales and to search for biological control agents with potential for introduction into the United States. My wife Laura and our two sons, Jason (4 years) and Evan (8 months) will accompany me on this adventure.

J. E. McFarlane, Department of Entomology, Macdonald College of McGill University, 21111 Lakeshore Road, Ste. Anne de Bellevue, P.Q. Canada H9X 1CO

My first contribution in 29 years must mention that I am married, with three children, one of whom is a chemist, another a physiologist, and the third is still in school. I continue to do what all academics do: teach, sit on committees and try to find time to do research. Having worked largely on the physiology of the house cricket, I am now beginning to admit that other species of insects not only exist but are interesting as well - namely a variety of cockroaches and caterpillars.

T.J. Miller, Department of Entomology, Division of Toxicology and Physiology, Riverside, California 92521

I shepherded the Springer Series in Experimental Entomology through another several volumes: Functional Neuroanatomy, edited by N.J. Strusfeld; Measurement of Ion Transport and Metabolic Rates in Insects, edited by Tim Bradley and myself; and several others in press or being gathered.

I contributed a Circulation chapter and a Pharmacology chapter to the 13 volume Kerkut and Gilbert Treatise on Insect Physiology, Biochemistry and Pharmacology.

I have just submitted a major review on mode of action of pyrethroid insecticides to J.P. Leahey in England for a book on pyrethroid insecticides.

I spent a short sabbatical leave in Australia (November 1983-March 1984) consulting with the Australia Cotton Growers Research Association throughout New South Wales and Queensland about resistance to pyrethroid insecticides.

I was asked to join a U.S. Standing Committee on Neuroscience.

I organized a symposium for the 1984 Entomology Congress and was pleased to see Illinois colleagues at the Congress.

Thomas E. Moore, Museum of Zoology, Insect Division, The University of Michigan, Ann Arbor, MI 48109

I am still chasing cicadas and sound-production, changing a bit into interests on mechanisms of sound-production and hearing, and neural and muscle interactions. We just got new equipment for our Sound Lab. through an NSF grant, and I have been working increasingly with high speed (up to 5000 frames per second) cinematography and television on timbal action. In addition, I have gotten well underway with a nuclear DNA vs. mitochondrial DNA analysis of populations of 17-year and 13-year cicadas, having sampled adults and nymphs of three broods and outgroups in four species representing two other genera of cicadas. Both of our daughters are married; Debbie is an occupational therapist in New York City and Mindy is a firefighter for the City of Ann Arbor, Michigan, and manages our thoroughbred horse farm. Eleanore teaches third grade in the Ann Arbor public schools; we all shovel manure. When I have spare time I like to sail. I'm looking forward to spending some time again this fall in Franz Huber's Max-Planck-Institut near Munich, West Germany, on joint projects on cicadas. Next summer Franz plans to be in residence during the cicada season here in Michigan again.

Bob Morden, Department of Biology, University of Wisconsin-Superior, Superior, WI 54880

Hello To All From The Great Northwoods!

It is hard to believe that thirteen years have slipped by since attending the hallowed halls of Morrill Hall. There have been some changes in our life styles since then. Annette and I, who will be celebrating our twenty second wedding anniversary this year, are both teaching at the University of Wisconsin-Superior. Annette teaches mathematics and I am an associate professor in our Medical Technology program and am responsible for seven health courses in this area. I also have a 30% clinical faculty appointment with St. Luke's Hospital, Duluth, Minnesota. In addition I teach pathophysiology in our Nursing program. In 1978 I became both a

black belt in karate and a certified medical technologist and have been teaching in both areas since the. There are no health problems in the karate school and no discipline problems in our Med Tech program. Annette and I have three children, Kris 17, Shauna 13 and Dan 10.

Moufied A. Moussa, Insects Affecting Man Research Lab., P.O. Box 14565, Gainesville, FL 32604

The year 1983 was one of significant transitions in my private life and career. I was divorced and have since married Joan C. Fellinghaus. In August 83, we moved to Gainesville, Florida out of Washington, D.C. where I was the medical entomology consultant to the Army Surgeon General for almost six years.

At present, I serve the staff of the Armed Forces Pest Management Board as the Department of Defense Research Liaison Officer to the USDA. My office is at the Insects Affecting Man & Animals Research Laboratory here in Gainesville where I coordinate research projects conducted by USDA scientists on behalf of the Department of Defense.

This is not totally a desk job! I maintain a continuing dialogue with USDA and other scientists all over. I participate in field research and will soon go to Panama to evaluate repellents against malaria vectors in the jungles of central America.

Three more years remain in this tour of duty at Gainesville. The next move should be my last- while on active duty with the Army. Retirement is due in six years. Where to? That will depend on challenges that may become available then.... or sooner if the location and price is right!

Franklin C. Nelson, 22 St. David Drive, HCB, Toms River, NJ 08757

Time slips by so fast that it is hard to keep up on what goes on. We flew out to Brea, CA to visit our friends the Hutsons, formerly State Entomologist in Michigan. Our time has been spent in NJ and Florida about 6 months each. We are now moving back to NJ as home base as we have sold our Condo Apt. here. Two places were getting to be too much work and expense. We will rent if we come back another winter.

Our second oldest granddaughter is about to give us a new great grandson. We look forward to that event. We will also celebrate our 60th wedding anniversary in June. Most of our spare time is spent watching the Stock Market, which keeps our minds very alert.

We will move to NJ the 23rd of April, so please change our address as shown. Franklin C. and Inez I. Nelson, 22 st. David Drive, HCB, Toms River, NJ 08757.

I will enjoy seeing a newsletter. It has been a long time since I studied under Dr. Metcalf, Dr. Hayes, Dr. Balduf and Dr. Parks.

David C. Newton, Connecticut State University, Biological Sciences, C.C.S.U. Copernicus Hall, Room 219, New Britain, CT 06050

I am currently the President of AAUP in the Connecticut State University, a system of about 1150 faculty on four campuses. As President I organize negotiations and enforcement of contract provisions as well as oversee the activities of our staff of three full-time employees. It is a position I would define as creating an environment where faculty can do their work more effectively. We use our contract as a vehicle to bring greater resources to the University than would otherwise be received. I am somewhat familiar with the national aspects of collective bargaining and look with interest on the situation in Illinois.

My teaching duties are somewhat reduced, but include teaching BASIC, Animal Behavior and a variety of introductory courses. I retain my research interest in hygienic behavior of honey bees.

I am pleased to report that my younger daughter, Gail, became a graduate student in Biochemistry at the University of Illinois this fall.

Herbert Nigg, Lake Alfred Arec, University of Florida, Lake Alfred, FL 33850

I was promoted to Professor this year. My duties in Florida include the assessment of Exposure of Agricultural Labor to Pesticides and the Environmental Behavior of Pesticides. I also head an EPA National Pesticide Hazard Assessment Project. It seems that I get busier as the years go by, much busier than I was as a graduate student.

Gerald L. Nordin, University of Kentucky, College of Agriculture, Department of Entomology, 2-225 Agricultural Science Bldg.-North (00916), Lexington, Kentucky 40546

As you probably know, I have been with the Department of Entomology at the University of Kentucky since 1971. I hold a research-teaching position here with research specialization in the area of insect pathology and microbial control of forest and agronomic insect pests. I teach an undergraduate course in Forest Entomology every fall and a graduate level course in Insect Pathology every other spring. I have become involved during the last few years in research on entomophthoran fungi affecting the alfalfa weevil. Some of our work on these fungi (here at Kentucky) caught the eye of the National Academy of Sciences which prompted an invitation to participate in a joint U.S. - China National Academy of Sciences Symposium on Biological Control of Insects in Beijing, China in 1982. In 1983 I was promoted to the rank of Professor of Entomology. Summer plans for 1984 include 1) field research on the role of parasitoids in the transmission of nuclear polyhedrosis viruses and the importance of horizontal transmission in epizootic development in the colonial pest, Hyphantria cunea, 2) travel to Charleston, S.C. to moderate a session on Microbial Control of Forest Insects at the Southern Forest Insect Work Conference, and 3) to squeeze in some vacation time traveling and working on a log cabin that I built on a 10-acre tract near Lexington. Also dabbling in apiculture and Christmas tree production in my spare time.

Robert J. Novak, Department of Health and Human Services, Public Health Service, San Juan Laboratories, Center for Infectious Diseases, CDC, G.P.O. Box 4532, San Juan, Puerto Rico 00936

I have been working as a Research Entomologist for the Centers for Disease Control for the past 5 years. I have been stationed at the San Juan Laboratories, Dengue Research Branch for 2 years. My work here is involved with the genetics of vector competence of Aedes aegypti to all four dengue serotypes as well as the ecology and control of Ae. aegypti. We have recently identified a potential new vector of dengue in Puerto Rico, Ae. mideovittatus and are actively studying its ecology and vector ability in relation to virus transmission and transovarial transmission.

My wife Loraine teaches English at San Ignasio school to Spanish speaking students and is active at our Church as well as being a board member at the Guaynabo, Puerto Rico Parent Participation Pre-school. We have two children, Lisa, who just turned 6 and Karen, who is 3. Lisa is starting 1st grade and is a computer fiend and Karen will start pre-school this year. Both are becoming bilingual.

Jim K. Olson, Texas A & M University, Department of Entomology, College Station, TX 77843

I am now a Full Professor within the Department of Entomology at Texas A & M University where I continue to teach graduate and undergraduate courses in medical entomology. My research activities are currently centered around study of the bionomics of riceland mosquitoes as it pertains to the development of more efficient and effective survey and control strategies for the mosquito populations occurring in Texas wetland agricultural systems. In 1979 I assumed the directorship of a 5-state, 6 university consortium research project which is dealing with the nationwide problems associated with mosquitoes arising from riceland systems and their solutions. This project is scheduled to continue at least through 1985.

Otherwise, I was honored by being elected President of the American Mosquito Control Association (AMCA) in 1983 and recently presided over the annual meeting of this association in Toronto, Ontario.

On a personal note, my daughters are no longer "children". Teresa (18) is a freshman at Stephen F. Austin State University, Nagodoches, TX and Kristine (16) is a sophomore at Bryan High School, Bryan, TX.

Gerard Paquet, 2742 Ville Marie Street, Ste. Foy, Quebec G1W 1Y3

In compliance with your request, I am pleased indeed to inform you that, since my retirement in 1978 as director of the Entomology and Pathology Service, Quebec Department of Energy and Resources, I am working on a part-time job as executive secretary of the Eastern Spruce Budworm Council.

Janis Petzel, P.O. Box 89, Brooktondale, NY 14817

My husband, Dave, and I are living in Brooktondale, NY, a small town outside of Ithaca. He's working as a post-doc in the Physiology Dept. at Cornell, and I was working as a lab technician in the Department of Vegetable Crops doing plant physiology experiments on potatoes (which was more interesting than it sounds) until our first child, Jill, was born on February 14 this year. She weighed 8 lbs on the nose when she was born, weighs 13+ lbs now and has red hair and blue eyes. We think she's gorgeous. So, my work is more in an applied field these days -- I apply the diapers and supply the milk. I've been trying to do some writing, but taking care of the baby is pretty much a full-time activity.

John E. Porter, 7521 SW 53rd Avenue, Miami, Florida 33143

I retired (more-or-less) from purely entomological activities when I retired from the Commissioned Corps of the United States Public Health Service as a Scientist Director in March 1973 in Miami, Florida with 28 years of service. Immediately after that I worked for the National Sanitation Inspection Service and sold my interests after 6 years. Here I carried out sanitation consulting work on various cruise ships. This enabled me (and my wife Jackie, Class of '42) to see a lot of the world that we would otherwise not been privileged to see.

Peter W. Price, Northern Arizona University, Department of Biological Sciences, Flagstaff, AZ 86001

Peter Price and family has been in Flastaff, Arizona, for almost 5 years. He was first at the Museum of Northern Arizona for 1 year, and is now at Northern Arizona University in the Department of Biological Sciences. He teaches graduate courses in Advanced Entomology(= Insect Ecology), and Evolution, and undergraduate courses in Ecology, General Zoology and General Biology, Not all at once. Research is on local willows, gall-forming sawflies on these plants, and their enemies which are mainly parasitoids and inquilines. We are interested in within and between plant variation and how it influences the herbivores and their enemies. Six graduate students study various aspects of this system including the basic ecology of the willows, their chemical variation, resource regulation by sawflies, and sawfly population dynamics.

The second edition of Insect Ecology will be published in May 1984 by Wiley, with at least 30% new material in the revision. Please buy a copy! I now have a long-range plan to write a general ecology textbook. So any relevant reprints will be welcome.

We enjoy living in Flagstaff very much but really miss the alpenglow on the overpasses in Champaign County.

Garland T. Riegel, Eastern Illinois University, Department of Environmental Biology, Charleston, IL 61920

I retired at the end of May, 1978, after teaching entomology for 30 years at EIU. For 13 of those years I was head of the Zoology Department

with a staff of about 24 during the boom years. Since retirement I've continued to publish and attend meetings. In 1976 Ruth and I spent a sabbatical in Japan, and I attended the Ent. Congress there in 1980 and gave a paper. In 1979 I traveled in mainland China. My hobbies, besides travel, are gardening -- of a sort -- and collecting insects on stamps. This year I'm slated to become president of the Biology Unit of the American Topical Association.

P. W. Riegert, University of Regina, Department of Biology, Regina, Canada S4S OA2

What have I been doing that may be of interest to others? I published a book: FROM ARSENIC TO DDT, a history of entomology in western Canada covering the period up to 1940. It's still available from the University of Toronto Press. I am currently working on Volume II, which will (I hope) complete the history up to 1980. I had to confine my work to western Canada because a history of entomology in all of Canada was too big a job to be handled effectively in one dissertation.

The joint sessions of the E.S.C. - E.S.A. meeting in Toronto in 1982 was indeed a golden opportunity to get re-acquainted with many Illini. In 1983 I was General Chairman of the E.S.C. meetings in Regina, an organizational job that was both hectic and rewarding.

Paul O. Ritcher, 45 N. Los Olmos, Greenvalley, AZ 85614

I have been Professor Emeritus at Oregon State University since 1975, having retired from the department chairmanship in 1971.

During the first year of my retirement, I had work space in Fred Werner's Systematic Entomology section at the University of Arizona, in Tucson where I did research on Phyllophaga (Listrochelus) larvae. Recently, I made a topical collection of Ceryona insects for use in the Van Program of the Arizona-Sonora Desert Museum. My wife, June, is a docent.

Other than the above, I've exercised "Entomological Restraint" and devoted more time to my interests in collecting stamps, coins, tokens, paper money and postal stationery.

Selwyn S. Roback, Curator, Department of Entomology, The Academy of Natural Sciences, Philadelphia, PA 19103

In 1978 I took part in the Catherwood Bolivian-Peruvian altiplano expedition. This explored the streams around Lake Titicaca and the lake itself. Most of my time since then has been devoted to writing papers on the results of that trip and on other aspects of chironomid taxonomy. This includes a couple of papers on Australian chironomids. Two years ago the Academy finally recognized that I am a taxonomist and moved me into the Entomology Department in the Systematics section of the Academy.

On a more personal note, our children (Craig and Barbara) have grown up and left the nest. Helen and I are enjoying the peace and quiet. Helen

has been doing horticultural consulting and landscaping but is planning to retire after this year.

P. Elaine Shepherd Roberts, Colorado State University, Department of Zoology and Entomology, Fort Collins, CO 80523

I joined the faculty of the Department of Zoology and Entomology at Colorado State University in the fall of 1979 and will be an Entomologist when the department splits this summer. Even to my surprise, I have evolved into the resident Insect Physiologist, although my teaching duties still include Cell Biology. My research is focused on the mechanism of action of juvenile hormone during vitellogenesis in the two-striped grasshopper, Melanoplus bivittatus. (I can identify four species of grasshopper now.) With the assistance of an NIH grant, two grad students, and a research associate, the analysis of JH binding proteins is progressing at a good pace. I have enjoyed exploring the slickrock canyon, mountain, and alpine ecosystems since my arrival in the West. The squirrel and mouse are well.

A.G. Scarbrough, Towson State University, Department of Biological Sciences, Towson, MD

My duties have not changed a great deal since I arrived at Towson, although the school has changed considerably in the last 14 years. It boasts an enrollment of some 14,000 students now. As you are probably aware, my teaching responsibilities include courses in general entomology, and invertebrate zoology for undergraduates and aquatic biology for graduate students. In addition I direct graduate students in their thesis research in our masters program.

My research has taken a left-turn in recent years away from insect behavior and ecology into the area of taxonomy of Diptera, especially neotropical asilids (Ommatius Wiedemann) and, to a lesser degree, bombyliids (Geron Meigen). My research has taken me to Mexico, the Bahama Islands, Virgin Islands and Puerto Rico. In fact, I just returned from a trip to Puerto Rico where I did some collecting and attended a meeting. I hope to complete the revision on the Caribbean faunas this summer and to begin the Mexican and Mesoamerican faunas next.

George K. Schumaker, 279 Bay Ave., Glen Ridge, NJ 97028

After retirement from S.B. Penick Co., subsidiary of GPG Intl., as Commercial Development Mgr., I no longer had any occasion to contact the universities throughout the United States and Canada.

My last activities in entomology were directed toward the introduction and commercial development of resmethrin, the first synthetic pyrethroid approved for use in this country and Canada and manufactured for commercial distribution by insecticide formulators, under their trade names. Today, resmethrin continues to be regarded to be the safest insecticide developed in recent years.

Most recently, I have been disposing of my entomological library, and participating in community affairs, as well as activities in several conservation associations. For sheer pleasure we continue to build our collection of classical and big band jazz records, and participate socially in both these areas of activities.

Thomas G. Shanower, Plant Protection Project, P.O. Box 881, Nuku'alofa, Kingdom of Tonga, South Pacific

I got my masters degree from the University of Illinois in January 1982. In February I joined the Peace Crops. I was assigned to the Ministry of Agriculture in the Kingdom of Tonga in the South Pacific as a research officer at the Government Experiment Station working on several projects on various crops important to Tongan agriculture. In July 1983 I began my present job as an entomologist for the Tongan -German Plant Protection Project, an aid project financed by the West German Government. The principal work I have been involved in is the biological control of the coconut spike moth (Tirathaba rufivena).

Joseph K. Sheldon, Eastern College, St. Davids, PA 19087

I have now finished by 13th year at Eastern College, St. Davids, PA. It hardly seems like that many years have passed since the good times I shared at Urbana. Life is treating the Sheldon family well. I am Chairman of a very fine 5-person Biology Department and am enjoying my teaching responsibilities greatly. There still remains some time for research, but I have come to realize that my greatest contribution can be made through investing my time in the lives of students, and not in major research programs.

My involvement in entomology is not as great as I would like, but that is par for the course when one commits oneself to a small college. I continue to teach a general course in entomology and also am serving as Vice President of the American Entomological Society.

My wife and I think of our friends there often and of the precious gift of education that you were able to share with us.

P. Sivasubramanian, University of New Brunswick, Department of Biology, Bag Service Number 4511, Fredericton, N.B., Canada E3B 6E1

I have been very active academically during the last three years. I took my sabbatical in 1981 and had a very exciting time at the European Molecular Biology Laboratories, Heidelberg, West Germany, learning a lot of axon tracing techniques. Since then, I have been using these methods in my primary research area, namely Developmental Neurobiology of Insects. Using the fleshfly, Sarcophaga bullata as a tool I am trying to find answers to the following three questions.

1. What is the role of the periphery in the survival and differentiation of central neurons.
2. How do axons find their projection sites during development?

3. What controls their specific connectivity?

Careerwise, I am a full professor since 1983, teaching Developmental Biology of animals.

On the homefront, life has been very peaceful. I have three boys. Velu, 16, goes to high school. Kumar, 10 is in grade 4 and Ilango, 7, is in grade 1. My wife Meena is a full time home maker. During the summer we visit friends and places. We make frequent visits to India too. Eastern Canada, including Fredericton where we live, is a lovely place for camping, fishing and hiking in summers and a skiing paradise in winters. I take this opportunity to extend our heartfelt invitation to everyone in the Entomology department to visit us, stay with us and enjoy our PICTURE PROVINCE.

Robert Snetsinger, Pennsylvania State University, College of Agriculture, Department of Entomology, 106 Patterson Building, University Park, PN 16802

During 1983, I was on sabbatical leave in Puerto Rico at the University of Puerto Rico, Mayaguez. There I worked on a bilingual training manual for structural pest control operators and studied Puerto Rican termite problems. Brief trips were made to the Dominican Republic, Haiti and Mexico to collect insects and to observe tropical agricultural problems. In November my The Ratcatcher's Child, a historical account of the structural pest control industry, Franzok and Foster Company, Cleveland, 294 pp. was published. My work with associates continues on mushroom IPM. One of the lectures I gave in Puerto Rico was entitled "There is a Phorid in Your Future". This talk was based on recent research I have been conducting on mausoleum pests. A grant allowed me to travel and visit cemeteries and mausoleums across the U.S. It is apparent that reincarnation is inevitable as the phorid, Megaselia scalaris.

Keith R. Solomon, University of Guelph, Ontario Agricultural College, Department of Environmental Biology, Guelph, Ontario, Canada, N1G 2W1

Having attended the last two ESA meetings I have seen some of the old Illini. We are still at the Department of Environmental Biology, University of Guelph and have made our home here. Research interests include environmental toxicology of pesticides and insecticide resistance, while my academic interests include teaching in these areas as well as administration of the undergraduate toxicology major. Our children continue to grow like Illinois corn and they, and father, have become active in swimming.

Bruce Stanley, New York State Agricultural Experiment Station, Department of Entomology, Barton Laboratory, Geneva, NY 14456

I am currently pursuing my PhD in Entomology at Cornell University. I have maintained my interests in mathematical modeling applications in pest management, and I hope to graduate in December. I've spent most of my time in the East since I left the Department in 1980. In April 1981 I accepted a job as a biological systems analyst for the "Consortium for Integrated

Pest Management" project at the New York State Agricultural Experiment Station in Geneva, New York. I began my graduate study at Cornell in January 1983, and I married Diane Mague Stanley in April 1983. It was certainly a busy first semester! Diane received her PhD in Entomology from Cornell, and she is currently working in DuPont's AgChemicals Division. Life has gone well for me since I left Urbana, and I look forward to seeing everyone at the ESA meetings.

Shirley S. Statler, Box 82, Westchester, IA 52359

I retired from teaching three years ago. Still living in Westchester and finding plenty to do. Daughters, grandchildren and wife all fine.

John N. Thompson, Washington State University, Department of Zoology, Pullman, WA 99164

I've spent this afternoon mating butterflies (genetics of oviposition preference in swallowtails). It's the peak of my field season and I'm oscillating between these hybridization experiments and field work on oviposition in a braconid wasp (undescribed, of course) and its incurvariid moth host. These insects are all associated with umbellifers, and I'm continuing to sort out the variety of ways in which interactions evolve between insects and these plants. Much of the work keeps me near the Wenaha-Tucannon Wilderness in southeastern Washington, a wonderful place where the bear and elk are still big.

The past couple of years have also involved a fair bit of travel to places farther away. The most exciting trip (excluding, of course, my visit to Champaign-Urbana a year or so ago) was one to Denmark and Sweden late last summer and early fall, where I attended the meeting on insect-plant interactions in Lund, Sweden, visited entomologists at several universities, and hiked in some nature reserves in both countries.

Mike and Peg Toliver, 500 E. James, Eureka, IL 61530

Most of the news about us has to do with Peg, so I'll save that for last. As for me, I am teaching at Eureka College, a small liberal arts college near Peoria. Eureka operates on a term system, with 4 8-week terms constituting the academic year. It's very much like teaching summer school the year around. I teach 5 courses every year (Botany, Zoology, Animal Behavior, Ecology, General Biology) with repeats of the General Biology course. So, during the academic year I manage to stay extremely busy. I do enjoy it very much, especially the liberal arts atmosphere. There is only one other biologist here, so I've been forced to make friends with philosophers, artists and theologians. One consequence of this is that I've become active in "the peace movement", and am currently heading a group called Eureka Peace Issues Council (E.P.I.C. for short). We staged a prayer vigil when President Reagan came here in February (an interesting experience, believe me!) and participated in Ground Zero's pairing project, sending a community portrait of Eureka to the people of Elan, U.S.S.R. expressing our desire for peace. We hope to get the director of the Peace Corps here next year, and have several educational activities planned as well. Professionally, I am still playing with butterflies. I've started a

rearing program, in the hopes of raising and describing as many species of butterflies (particularly from Illinois) as I can. I am still working on the systematics of New Mexican butterflies. My collection will soon reside in the Illinois Natural History Survey. Anyway, I have many plans for my research with Lepidoptera, if only I had the time.

The big news about Peg is that she will be back at the good old U. of I. this fall. She is starting in a Master's program in art history, with a quarter-time assistantship. She graduated with honors from Eureka this last spring. While at Eureka, she reaped many honors, both for her art work and for her work on the student newspaper. She served as assistant curator for the campus art collection, which includes some very valuable pieces. Because of her interests, we've made several trips to the Art Institute in Chicago, the National Gallery of Art (with Art Weis and Audrey Kaulinski) and the St. Louis Art museum. Before she graduated from Eureka (with a major in art and a minor in philosophy), she had a show of her work, along with 3 other graduating seniors. The show was very favorably received. After completing her Masters, she will then have to decide if she wants to go on for her Ph.D. (possibly at the University of Chicago) or come back here and see what she can do in this vicinity. In any case, for the next couple of years we will be regular features on the U. of I. campus.

Robert Traub, University of Maryland, School of Medicine, 660 W. Redwood Street, Baltimore, MD 21201

In the Spring of 1983 I asked for, and received, early retirement so that I could devote full time to research on fleas and related subjects. This change has worked out very well in that formerly I had four times as much work to do as anyone could possibly accomplish, and now, in my new capacity of Research Professor, I only have twice as much.

Research projects continue on the systematics, ecology, evolution and zoogeography of fleas (and some of their hosts), and on pertinent infections, especially murine typhus. Lately I have been spending too much time on the ecology of the Korean Hemorrhagic Fever group of viruses. If you ask what this has to do with fleas, the answer goes back to Korea and 1952, when, on the basis of the affinities of the fleas and hosts in endemic areas and the observed epidemiological features of the disease, I postulated that the KHF group of viruses was intimately associated with microtine voles. This turned out to be the case in Scandinavia, China and elsewhere, and a couple of years ago we collected vole sera from Alaska for testing in D.C. Gajdusek's lab at the N.I.H. in Bethesda, Md. The sera was serologically positive for this complex of viruses, and the same was true for microtines from California, etc. A virus in this group was isolated from Microtus here in Maryland and is called Prospect Hill Virus, but its relationship to disease is unknown.

As Honorary Curator of Siphonaptera at the Smithsonian Institution (U.S. National Museum), I also maintain an office in the Museum of Natural History in downtown Washington, D.C. It would be a pleasure to meet alumni visiting the National Collections or the Museum.

Donald M. Tuttle, University of Arizona, Yuma Valley Agricultural Center, 6425 W. 8th St., Uma, Arizona, 85364

I retired from the University of Arizona on September 30, 1983 after nearly 32 years at the Yuma Experiment Station. I was engaged in the biology and control of insects and mites associated with agricultural crops, especially alfalfa, bermuda grass, citrus, cotton, lettuce and melons. Since 1954 I have collected, studied and co-authored several publications with E. W. Baker (USDA, Beltsville) on the systematics of Tetranychoidea mites. I maintain my office on a volunteer basis and am continuing research in the area of plant mites (taxonomy). Last year I attended the International Congress of Acarology in Scotland and will continue to attend various meetings.

Ray Voorhees, Central Missouri State University, Biology Department, Warrensburg, MO 64093

Although I have maintained only the most tenuous connections with the Department of Entomology, it always pleases me to hear from anyone in Morrill Hall. In the last three years, I have learned to cope with paper and frustration as Head of the department of Biology at CMSU. We have been able to bring in some good young faculty which I consider to be the center piece of my administration so far. Among them are Dr. Steven Wilson, who specialized in planthopper taxonomy, especially of immatures. His Ph.D. is from S.I.U. '80. Some of you probably know him.

I and several colleagues have also been busy beating down the many-headed hydra of Creationism in rural Missouri. I have given quite a few presentations which receive at least attention, if not acceptance.

Steven W. Wagner, FMC Corporation, Agricultural Chemical Group, 3921 Sandlewood, Okemos, Michigan 48864

After spending 1980 & '81 as a research assistant with Dr. Brian Croft of MSU working on fruit pests, I took a job with FMC AgChem as a sales rep. I enjoy my job in applied agriculture, and plan to be in the area for the next few years in this capacity.

Dianne and I are expecting our first F_1 in early October.

Gilbert P. Waldbauer, University of Illinois, 320 Morrill Hall, 505 S. Goodwin, Urbana, IL 61801

The past three year have been exciting from a professional point of view. The project on Batesian mimicry is now supported by a grant from NSF. Jim Sternburg is the co-investigator. I've spent the last two summers at the University of Michigan Biological Station in northern Michigan working on two aspects of the project: 1) the phenological relationships between stinging Hymenoptera, their mimics, and insectivorous birds, and 2) an appraisal of mimetic advantage in the absence of the model, using the technique of releasing and recapturing painted male promethea moths. The results are exciting, and I am now in the midst of writing the first major paper to result from this work. In December and January of

1981 Stephanie and I were in Paris where I spoke on the painted promethea technique at a colloquium at the Museum National d'HIstoire Naturelle. Stan Friedman and I now have a joint USDA grant that supports work on the self-selection of an optimum nutrient mix by larvae of the corn earworm. Randy Cohen is an R.A. on this project and is pursuing a segment of the research as his Ph.D. dissertation work. The results from this project are also exciting, and the first major paper dealing with them was recently submitted for publication.

Bill Walker, 1335 Birmingham St., Halifax, Nova Scotia, Canada B3H 4H7

The last 3 years, I have devoted to the single-minded purpose of determining the structure of 5s ribosomal RNA's from a variety of fungi and marine invertebrates. I hope these will make a significant contribution to phylogenetics and basic principles of molecular evolution. Perhaps, I will eventually get around to investigating insects or at least arthropods from this perspective. Hope to spend a few weeks in Ecuador getting reacquainted with the birds, plants, people and, yes, insects of the neotropics. I miss all those things here on the shore of Nova Scotia.

Barbara T. Walton, Environmental Sciences Division, Oak Ridge National Laboratory, P.O. Box X, Oak Ridge, TN 37831

Since graduating from the Department (1978), I have been employed as an environmental toxicologist with Oak Ridge National Laboratory in Tennessee. The first project I worked on dealt with ecotoxicological problems that could result from the production of coal liquids for fuel. The work was exciting and led to the finding that exposure of cricket eggs to trace amounts of an unknown chemical could cause supernumerary eyes, antennae, and heads in emergent nymphs. Subsequently, we found the active teratogen to be benz(g)isoquinoline-5,10-dione. More recently, I have been investigating the influence of soil invertebrates on the bioavailability of technetium, a radioactive fission product with a half life of ca. 200,000 years and the propensity to resist disposal.

Part time off from research last fall gave me the time needed to teach a course in "ecotoxicology" at the University of Tennessee. As an adjunct faculty member, I also advise students. The ESA and the Society of Environmental Toxicology and Chemistry (SETAC) have provided primary outlets for my work as well as an opportunity to learn more about professional society operation as the program chair for the 1983 annual meeting of SETAC and as a member of the Board of Directors. Travel highlights have included participation in the International Congress of Pesticide Chemistry, Kyoto, Japan, and working for several weeks at Cornell University and the University of Washington, Seattle. The latter trip was made possible to me as the recipient of the 1981 Scientific Achievement Award from the Environmental Sciences Division here at the National Laboratory.

My leisure time seems to be consumed hiking up and down fairways (remember this is Tennessee, not Illinois) in search of an all-too-elusive golf ball. Oh well, at least the insect fauna is more interesting in the rough!

Don Webb, Illinois Natural History Survey, 172 Natural Resources Building, 607 E. Peabody, Champaign, IL 61820

I am still working at the Illinois Natural History Survey, having been promoted to full taxonomist in 1982. I spent the last three years revising the 21 genera of lower brachycerous flies covered in my thesis. I expect to complete the remaining revision of these genera this fall and then to reanalyze the phylogeny development in my thesis before having it published. My future interests lie in the systematics of the lower brachycerous flies of the Neotropics.

Art Weis, Department of Biology, Bucknell University, Lewisburg, Pennsylvania 17837

Hello to all my friends from the Entomology Department. Since I got my degree in 1981, I've been doing post-doctoral research at Bucknell University, in Lewisburg, Pennsylvania. I'm working on population genetic aspects of the evolution of goldenrod and its tephritid gallmaker. I've also taken up fly-fishing and have spent many evenings standing in the middle of mountain streams in pursuit of the elusive trout.

In the fall Audrey and I will be moving from the land of mountains, back to the land of molehills when I start as Assistant Professor in the biology department at Northern Illinois University. There I will be teaching ecology and Invertebrate Zoology, and continuing research on the evolution of plant-insect interactions.

Margaret Windsor, 220 Santa Rita, Palo Alto, CA 94301

My professional life was that of catalog librarian at Stanford University, so my science interests were subordinate to the library work. Having been retired from Stanford Library since 1972 my activities at 220 Santa Rita have been oriented to daily living and a few special interests.

Because my housemate had lived in the area a long time we had worked over a lot of her great uncle's material and her own family records. We wrote up accounts of her early life in Mountain View, a record of her childhood home, and an account of her brother's life. Her work on the Emersons in Mountain View is incomplete due to her recent death.

In line with all this activity we have been members of the Mountain View Pioneer and Historical Association, and I've been secretary for 82/84.

In 1981 the Medfly problem affected us directly. We had to strip our English walnut tree of its nuts. (Of course we annually have husk fly).

As a side interest I have been feeding the birds regularly, even hand-feeding peanuts to a scrub jay in 1982. As a result of feeding shelled raw peanuts, we found about 10 peanut plants in the garden area - the jays didn't remember all their hiding places and the squirrels didn't sniff them out. Not many peanuts formed but it was fun to see the yellow blooms.

So you see there hasn't been much exciting going on, and certainly very little tying in with entomology - except husk flies, aphids on roses, spittle bugs here and there, cutworms in whatever garden I may plant.

H.R. Wong, Canadian Forest Service, 5320-122 St., Edmonton Alberta, Canada T6H 3S6

Not much has changed since the last newsletter, except I have added a few pounds, lost some more hair and tooth. I am still studying sawflies and forest insects at the Northern Forest Research Centre, in Edmonton, Alberta. Still married to Margaret Yee, and our two oldest daughters have graduated from the University of Alberta. Although one has taken some entomological courses, she does not aspire to be an entomologist like her father.

Have seen some old friends who were at the University of Illinois when I was there, in Washington and Ottawa, and the occasional National Meeting.