# ANNUAL NEWSLETTER

DESTRUM

Department of Entomology

University of Illinois
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Hope did spring eternal and the Newsletter comes forth in what we hope will be a routine occurrence. Rather than admit the Newsletter comes late we will just say that March will be Newsletter month.

As the centennial year of the great University of Illinois draws to a close we again send our best wishes and take the opportunity in these few pages to share with you the activities of your entomology department. The cover this year is most significant in that we borrowed the official centennial emblem from the University which has just completed the celebration of 100 years of progress. We have taken pleasure in reviewing the old, looking at the present and we now look forward to a more productive future. We are sorry that we weren't able to bring to fruition a centennial celebration for the entomology department. A number of pit-falls befell this undertaking and we decided perhaps the best way to get together in the coming year might be an Illinois breakfast or dinner at the annual meetings of The Entomology Society.

As the ink is drying on the pages I cannot close this tome without thanking once again our faithful secretary, Ruth Plymire, whose willingness and cooperation make it possible to continue the Newsletter each year. Also a word of thanks to the students and fellow colleagues who share with you their activities of the past year. Until next year when we will be back in spite of ourselves, best wishes.

## MESSAGE FROM HEAD OF DEPARTMENT

It is a pleasure to greet you again through the medium of this Newsletter. Events of the past year have created periods of uncertainty for our department which is unlike any previous period of my over 30 years of experience here. At this time we find we cannot commit ourselves to support worthy graduate candidates due to the present inability of federal agencies to fund some of our training and research grants, all of which have been approved some months ago. We are also faced with the uncertainty of how many new and first year graduate students will actually be with us next year, in view of the present draft regulations. I'm sure these problems are not unique to our department but we derive little consolation from the fact that others may well be suffering from the same frustrations.

It is indeed a pleasure to inform you that Professor Robert L. Metcalf will become a permanent member of our staff beginning in September of this year. I'm sure there is no need for me to point to his many scientific accomplishments, or elaborate upon the benefits which we as a department will gain his joining us. We sincerely hope that we shall be able to provide him with a stimulating atmosphere and the appropriate facilities to enable him to continue his highly productive research and writing program.

As always I extend a sincere invitation for you to visit us. If you haven't been back in recent years I can assure you that you will find it interesting and rewarding to meet and talk with some of our new staff members.

Sincerely,

C.W. Kearns Head of Department

#### ACTIVITIES OF THE SCHOOL OF LIFE SCIENCES

As we consider the progress of the School of Life Sciences during this past year I think that it is fitting that we consider the 100th year anniversary of the founding of the University of Illinois. This celebration lasted from February 28, 1967, through March 11, 1968. The theme and the centennial colophon which is depicted on our cover was found on all the official literature of the University during this past year. The theme being "to draw from a distinguished past and create a promising future." During the past year there have been many activities at the University by way of important symposiums, concerts, major art exhibits, all vying for time on a busy university calendar.

In the School of Life Sciences the symposium that attracted the largest crowd of students and faculty was a two series program sponsored by the Zoology Department under the direction of Professor J.D. Kitzmiller. The first was a centennial symposium held in October, 1967, with the following participants: F.H.C. Crick, nobel laureate who spoke on vitalism and molecular biology; Sol Spiegelman from the University of Illinois who spoke on the synthesis of self duplicating molecules; R.C. Lowenten, University of Chicago, who spoke on the subject of evolution as a new world view; Marshall Nurenburg from the National Institutes of Health who spoke on genes and the future of man. Following the symposium were a series of talks and seminars in the areas of parasitology, ecology, embryology, and vertebrate zoology. These were a most stimulating series of seminars and symposia available to all of us in the School of Life Sciences.

As the centennial year comes to a close let us share with you some excerpts from a talk given by President David Dodds Henry of the University in his closing centennial address on March 11:

"With this convocation, we close the Centennial Year of the University of Illinois. Its theme has been, 'From a Distinguished Past, a Promising Future.'

Examination of the past has been reassuring. We have noted great achievements and they have stirred our pride as we identified the University with historical benchmarks - in science, technology, humanities, the arts and the professions. The agriculture, industry, business, government and social organization of the State and Nation have been influenced by what has been

discovered and encouraged at this University. People's lives have been enriched - through countless public services, from the outcomes of research, and from the contributions of the tens of thousands who have been formally enrolled.

We have, however, looked forward even more than we have looked back.

Aware that many now enrolled in the University will spend their most productive years in the 21st century, the centennial events have been designed for analysis of trends and potentialities in the long view.

Students, facilty, and alumni, in company with outstanding visiting commentators and observers, with artists, scholars, and public leaders have canvassed, among many subjects, science and the human condition; man and the multitude in the search for the values in our culture; the university in motion, a matrix for the arts; urban education and the study of urban affairs; changing concepts in all the major disciplines; business and social responsibility; world food needs; and education for the 21st century.

From the inspiration of this year, we are moved to carry on with increasing energy and spirit, in the great academic tradition, described on a similar occasion three years ago by President James A. Perkins of Cornell University: 'From the very beginning, the idea of the university has been nourished by and it has contributed to the great universal imperatives of the Western world: the respect for reason, the distaste for unexplained inequality, the compassion for the individual spirit, and the compulsion to be of service to all mankind.'"

President Henry continues:

"As the University enters its second century, it is mindful of its strength and achievements. This fact does not induce complacency, however. The past is indeed prologue, and the agenda for the future suggest that the work to be done is of such importance that it will command the dedicated service of all who believe in the greatness of the University of Illinois.

May this call to greatness continue to inspire us in the years to come!"

We in the School of Life Sciences share with our President the promise
of greatness in the future for the University and particularly in the life
sciences where there is tremendous ferment the demands will be great from
those of us who work in these areas.

We are also grateful to Dr. Reno Kallio for a successful year in the School of Life Sciences. His skill and his ability to coordinate the activities of the various departments into a unified division of the University will make possible the fulfillment of this promise of the future here at the University of Illinois. With our new building completed with fascinating new instrumentation available and with its faculty and students; the potential of the School of Life Sciences is unlimited.

## Departmental Roster 1967-68

### Faculty

Balduf, Walter V. - Professor of Entomology, Emeritus

Chadwick, Leigh E. - Professor of Entomology, Emeritus

Decker, George C. - Professor of Entomology, Emeritus

Fraenkel, Gottfried S. - Professor of Entomology

Friedman, Stanley - Professor of Entomology

\*Ghent, Arthur W. - Associate Professor of Entomology

Hayes, William P. - Professor of Entomology, Emeritus

Horsfall, William R. - Professor of Entomology

\*\*Jaycox, Elbert R. - Associate Professor of Apiculture

Kearns, Clyde W. - Professor of Entomology and Head of the Department

\*\*\*Larsen, Joseph R. - Associate Professor of Entomology

Luckmann, William H. - Professor of Entomology and Head of Economic Entomology Section

MacLeod, Ellis G. - Assistant Professor of Entomology

Milum, Vern G. - Professor of Entomology, Emeritus

Ross, Herbert H. - Professor of Entomology and Head of Faunistic Survey

Selander, Richard B. - Professor of Entomology

Sternburg, James G. - Professor of Entomology

Waldbauer, Gilbert P. - Associate Professor of Entomology

Willis, Judith H. - Assistant Professor of Entomology

<sup>\* -</sup> Joint Appointment with Zoology

<sup>\*\* -</sup> Joint Appointment with Horticulture

<sup>\*\*\* -</sup> Joint Appointment with Physiology and Biophysics

## ···Research Associates

Bhattacharya, A. K.

Miller, Tom

### Research Assistants

Campbell, William R.

DeWitt, Jerald

Eertmoed, Gary E.

Flattum, Roger F.

Fogal, Willard

Harris, Todd

Janicke, James

Kan, Luping

Killmer, Paul S.

Lee, An-horng

Ness, Dollie

Nordin, Gerald

Randall, Robert F.

Ronquillo, Consolacion (Nen)

Seligman, Morris

Sill, Douglas

Sprenkel, Richard K.

Weddle, Richard C.

Wilson, George C.

Wilson, Thomas

Yu, Ching-Chieh

## Teaching Assistants

Bouseman, John K.

Casaburri, Angelo

Fox, P. Michael

Krone, Larry

Parshall, Stephen

Peterson, Clifford

Scarbrough, Aubrey

.....

### Trainees and Fellows

Ameel, John J. - NDEA Fellow
Benson, Robert L. - NDEA Fellow
Chang, Franklin - USPH Trainee
Cupp, Eddie W. - USPH Trainee
Denlinger, David - NDEA Fellow
Dirks, Tobias - USPH Trainee
Fox, P. Michael - NDEA Fellow
Morden, Robert - USPH Trainee
Olson, Jimmy K. - NDEA Fellow
Pinto, John D. - NIH Fellow
Sanburg, Larry Lee - NDEA Fellow
Scarbrough, Aubrey - NDEA Fellow
Seymour, Allison - USPH Trainee
Sheldon, Joseph - NDEA IV Fellow

### Students Not on Staff

Aboualy, Aly

Allen, Tom

Fowler, H. Wade, Jr.

Kuhlman, Donald E. (Instructor, Entomology Extension)

Patterson, William J.

Randell, Roscoe (Instructor, Entomology Extension)

Non-Academic

Duvall, Eloise

Michael, Judy

Plymire, Ruth A.

Ransom, Terry

Reeves, Jean

Yeh, Shaw-mei

Student Employees

Brooks, Ronald

Chang, Cheryl

Hanna, Jean

Meyer, John

Moe, Joanne

Quinlan, Ellen

Rhoades, Bradley

Speier, Pa

Sprietsma, Suzanne

Zachary, Carolyn

#### VISITORS TO THE DEPARTMENT

Dr. John Corrigan
Department of Biochemistry
Tufts University Medical School
Boston, Massachusetts

Dr. Stanley Kater
Department of Biology
University of Virginia
Charlottesville, Virginia

Dr. Robert MacArthur Princeton University Princeton, New Jersey

Dr. Toshio Narahashi
Department of Physiology
Medical Center, Duke University
Durham, North Carolina

Dr. Kenneth Roeder
Department of Biology
Tufts University
Medford, Massachusetts

Dr. Herbert Roller
Department of Biology
University of Wisconsin
Madison, Wisconsin

Dr. George Salt University of Cambridge Cambridge, England

Dr. Adrian Wenner
Department of Biological Sciences
University of California
Santa Barbara, California

Dr. Joan Whitten
Department of Biological Sciences
Northwestern University
Evanston, Illinois

#### SPORTS REVIEW

The Entomology Department during the 1967-68 sports season fielded its first touch football team under the leadership of Ed Cupp. The team adopted the name "Mosquitoes," and in four hard-fought contests, the team came through with two wins and two losses.

The basketball team christened the "Tiger Beetles" with Terry Ransom as pivot man and captain, lost its first two games, but came storming back to take its last four games and a playoff for the championship. Congratulations to our hardy band of atheletes.

The perrennial "Flycatchers," the softball team, lost a lot of its veterans through graduation. But a new injection of vitality with the incoming of new talent to the department this year should elevate the potential of our team to where it should be--on top. This year, the softball team will be captained by Frank Chang.

Bob Benson from our department is still an active member of the Rugby Club. The newsletter this year coincides with this Illinois State basketball tournament. Of course good old "Ma (Ruth Plymire) Barker" is right there clipping our coupons with the office pools. Oh well one doesn't mind loosing one's money when you know it's going to a good cause (namely the rigger). With Terry acting as "bag man" we don't have a chance.

## SOCIAL ACTIVITIES

### Christmas Party

The Christmas Party once again was a success. We had over 80 people turn out at the University Club on December 13 from 8-11. We had an added feature of a new "bar system" this year. Of course the plain punch bowl was also provided for the editor as well as scrumptous chicken salad, cheese spread, etc. sandwiches. Beautiful music was provided for dancing, but apparently everyone this year was too bashful to get out on the floor.

Though we only meet formally once a year it does give us a chance to socialize with each other and bring our wives to get acquainted. It also gives an opportunity to maintain our ties and friendship with our colleagues at the Natural History Survey.

### Spring Picnic

Because of our loyalty to our great Illini Football team the picnic was started this year late in the afternoon. Nevertheless we had a good turnout. Hot dogs and hamburgers were available for everyone. Mrs. Kearns provided a delicious pan of mexican-baked beans, and other members of the department brought lovely salads, potato chips, and other goodies. Cider and cake was furnished by the department. There was a before-dinner game of volley ball and after-dinner game of ping-pong. Hessel Park again provided the site and the weather man cooperated beautifully. We didn't have as many people as we had hoped but those who came really enjoyed themselves.

Between our Christmas party and annual Spring picnic we do get a chance to meet each others families and see our children progress through the years. It is good to get together this once a year and enjoy fellowship with each other.

#### RECENT GRADUATES

## Abdel Meguid Abou-Aly - 1968

Abou-Aly was born November 28, 1934, in Kafr El Sheik, Egypt, United Arab Republic. Aly grew up and came to the University of Illinois from Rodah, Cairo, United Arab Republic. He attended public and primary schools in Cairo, United Arab Republic. After being graduated from secondary school in 1951, he entered the Ain Shans University and received a B.S. in 1955. He majored in entomology and chemistry. He received a Bachelor of Science degree with honors in 1955 and the Master of Science in 1960. Abdel held a research position at the National Research Center in Cairo, Egypt, from 1955 to 1958. He also held a teaching assistantship at Ein Shans University from 1958 to 1961. While he was working as a teaching assistant at the University of Ein Shans in Cairo, Egypt, in the College of Medicine he was teaching in the parasitology department. Mr. Aly also had a scholarship from the National Research Center in Cairo, Egypt, in the entomology section. He also received one year of training in the World Health Organization working with Dr. Zahar.

After completion of the thesis in October, 1967, Aly returned to his native home of Cairo, Egypt, where he will be engaged in teaching and research for the United Arab Republic. He is at present somewhat of an enigma inasmuch as none of us have heard from him since he left the University of Illinois. He is a member of Phi Sigma, the Entomological Society of Egypt and ...

the Entomological Society of America.

## Roger Franklin Flattum - 1968

Roger Franklin Flattum was born in Lanesboro, Minnesota, April 18, 1939. Roger completed his primary and secondary school education in Winona, Minnesota, graduating from Winona High in 1957. He attended Luther College for the academic year 1957-58 then entered Winona State College in September 1959. While at Winona College he majored in biology and chemistry and received the Bachelor of Arts degree in June of 1963. While he was a student at Winona State he served as a laboratory assistant from 1961-63 and during the year of 1962-63 he was a research assistant on the National Science Foundation working with Dr. Friendling. Roger is a product of the midwest who did his undergraduate as well as his graduate work in this part of the country. While at Winona State College, Roger was an excellent student. He was on the honor roll in the biological sciences and was also president of the Winona Academy of Science.

\* Roger entered the University of Illinois in the fall of 1963 and was a graduate student in insect physiology. His first year here Roger was on the US Public Health training grant and during his remaining four years as a graduate student he was supported by an Air Force research grant. Roger did his work under Dr. Sternburg in the general area of the insect central nervous system. As a result of his research based on recordings of the abdominal ganglia of the cockroach he suggested the action of nicotine involved the release of synaptically active materials through diaphasic reaction of nicotine on nicotine receptors and non-nicotinic receptors. He showed that spontaneous activity and synaptic propagation returned to normal in the presence of nicotine and the initial block. Also the nicotine solution from block cockroach preparation caused a second block when applied to a recovered animal. He found that non-nicotinic drugs were effective after recovering from nicotine whereas all nicotinic drugs tested were ineffective. He suggested that the synaptically active material originated in the abdominal nerve cord.

While he was present in the department Roger was a very active graduate student in student affairs and departmental activities, being one of the stalwarts in the sports program and an extremely stimulating student in seminars and classwork. After the completion of his thesis in December of 1967 Roger accepted the job at his old alma mater and returned to Winona State College where he at the present time is teaching biology and in the process of setting up his own research program.

Roger served with the United States Navy Reserve from March 1, 1961, to June, 1963. He was married to Jean Hunter in September of 1962 and their daughter, Christine Ann, was born in March, 1967. Roger is a member of the Entomological Society of America, the American Association for the Advancement of Science, and Sigma Tau Gamma.

## Willard Henry Fogal - 1968

Willard Henry Fogal was born on June 12, 1939, in Lafleche, Saskatchewan, Canada. Willard completed his elementary and secondary school training in Lafleche. Upon graduation from high school in 1957 he entered the Saskatchewan Teachers College in Moose Jaw, Saskatchewan, where he graduated with an interim standard teaching certificate in 1958. Willard then taught school in grades 7 and 8 in the Lloyd Minister Saskatchewan Public School District for one year. In 1959 he entered the University of Saskatchewan where he graduated in 1962 with a Bachelor of Arts degree. He continued at the University of Saskatchewan and received a Master of . Arts degree in biology in 1964. While he was a student at the University of Saskatchewan, Willard held a National Research Council Scholarship; as well as research and teaching assistantships. Willard came to the University of Illinois in September of 1964 where he entered graduate school in the Department of Entomology where he did his graduate studies under the direction of Dr.'s Gottfried Fraenkel and Stanley Friedman. During the time of his stay here he worked as a research assistant on Dr. Fraenkel's grants. Willard was married in August of 1960 and he and his wife, Darlene, have two sons and a daughter.

While at the University of Saskatchewan Willard was co-author of a paper on the development and structure of the achrosomes sperms of lumbricus, terristias which he published jointly with Dr. M.L. Cameron.

While he was here at Illinois Willard did his research under Dr. Gottfried Fraenkel on a histological study of the pre- and post-emergence development of Sarcophaga argyrostoma. He was able to show that melanization of the exocuticle end endocuticle deposition occurred simultaneously whether before

or after eclosion. He also did a time study of post-emergence differentiation in the cuticle of <u>Sarcophaga bullata</u>. He did electron microscope studies on the exocuticle <u>Sarcophaga bullata</u> and showed that the exocuticle was structurally distinct from the layers below. He also did considerable work with bursicon and was able to show that bursicon promotes complete differentiation between the cuticle including melanization and endocuticle deposition.

On completion of his thesis in December of 1967, Dr. Fogal went to the Department of Zoology at the University of Cambridge, Cambridge, England, where he intends to do post-doctoral research in the laboratories of Dr. Wiese Fogh for the next year. After completion of his post-doctoral studies it is Willard's hope that he might return to Canada where he can be engaged in a University in research and teaching.

#### Jean Mario Mathieu - 1967

Jean Mario Mathieu was born August 31, 1935, in Mexico City, Mexico. He received the degree of Ingeniero Agronomo from the Instituto Tecnologico in Monterrey, Mexico, in 1958. After completing this degree in Mexico Jean came to the University of Illinois where he entered the Department of Entomology as a graduate student and received the degree of Master of Science in Entomology in 1960. Subsequent to 1960 he taught at the Instituto Tecnologico for 2 years after which time he returned to the University of Illinois in 1962 to begin work on his doctoral dissertation under the direction of Dr. Richard Selander. In March, 1966, he returned to Mexico completing his doctoral thesis in absentia. His studies at the University of Illinois were supported largely by scholarships from the Rockefeller Foundation. He completed the dissertation and defense of his thesis in December of 1967.

His research was on the bionomics, sexual behavior, and adult anatomy of the Albida Group of the genus Epicauta, Coleoptera, Meloidae. After the completion of his dissertation, Dr. Mathieu returned to Mexico where he is currently on the staff of the Instituto Tecnologico. At that institution he teaches entomology at both graduate and undergraduate levels. His main research interests continue to be in the area of insect systematics and behavior. He has already published several articles on insect taxonomy and bionomics.

Jean is married and they have two lovely daughters. We shall be looking forward to hearing from Jean in the literature continually.

#### David Comstock Newton - 1967

David Comstock Newton was born April 27, 1939, in Middletown,
Connecticut. He graduated from Durham High School in 1957 after which
he entered Central Connecticut State College and received the Bachelor of
Science degree in biology in January of 1961. During the period of January,
1961, to September, 1964, Dave taught science in the public schools of
Connecticut and also attended Wesleyan University during the following four
summers where he earned the Master of Arts and Liberal Studies degree from
Wesleyan University. He also is the recipient of National Science Foundation
summer institute grants during the summers of 1962 through 1964. Dave taught
junior high school science at Southberry Consolidated School in Connecticut
and also high school biology and chemistry and physical sciences at the
Northhaven High School. Dave had an excellent record while teaching in the
public school system in Connecticut and is a dedicated teacher in the biological sciences and will undoubtedly make a very significant contribution in
the teaching of the biological sciences in the future.

In the fall of 1964 he entered the Graduate College in the Department of Entomology at the University of Illinois where he began his studies of the behavior of honeybees under Dr. Elbert Jaycox. During the time that he was a student here Dave held research assistantships in the Department of Horticulture for one semester and United States Public Health Traineeships for three semesters and two summers. While he was here Dave worked on the behavioral response of the honeybees Aphus melifora to colony disturbance by smoke, acetic acid, isopentyl acetate, light, temperature and vibration. Dave found that the response of the honeybee to disturbance caused by opening and examining their colonies included aggression, cleaning movements, disturbance of departing foragers, gorging, guarding, trouping behavior and ventilatory fanning.

Dave is a member of Kappa Kelta Psi Pi and the Entomological Society of America. Dave is married and they have two children.

Upon the completion of his thesis in March, 1967, Dave accepted a job in the Department of Biological Sciences at the Central Connecticut State College in New Britain, Connecticut.

## Lance George Peterson - 1968

Lance George Peterson was born January 1, 1940, at Duluth, Minnesota. After being the New Year's baby of the year, Lance completed his primary and secondary education in Duluth where he graduated from the Duluth High School in 1958. Upon graduation from high school he entered the University of Minnesota in Duluth where he received a Bachelor of Arts degree in Zoology in 1962.

While at the University of Minnesota in Duluth Lance majored in zoology and chemistry and with a minor in psychology. In 1962 Lance enrolled in the Graduate College at the University of Wyoming where he had a research assistantship in insect physiology where he was working with Dr. Joseph Larsen. While at the University of Wyoming, Lance worked on sensory reception and olfaction in housefly Musca domesticus and worked on the problem concerned with oviposition and various maneuvers. This research resulted in a publication of a paper with Dr. Larsen and Robert A. Pfadt at the University of Wyoming. In 1963 he left Wyoming with Dr. Larsen to come to the University of Illinois.where he continued his research in insect physiology as a US Public Health Trainee Fellow.

While a graduate student at the University of Illinois Lance was active in and directed the sports program for the past two years. He was a stalwart in baseball, handball and any other sports the graduate students were engaged in. While Lance was at the University of Illinois he did his graduate work under the direction of Dr. Joseph Larsen. The title of his thesis was 'Cellular Immune Responses of Insects to Foreign Tissue Implants." During the course of his research he was able to show that closely related species did not demonstrate an immune response to interspecifically implanted ovarian tissue. The species with more distant phylogenetic relationships reacted against interspecific implants. He was able to demonstrate that hemocitic capsule formation in ovarian tissue implants occurred between 15 and 30 minutes after implantation. He was also able to show that capsule formation which is the immune response was inhibited by the presence of excess EDTA and sodium citrate. He has presented papers on his work in meetings of both the Entomological Society of America and the American Society of Zoologists.

Upon the completion of his thesis in November of 1967 Lance accepted the job with the Eli Lilly Corporation in Indiana. He is currently in charge of

their research and development area in insect physiology and is doing some rather fascinating research with insect hormones and the ways which they might apply to possible biological control of insects that are detrimental to agricultural products.

Lance is married to Cleone and at the present time they have no children. He is a member of Sigma Xi and the American Society of Zoologists and the Entomological Society of America.

# Judith Louise Reynolds - 1967

Judith Louise Reynolds was born Ocotober 12, 1937, in Sidney, Australia. She received her primary and secondary education in the Methodists Ladies College, Burwood, Sidney, after which she entered the University of Sidney. In 1955 she was awarded a Commonwealth Scholarship to the University of Sidney which she held for the duration of her undergraduate studies there. In 1959 Judy was awarded the degree of Bachelor of Science with honors in zoology from the University of Sidney and obtained a teaching fellowship in zoology at the University of New South Wales. While holding this fellowship at New South Wales she did research for the degree of Master of Science in zoology which was awarded in 1962. She was then appointed to a senior tutorship in zoology at the University of New South Wales. She held this position until September of 1963 when she came to the United States to enter the Graduate College in the Department of Entomology at the University of Illinois.

While a graduate student at the University of Illinois she held teaching assistantships in biology and the Department of Entomology. In June of 1964 she was awarded the Ethel M. Barber International Fellowship by the American Association of University Women. The following two years she held teaching assistantships in the Department of Entomology. While she was a graduate student here at the University of Illinois Judy worked under Dr. Arthur Ghent on the assessment by progeny of early changes in competing populations of <a href="Tribolium confusum">Tribolium confusum</a> and <a href="Tribolium casteneun">Tribolium casteneun</a>. During the course of her studies she attempted to determine the pathways leading to the elimination of <a href="Tribolium confusum">Tribolium confusum</a> under conditions of comparative interaction. Successive generations of both species were found to pass through each developmental stage. From her research she postulated that the mechanism causing the reduction of

various cohorts of the developmental stages is the same as that responsible for division of the population of both species to discreet cohorts, namely intense cannibalism by the larvae.

Judy was a member of Australian Federation of University Women, Australian and New Zealand Association of Advancement of Science and the Australian Ecological Society and the Entomological Society of New South Wales. She is also a member of the Ecological and Entomological Societies of America and the American Association of University Women. She is also an elected member of Sigma Delta Epilson.

Upon the completion of her degree here at the University of Illinois in May of 1967 Judy accepted a position in the Department of Biology at the University of Massachusetts in Boston, Massachusetts where she is now teaching basic biology and pursuing her research in population biology.

## Isaac Moses Seligman - 1968

Isaac Moses Seligman (Morris) was born September 20, 1937, in Johannesburg, South Africa. As a young boy he matriculated in the Athlone Boys High School, Johannesburg, from which he graduated in 1955. In 1956 he entered the University of Witwatersrand in Johannesburg. He received a Bachelor of Science degree with honors in 1962 from the University of Witwatersrand.

In the fall of 1962 Morris entered the Graduate College at the University of Illinois and was a student in the new biology curriculum of the School of Life Sciences. His research and his teaching assistantship responsibilities were in the Department of Entomology. While he was a graduate student at the University of Illinois Morris held teaching assistantships both in the department of entomology and also with Dr. Judy Willis in the undergraduate honors biology curriculum.

While Morris was a graduate student here at Illinois he married
Malkah Pollack in 1963. They now have two sons. He worked under the direction
of Dr.'s Gottfried Fraenkel and Stanley Friedman while he was completing his
graduate study here at the University of Illinois. He worked on tyrosine
metabolism and its hormonal control after eclosion in the adult fleshfly
Sarcophaga bullata. The thesis was concerned with tyrosine turnover in insects
during sclerotization and lead into two basic observations, (1) that
tyrosine accumulates if sclerotization is inhibited and (2) the utilization

of tyrosine was hormonally controlled. Upon completion of his thesis in December of 1967 Morris travelled to Tel Aviv, Israel, and visited with his brother and Dr. Fraenkel who is on sabbatical leave there. After the first of March he will be at his permanent location where he has accepted a position with CSIRO Division of Entomology in Canberra ACT, Australia.

#### PRESENT ENTOMOLOGY GRADUATE STUDENTS

## John J. Ameel

The year has been spent finishing course work and starting research on the food utilization by the Cadelle, <u>Tenebroides mauritanicas</u>. Advisor: G.P. Waldbauer.

## Robert T. Allen

In August R.T. Allen assumed his new position as Assistant Entomologist in the Department of Entomology, University of Arkansas. In addition to working on his thesis, Tommy is busy with projects involving biological control of economic insects, and hopes to establish some base lines representing normal levels of naturally occurring predation. Advisor: Dr. H. H. Ross.

### Robert L. Benson

The last year was successful because 1) I finished my last course,
2) I passed prelims, and 3) I found a good source of enzyme for my thesis
"The biosynthesis of glucosamine-6-phosphate in insects." I plan to finish in a few months. Wife's name, Lois. Advisor: Dr. Stanley Friedman.

### A.K. Bhattacharya

I was born in Allahabad, India on August 28, 1942. I received my early education from Queen's College and Lucknow Christian College, and finally awarded B.S. from the University of Lucknow, Lucknow. Following this I entered the post-graduate school, Indian Agricultural Research Institute, New Delhi. I was awarded a fellowship from the Ministry of Food and Agriculture, Government of India and completed my M.S. in Entomology in 1963. My thesis topic dealt with a study of amino acid requirements of khapra beetle, Trogoderma granarium which was supervised by Dr. N.C. Pant. After finishing my M.S. I decided to stay at I.A.R.I. and continued my Ph.D. program in Entomology as Research Fellow, Council of Scientific and Industrial Research, Delhi, under the direction of Dr. N.C. Pant. I obtained my Ph.D. in August 1967. My thesis topic was entitled "Nutritional behavior of T. granarium on leguminous seeds with special reference to growth inhibition in Lens esculenta and Phaseolus vulgaris."

I arrived in the U.S.A. on August 25, 1967. After spending some time with my brother at Cleveland, Ohio, I joined this department on September 1, 1967 as a Research Associate with Dr. G. Fraenkel and Dr. G.P. Waldbauer. I am interested in insect nutrition and presently doing research on the utilization of food by stored grain insects.

#### John K. Bouseman

I continued my work on the systematics of the family Rhipiphoridae. This past year I attended the ESA meetings in New York. Advisor: Dr. R.B. Selander.

## William R. Campbell

Attended the New York ESA meetings, enjoyed the city; almost got snowed in; did get cut short on re-imbursement due to new rules for grad students (too bad). Believe it or not, have finally finished languages, pre-lims are in the near future. Research-wise, still exploiting cholinesterase. Advisor: Dr. C.W. Kearns.

## Angelo A. Casaburri

Angelo is a new student this year. He arrived in September 1967 from Fresno State College in California where he received a B.A. in biology. Angelo is spending this year concerning himself with coursework. Advisor: Dr. J.R. Larsen.

## Franklin Chang

I attended the ESA meetings in New York. I am doing research on lipid metabolism and transport in insects. I also got married. Wife's name, Cheryl. Advisor: Dr. Stanley Friedman.

## Eddie W. Cupp

Ed spent a busy year completing required course work, initiating his thesis research and completing his doctoral preliminary exams. Of course there was still time to rally to the call of the "mosquitoes," the newly formed entomology intramural football team. Having received a LSU-NIH Inter-American tropical medicine fellowship, Ed is spending January and February of 1968 in several central American countries. Upon his return, he will be continuing his research involving thermal stress and an anomolous development in Aedes mosquitoes. Advisor: Dr. William R. Horsfall.

#### David Denlinger

I'm a newcomer to the Illinois scene. After receiving my B.S. degree in Zoology from the Pennsylvania State University last March, I completed the academic year by working under the guidance of Dr. William Yendol of Penn State on the lipid composition of several insects. At the beginning of summer school I came to Illinois. My research activities will probably focus on some aspect of diapause in Sarcophaga; special problems last summer and this semester have directed my interest to this area. Other major events of the year include marriage and the hard-felt oppression of the new draft law. So my stay may be a short one! Advisor: Dr. G.S. Fraenkel.

#### Gerald Ray DeWitt

Gerald comes to the University of Illinois as a new student this fall having just received his Bachelor of Science degree from Eastern Illinois University where he was a student of Dr. Garland Riegal, a former graduate of Illinois. Gerald's research interests seem to be in biological control of insects. He is currently completing his course work as a first-year graduate student in entomology and plans to continue in the general area of insect control. Advisor: Dr. W.H. Luckmann.

## Tobias Dirks

USPH trainee. I have been attempting to maintain and collect venom from wasps of genus Polistes. Trips to east central Kansas and areas in Illinois for collection of wasps. Attended ESA meetings in New York. New addition -- Matthew Lyle -- December 29, 1967. Advisor: Dr. J. Sternburg.

## Gary Eertmoed

Last year was highlighted by a grant from The Society of the Sigma Xi which allowed me to visit the United States National Museum, the American Museum of Natural History, and the Museum of Comparative Zoology where I sorted through relatively large psocid collections in search of specimens for my thesis research.

I ended 1967 with a big sigh of relief when I passed prelims, and am now looking forward to an exam-free year of research. Advisor: Dr. Richard B. Selander.

## H. Wade Fowler, Jr.

Major H. Wade Fowler, Jr. of the US Army Medical Service Corps, returned to the University of Illinois in 1966 after a tour of duty in Germany. Wade is working on the bionomics of Aedes vexans. During 1967 Wade finished his course work and passed his preliminary examination. He is now devoting all his time to research for his Ph.D. thesis. Advisor: Dr. William R. Horsfall.

#### Michael Fox

Activities during the past year included finishing coursework and developing some skills in histochemistry for the electron microscope. I hope to take prelims during this spring semester and then to begin full-time thesis research probing the mysteries of the world of the ultraminute. Advisor: Dr. J.R. Larsen.

## Todd Harris

Todd is a new student in the Department of Entomology here at the University of Illinois. He completed his B.S. degree in May 1967 where he graduated from Gustavus Adolfus College where he did his major area in biology with a minor in speech. While he was at Gustavus College he was a lab assitant in Biology, Zoology and Entomology. He also held an NSF research foundation fellowship in the summer of 1965. Todd has a desire to continue his research in the entomology field and to prepare himself to do both research and teaching in this area. At the present time he is at the Natural History Survey working with Dr. Weldon Larimore in the aquatic biology section. Advisor: Dr. H.H. Ross.

### Luping Kan

Luping is learning to rear mosquitoes from Dr. Horsfall and going to study the physiology of Aedes mariae in sea water. Advisor: Dr. G.S. Fraenkel.

### Paul S. Killmer

Course requirements and prelims have been completed. Research is centered around observations of female mosquitoes (Aedes aegypti) which have been infected with Venezuelan Equine Encephalitis and Yellow Fever virus using the electron microscope. Results to date are very promising. We are happy to announce the birth of a son, Jeremy Sedgwick, on October 15, 1967. Advisor: Dr. J.R. Larsen.

### NOTE:

Since Paul Killmer had written the summary of his activities during the past year in the Entomology Department a great tragedy entered the lives of the Killmer family. Paul and Valerie Killmer were involved in a fatal automobile accident on January 28, 1968. They were both mortally injured as a result of the accident and Valerie passed away on February 8, 1968 and Paul died March 14, 1968, both as a result of the accident. They are survived by their son Jeremy.

We would at this time like to pay our respects to Paul who was an excellent graduate student in the Department of Entomology. As indicated in his own words he has completed essentially all of the requirements for the degree with the exception of the writing of his thesis. He was an excellent electron microscopist and had the potential of making a great contribution to his chosen field. His memory is honored by his fellow students and professors and members of the Department of Entomology, here at the University of Illinois. Paul's thesis will be completed and his Ph.D. will be awarded posthumously by the University of Illinois.

#### Lawrence J. Krone

Larry came to the University of Illinois after receiving an M.P.H. from Yale University. As yet his area of research is not clearly defined. The fall semester had been spent on classwork and assisting in Medical Entomology. Advisor: Dr. William R. Horsfall.

#### Donald E. Kuhlman

Don worked as an extension entomologist for the College of Agriculture and Illinois State Natural History Survey. He travelled throughout Illinois doing insect surveys. He is continuing on thesis research with rootworms. Don is married and has two children. Advisor: Dr. W.H. Luckmann.

#### An-horng Lee

Lee is a new student this academic year. His area of research is not yet determined. Advisor: Dr. C.W. Kearns.

#### Tom Miller

Graduated and received the Ph.D. from University of California at Riverside in June 1967 under Dr. Robert Metcalf. Arrived at Urbana September 1 for a postdoctoral year under Dr. Kearns.

Main professional interests are neurophysiology-neuropharmacology. Currently pursuing a physiological study of the cockroach heart. Preliminary results will be published partly in 1968 in the Journal of Insect Physiology entitled "Site of action of pharmacologically active compounds on the heart of Periplaneta americana L."

Mrs. Hollace Miller after three years teaching government in a rural California high school and a confrontation with the war on poverty is engaged in full time work on a fiction mystery novel centered around her girlhood in South Dakota.

### Bob Morden

I am in the second year of course work and presently working on supersensitivity to nerve transmission among the invertebrates. Last November I attended the ESA meetings in New York. Last summer the sub-tropics of Florida and northern Minnesota were the sites of two vacation-collecting trips. Advisor: Dr. J.G. Sternburg.

## Gerald L. Nordin

Gerald Nordin received the Master of Science degree in February, 1968. His M.S. thesis was entitled "The bionomics and control of the juniper welworm, Dichomeris marginella (F.), in Central Illinois." Gerald is continuing work toward a Ph.D. under Dr. Luckmann at the Illinois Natural History Survey. Gerald and Linda became the parents of a baby girl, Michelle Renee, born December 15, 1967. Advisor: Dr. W.H. Luckmann.

### Jimmy K. Olson

I am a native of Idaho, married, and have two children, the oldest (Teresa) being 2 1/2. I completed my undergraduate work at the University of Idaho and received a B.S. degree in Agriculture (major: entomology) in June 1965. Prior to my beginning graduate work at Illinois, I spent two and a half years serving as an officer in the Army. During my tour of active duty, I was in charge of a field ecology and epidemiology research section which was concerned with the study of insect-borne diseases in Utah. Since my arrival at Illinois in September 1967, I have been concerning myself with course work and a preliminary literature review in preparation for a research problem. Advisor: Dr. William R. Horsfall.

## Stephen J. Parshall

This fall semester I have been taking three entomology courses plus a 1/2 unit special problem under Dr. E.G. MacLeod. This problem has centered around determining whether hybrids from reciprocal crosses of Chrysopa carnea and Chrysopa downesi change color as diapausing adults -- like carnea or stay green as diapausing adults -- like downesi. Diapausing adults for both species can be had by rearing at short photoperiod (10 hours light per day).

My results show that nearly all individuals show some degree of color change. However, hybrid males with carnea as the female parent show a significantly greater degree of color change than  $F_1$  females from a carnea parent,  $F_1$  females from a downesi parent, and  $F_1$  males of a downesi parent. Furthermore, these last three groups, compared with one another, do not show significant difference in degree of color change amongst themselves. Steve received the M.S. degree in February 1968. Advisor: Dr. E.G. MacLeod.

### William J. Patterson

Major Patterson of the U.S. Army Medical Service Corps having completed all his course work, preliminary examination, etc. leading toward the Ph.D. degree is now working at a furious pace to complete the thesis on histopathological effects of thermal stress in aedine mosquito larvae and pupae. Bill has received word that he is to return to active duty at the end of Spring semester and is trying to bring all of his research to a close. Advisor: Dr. William R. Horsfall.

#### Walter Clifford Peterson

Mr. Peterson is a new student in the Entomology Department at the University of Illinois this year. Cliff received his bachelor degree in 1967 from Western Maryland College. His major field was biology. While he was a student at Western Maryland he worked as a lab assistant in freshman biology, in invertebrate zoology and botany. He is a member of Beta Beta Beta National Biological Honors Society, was on the Dean's List in his sophomore and junior years at Western Maryland. Cliff is spending his first year here getting course work behind him and considering possible research areas. Advisor: Dr. E.G. MacLeod.

#### John D. Pinto

Basically another "rubber stamp" year. Most of my time has been spent finishing up my studies on the taxonomy and biology of Meloe. Also visited the Museum of Comparative Zoology at Harvard and the Philadelphia Academy of Science to study Meloe types in June, and attended the ESA meetings in November. Advisor: Dr. R.B. Selander.

## Robert Randall

Engaged in thesis research on cholinesterase. Advisor: Dr. C.W. Kearns.

## Roscoe Randell

Roscoe works full-time as an extension entomologist at the State Natural History Survey. He had a special project last summer evaluating gross damage caused by the corn leaf aphids. He travelled throughout Illinois working on this project. He attended the Pesticide Safety Meeting in Fort Collins, Colorado. Advisor: Dr. W.H. Luckmann.

### Nen Ronquillo

Sons arrival: last August 8, 1967. Carlos is 16 and a junior at Urbana High School. David is 14 and a sophomore at Urbana High School. They are enjoying school. Advisor: Dr. William R. Horsfall.

# Larry Sanburg

I attended the Symposium on Regulation and Biological Time Constants at Argonne National Lab in October but missed the ESA meetings in New York. I hope to finish all course work by the end of the coming summer and then really get to work on diapause in Anopheles. I made a trip to Minnesota over semester break looking for diapausing mosquitoes. Vivienne has finished her course work for a B.A. in Psychology and will graduate with Honors in LAS in June. Advisor: Dr. J.R. Larsen

### Aubrey Scarbrough

I am finishing my course work this year and continuing research on the behavior of Hyalophora cecropia. Advisor: Dr. G.P. Waldbauer.

## Douglas Keith Sell

Educational background: University of Nebraska - 1960-1962. University of Nebraska, College of Dentistry - 1962-1965; North Dakota State University - 1965-1967, B.S. June 1967.

I was introduced to entomology by the USDA. Before coming to Illinois, I was in charge of the insect rearing section of the Metabolism and Radiation Research Laboratory, Fargo, North Dakota. I am employed full-time by the Section of Economic Entomology, Illinois Natural History Survey working under Dr. W.H. Luckmann on the biology and control of vegetable insects. Fifty percent of my time is devoted to basic or developmental research and fifty percent to applied research. My main area of interest at the present time is the effects of certain plant systemic materials, other than insecticides per se, on insects. Some of these materials are chelating agents, chelated metals, and certain fungicides.

In November, I attended the National Meeting of the Entomological Society of America. This winter, I have represented the Natural History Survey at several vegetable growers meetings in the state. Advisor: Dr. W.H. Luckmann.

### Joe Sheldon

1967 has been a rather uneventful year. Course work has the primary pain in life but that is now nearing completion. My wife Donna is working at Champaign National Bank and enjoying her work there. We were able to take off a couple of weeks last summer and spent them on a delightful camping trip in Kentucky. At least there are a few <a href="mailto:small">small</a> hills down there. In November I attended the ESA Meetings in New York and had my first opportunity to visit the East coast. I am looking forward in 1968 to getting a good start on my research and also a trip back home to Oregon for a few weeks. Advisor: Dr. E.G. MacLeod.

## Richard K. Sprenkel

I received my MS degree in entomology in September 1967 from the Pennsylvania State University. The same month I began graduate study at the University of Illinois and with Dr. Joseph V. Maddox of the Illinois Natural History Survey, I began research in the field of insect pathology. In November 1967 I presented a paper at the National Meeting of the ESA entitled "Effect of chemosterilants on the alfalfa weevil." Advisor: Dr. J.G. Sternburg.

#### Richard C. Weddle

At present working on the ontogeny of blister beetles of the genus Epicauta and trying to finish the thesis. Travel: We took a three week trip down south. We spent about a week in Monterrey, Mexico visiting a recent Illinois graduate, Jean Mathieu. Advisor: Dr. R.B. Selander.

#### George Robert Wilson

Major event was marriage to Carol Jean Patterson on January 13, 1968. I am currently busy writing a thesis "Diapause in the Tobacco Hornworm" and several articles which should come from it. Current research interests include photoreceptivity of buried insects, ecdysone and wound metabolism, inhibitory hormones in insect development, and the histochemistry and morphology of insect endocrine organs.

Job hunting is a big problem. Carol will earn her Ph.D. in Political Science before December of this year. We need to find a place where we can both work. Advisor: Dr. J. R. Larsen.

#### Thomas Henry Wilson

Thomas Wilson is a new student at the University of Illinois this year in the Department of Entomology. Thomas received his B.S. degree in 1965 from Onachiga Baptist University with major in Zoology and a minor in Botany. He received his M.S. degree in 1967 from the University of Arkansas with a major in Entomology and a minor in Zoology. Thomas was a member of the Entomology Club at Arkansas and also belongs to the Entomological Society of America. He had a graduate assistantship at Arkansas and also received a commission in the ROTC in 1965. He has spent his first year here catching up on subject matter and techniques and considering possible problems for research. He will probably be working on thrips with Dr. Lew Stannard. Advisor: Dr. W.H. Luckmann.

# Ching-Chieh Yu

I went to Canadian Rocky in last September with Bill Campbell and John Ameel. We had a very nice time camping and hiking there. I attended the New York Meeting of the ESA. Advisor: Dr. C.W. Kearns.

## NEWS ABOUT THE STAFF MEMBERS

#### Dr. Walter V. Balduf

The summer of 1967 was again spent, both profitably and pleasantly, at the Olsen's resort, on Eaglenest Lakes, near Ely, Minnesota. Mrs. Balduf persuades beautiful flowers to grow in sandy soil. She really loves this work out-of-doors and has long since achieved remarkable "know-how," not only in gardening in the comparative coolness of the north woods, but continues hooking, crocheting, knitting and other types fanciwork. And has not lost the old art of baking and cooking!

My main job is entomological as usual—it rates far ahead of angling. Now it is the complex of borers and parasites associated with balsam trees. What a treat—to sit out in the woods splitting chunks to find the insects, and sometimes be serenaded by the rose—breasted grosbeak. Spring and winter seasons mean having specimens determined and preparing the results of my research for publication.

Best wishes to all my students of other years.

### Dr. Leigh E. Chadwick

Until April 1 I was engaged in research at the US Army Natick Laboratories,
Natick Massachusetts, working with Dr. Louis M. Roth on respiration of cockroaches.
We then returned to Maine and spent the summer, until October, at Blue Hill Falls.
When it got too cold at the shore we moved over to our winter home, which is nearby, at Sargentville, Maine. This is the first winter we have spent here, and so
far we have been enjoying it greatly. We passed up our usual Christmas trip to
see the children, who are in Newport News, Virginia, Washington, D.C., and
Baltimore, Maryland; and intend instead to go to them in the Spring, about April.
We have now 7 grandchildren, and 1 great grandson.

I have not been doing any entomological work this year, but am still interested and read a good deal. Recently, two of my translations from the German have been published in English: THE SNOUTERS, by the Natural History Press, from DIE RHINOGRADENTIEN, etc. by H. Stumpke (G. Steiner); and THE DANCE LANGUAGE AND ORIENTATION OF BEES, by the Harvard University Press, from the German version by K. von Frisch.

Maria and I are very happy with our retirement. This a wonderful place to live, we have loads of friends, and are constantly busy, with more to do than we know how to attend to. Our best wishes are always with all at the department.

## Dr. George C. Decker

Still retired and no real change contemplated. Yesterday I went to the Super Bowl (Yea, Packers) in a sport outfit, while my Yankee friends were frizzling in the drizzle, so why look back or look for a change. Mrs. Decker and I—in fact, the family (one exception)—are enjoying the best of health. Mom and I went to a doctor last week for the first time in 3 years, not that we needed to, but just to make a contact in case of an emergency. Our youngest, Frances (the one exception), was in a serious car accident in May—unconscious for two weeks—but is recovering slowly. She spent November and December with us in Miami.

Mrs. Decker and I attended the International Congress on Plant Protection in Vienna, Austria, Aug. 28-Sept. 5, where we met Dick Dysart, Dr. and Mrs. Dwight \*Powell, and a number of other friends and acquaintances. Later we drove from Vienna to Paris with Dr. Dysart. What a guide, and a wonderful companion on a most delightful trip.

I am still active in the affairs of the Food Protection Committee, the National Research Council, and the Entomological Society of America, but am attempting to cut back gradually.

We have enjoyed short visits from a number of friends and look forward to seeing more (the H. B. Mills next week), but note that some are passing us by.

Have managed to get some three or four manuscripts off for publications, and have more in progress.

This is retirement?

#### Dr. Gottfried S. Fraenkel

This year Dr. Fraenkel has flown the coop and avoided supplying the editor of the newsletter his usual few brief cryptic statements concerning his activities during the past year. However, he did leave us a very rich itinerary for a much earned sabbatical year.

Dr. Fraenkel working with his two students Dr. Willard Fogal and Dr. Morris Seligman spent a very busy first semester, 1967 helping them complete their thesis research and prepare themselves for the doctoral examination. With this particular chore out of the way Dr. Fraenkel took off for an extensive sabbatical travel.

He left in December, 1967. His first stop was New Delhi, India where he spent considerable time visiting laboratories of Dr. Nayar. The first part of January he was at the Central Marine Fisheries Research Institute of Mandapam District of Ramanathapuram also in India. After his extensive visits in laboratories in India, Dr. Fraenkel went to Israel where he is spending the rest of this year at the Hebrew University in Jerusalem. I'm sure that Dr. Fraenkel will have a very interesting sabbatical year and will come back filled with enthusiasm and new ideas and will be following new research pursuits. We will be looking forward to his return. At the present time Dr. Fraenkel can be reached c/o Dr. Shulov, Division of Entomology, Hebrew University, Jerusalem, Israel.

### Dr. Stanley Friedman

Activities were limited to some similar to those pursued in the previous year. Not many changes around home except that we are all one year older. Attended meetings of various scientific societies throughout the year and learned much to help both research and teaching. Took summer vacation in the Missouri valley and found it lovely.

Stan has published a number of articles this year on the effects of hormones on metabolism. Our faithful editor only had to retreive his request for news-letter activities from the wastebasket three times this year before Stan gave in to my nagging and wrote his usual 20 words or less.

### Dr. Arthur W. Ghent

During the past year, A. W. Ghent received a grant from the American Sport Fishing Institute, to conduct a statistical re-examination of A. G. Huntsman's well-known correlation between salmon fishery and rainfall in the drainage basin of the Miramichi River in New Brunswick, Canada. This correlation is discussed, among other places in "Principles of Animal Ecology" by Allee, et al.

A part of this project is the substance of Mr. Bruce Hanna's M.A. thesis in the Department of Zoology. Dr. Ghent assures us that, despite the name of his granting agency, he really did spend his time gathering research data during his visit, with his wife Jocelyn, to New Brunswick last spring.

Dr. Ghent and Mr. Hanna have collaborated on another study during the past year, in which they found that the so-called "broken stick" formula, employed by MacArthur and others in studies of species abundance, was well suited to predicting the distribution of intervals between events occurring at random in time. In their study, scheduled to appear in the April issue of the American Midland Naturalist, they employ such examples as the intervals between twin births in the Champaign-Urbana area, and the intervals between crashes of commercial aircraft.

Among other projects now in progress, Dr. Ghent has prepared four articles during the past year, under the series title "Selected Problems in Biometry."

These are appearing in the Tri-Beta Honors Biology Journal, "Bios," and will serve as early chapters in a planned book that will probably bear the same name.

Plans for the coming year include another visit to New Brunswick and a trip to the University of Massachusetts in April to lecture on the New Brunswick salmon studies. Jocelyn Ghent is proceeding towards her M.A. in History this year, and holds a Woodrow Wilson Fellowship which she was awarded in the spring of '67.

### Dr. William P. Hayes

Professor Hayes is out of the country aboard the Sagafjord touring for three months. He is touring the coastal towns of Africa and South America. He has no publications for 1967. We will look forward to a complete report of his worldly travels in the next years newsletter.

## Dr. William R. Horsfall

The past year has been a time of steady and significant progress in the study of the effects of thermal stress on development. This has been made possible by the tireless effort of a competent group of graduate students. Aly Abou-Aly completed his work on <u>Psorophora varipes</u>. Nen Ronquillo and Bill Patterson stayed at their microscopes all year and have compiled a massive collection of information on what goes on inside mosquito larvae and pupae as <u>Aedes</u> mosquitoes acquire the plumbing and fixtures of adults. In addition to the thesis of Aly Abou-Aly, three

other papers have appeared from work done with others. Dr. Milan Trpis of Czechoslovakia completed his year as a post-doctoral fellow and his work has been or will be in print. During the summer we had John Boorman from the Animal Virus Research Institute of England here for study. As of the first of this year there were six graduate students, an artist and technician working with me on mosquitoes. It was a great pleasure late in the year to be in New York and meet with so many of our former students. An additional interesting experience this year has been that of being a visiting professor teaching medical entomology at Purdue University. I handled my regular work here and spent Friday afternoon and Saturday morning at Purdue. They have a fine group to work with there, too.

### Dr. Elbert R. Jaycox

This was the year that Entomology 361 finally became a reality, with 14° students studying honey bee behavior. Four entomology and 10 zoology students were included.

The year's behavior studies on bees were made more interesting by the refusal of the bees to visit feeders with counters at the small entrances. When we learned how to entice them inside, they set up a team system with the inside team feeding the outsiders while one or the other sat in the light beam. This year we may change the project goals and study frustration among bee behaviorists.

I attended the XXIst International Apicultural Congress in August at the University of Maryland. The weather was unusually good for Maryland and there was a fine representation from foreign countries, including about 15 from the USSR. After the meetings I visited Cornell University to collect and study the behavior of an introduced Megachilid bee new to the area. The rain and cool weather washed out my plans and almost washed away the family tent at Buttermilk Falls Park at Ithaca.

## Dr. C. W. Kearns

Aside from a trip to Japan in August of the past year Camille and I have led a more or less routine existence. We became grandparents for the third time when Tom's wife Ann gave birth to a girl, Julia. We may spend most of next summer in England where I hope to finish up some work I started several years ago with

Dr. Cyril Donninger. Whether we go or not will depend upon the nature restrictions likely to be placed upon travel.

We have had the pleasure and stimulating experience of having Dr. Tom Miller from the University of California at Riverside with us. He came last August and will remain until next August when he plans to do a year of post doctorate work at the University of Glasgow. Dr. Miller has done much to clear up some uncertain matters about the pharmacology and innervation of the cockroach heart.

I still manage to get in some golf and I'm looking forward to next summer when our new staff member and expert golfer, Bob Metcalf arrives. I don't need his level of competition, but I expect that by playing with him I can learn to improve my game. This, of course, is just another of the many benefits which we expect to gain from Bob.

# Dr. Joseph R. Larsen

Having committed myself to do the newsletter for the fourth year I realized that it says something; however, I am not willing to admit what. My activities this past year have been a continuation of my work with insect sensory receptors, the primary emphasis still being on the ultrastructure of the insect nervous system and the receptors themselves.

We did very little traveling this year, other than a trip to Utah in August to take our oldest daughter Pam to Brigham Young University where she is happily housed as a freshman toiling away at such ugly things as astronomy, and other requireds and hoping to purge herself of these as quickly as possible so she might labor in her areas of interest, music and drama. We did attend the electron microscope meetings in Chicago.

Teaching responsibilities are still involved with insect physiology and continued interest in biology 110-111 laboratories. This past year has been most successful in the teacher training program in the biological sciences in that we have been able to complete a new curriculum for these people and give them what we feel will be more meaningful education and better prepare them as teachers of the biological sciences.

I'm happy to announce that Debbie has reached the last year of Science Fair-ism. When this is over I hope that her father might be excused from Science Fairs for at least four years until Jennifer comes along.

I would be remiss if I did not comment at this time on the great sadness that has come into my life and all of the people in the Entomology Department at the loss of one of my very fine students, Paul Killmer and his wife Valerie, who were both killed as a result of an automobile accident on January 28, 1968. The only survivor of the accident was their young son Jeremy who is being cared for by Paul's brother. This has indeed been a shock and a very tragic experience in my life and I feel a great loss as Paul was probably one of the finest students in electron microscopy that I have ever been associated with. I am delighted to say that the University has most graciously consented to award his degree posthumously. Paul's loss will be felt very deeply and we shall all be better people for having had the opportunity to know him.

#### Dr. William H. Luckmann

The highlights of 1967 most certainly centered on my trip to India and the funding of new offices and laboratories for construction in 1968 and 1970. Under contract with U.S.A.I.D., I spent three months in Jabalpur, M.P., India, as advisor in research to J. Nehru Agricultural University. U. of I. graduates in entomology and other specialties are located there as well as at India Agricultural Research Institute, New Delhi.

Funding was obtained for two new facilities in Economic Entomology, including greenhouses and temperature controlled rearing rooms for mass rearing of insects. The new facilities provide space for an additional 8 to 10 graduate students.

I entered the ranks of the non-professional beekeepers and inherited all the public relations problems associated with this backyard hobby. As I was in India all summer, my wife and family automatically became beekeeping enthusiasts.

#### Dr. Ellis G. MacLeod

This year Ellis attended the meeting of the Soc. cell Biology. There was also some extensive travel to do. Summer field work in Maryland and Florida to secure chrysopid species to bring into lab culture. He made a short visit to Harvard for a Ph.D. exam of a former graduate student and to do some taxonomic work at the Museum of Comparative Zoology.

Ellis' current research is (1) continuing studies on the environmental control of diapause in a number of species of the Chrysopidae and on the chromosome cytology of the North-American species of this family and (2) "Classical" (i.e. old-style <u>not</u> epoch-making) revisionary studies on the subfamily taxonomy of the Berothidae.

There were a number of visitors to his lab this past year: Dr. Philip A. Adams of California State University at Fullerton, California (a fellow neuropterist); Dr. Howard E. Evans of the M. C. Z. of Harvard University (a specialist on the Hymenoptera and an old friend).

#### Dr. Vern G. Milum

Only a very brief report from Dr. Milum (retired) this year. He took an alumni tour to Hawaii in March, 1967. He also spent a week in southern California and a week in Aspen, Colorado, with his sons. At this stage of life what could be more pleasant than traveling about the world and enjoying one's family.

#### Dr. H. H. Ross

Travelwise, the H. H. Rosses were pretty much on a local basis, radiating from Urbana to Louisiana, New York, Washington, and other points east. In the research area, Dr. Ross is still trying to make 100,000-year-old thermometers out of the winter stoneflies, by teasing hints out of them concerning climates during the ice ages. Exciting new clues were furnished by Hugh Cunningham from his beloved Alabama. Considerable progress was made on both the caddisfly evolution and the grassland leafhopper projects. The latter studies were greatly aided by Dr. W. J. Knight, leafhopper specialist of the British Museum, who was a Visiting Scientist at the Natural History Survey for three months last summer. He and Dr. Ross laid the ground work for a world revision of some of the groups of pertinent genera of grassland leafhoppers. By extreme good fortune, ex-Illini Dr. R. F. Whitcomb is now cooperating on the project. Bob is at present with the USDA Pioneer Research Laboratory at Beltsville, Maryland, working on leafhopper vectors of plant viruses.

#### Dr. Richard B. Selander

Dr. Selander continued his experimental studies of the environmental control of ontogeny of blister beetles which occupied most of his time during the past year. Field work was necessarily curtailed, although he did manage to work in a two-week collecting trip in the Davis Mountains of western Texas. He also found time to lay in copious amounts of sod around their lovely new home with the help of oldest son Mike.

# Dr. James G. Sternburg

In late June and early July, the Sternburg family vacationed at Glen Lake, Michigan, one of the most scenic areas of that state. The weather was pleasant but cold; much too cold for swimming in fact. However, the fishing was good, and our 10 year old, Tom, caught several nice bass spin-casting. These were his first and certainly a thrill for him. Everyone had fun at Sleeping Bear Dunes, but no one enjoyed Lake Michigan and its beaches because of the enormous number of dead fish (alewives) washed up on the shores from the southern tip up to the Straits of Mackinack. On the return trip home, we went to Sault Saint Marie, pent the night in Canada, and then came down the Wisconsin side of the lake in the rain.

The rest of the summer was spent in Urbana, more or less struggling with the mess created by a bit of remodeling, which wasn't finished until September. Then the battle of the lawn began, which will be continued this spring.

Current research concerns the physiological effects of DDT and organorhosphates on the nervous system.

#### Dr. G. P. Waldbauer

Work on the consumption and utilization of food by stored grain insects is going well. Dr. Anoop Bhattacharya, a research associate from India, is beginning work on the biochemical aspects of food utilization and John Ameel, a graduate student, has mastered the art of using our new micro-bomb-calorimeter and has begun a study of the utilization of food by the cadelle.

Jim Sternburg and I are still interested in the biology and behavior of Cecropia. We are now particularly interested in diapause phenology. A graduate

student, Aubrey Scarbrough, is working on the behavior involved in the selection of a spinning site and the spinning of the cocoon. Fortunately the winter of 1967-68 is offering unusually good collecting for cecropia cocoons. We now have collected almost 900 in the C-U area.

One of my main efforts during the past year was the completion of a review article on the consumption and utilization of food by insects which will appear in volume 5 (1968) of Advances in Insect Physiology.

Last June Stephanie spent three weeks in France. Shortly after her return the whole family spent two exceptionally pleasant weeks on Glen Lake in Leelanau County, Michigan. From there we drove to Montreal to spend a week visiting Expo-67. While the rest of the family returned to Illinois our oldest daughter Gwen (age 10) flew to Paris to spend six weeks with her 10 year old cousin and her family. Her trip included a stay on the Italian Riviera and visits to Pisa and Milan.

The whole find is cucited about the start of construction on our new home which will be on the edge of a small lake just outside the city limits of Champaign. We hope to move in next summer and look forward to the swimming, boating and fishing. With this kind of an announcement the entire department will be out to visit.

#### Dr. Judith Willis

Judy is continuing her diligent activities in the Honors curriculum in the School of Life Sciences. She has been instrumental in maintaining the excellence in the Honors Biology Curriculum and is an enthusiastic and dedicated teacher. This past year her research has been on the source and hormonal regulation of curricular proteins. This year Judy was one of the co-recipients with three of her colleagues here at the University of a grant from the Child Development Section of the U.S. Public Health Service to study the cellular and comparative biology of aging. This is a four-year grant for some \$246,000. Judy's particular area is to study the effects of juvenile hormone and specifically to work on aging in insects.

Judy and her husband, Dr. John Willis of the Physiology Department, are looking forward to sabbatical leaves next year. Judy will be working with Dr. Weis-Fogh in the Department of Zoology at Cambridge University, Cambridge, England, and John

will be working with Dr. Peter Baker, Department of Physiology, at Cambridge University. They also plan to spend part of their time at Plymouth at the Marine Biological Station. They will be leaving this September for their sabbatical year. We wish them a bon voyage and look forward to their return armed with exciting new research interests.

# NON-ACADEMIC EMPLOYEES

# Eloise Duvall

Eloise continues to do her excellent job in rearing our departmental insects. She is in charge of all of the rearing and maintenance of all of the experimental animals. She does a tremendous job and without her skill and faithfulness to duty we would all be at a standstill. Eloise bettered her classification this year by becoming a Natural Science Laboratory Attendant III. Congratulations to her! She is very deserving of this new title.

# Judy Michael

Judy joined our secretarial staff in August of this year. She is a clerk-steno III and has proved very competent in her new capacity. Judy was with us earlier on two different occasions as an Illini Girl until we convinced her that she really wanted to work full time. Judy's husband is a student at Parkland Junior College and they have one son, Jeff, 2 years old.

# Ruth Plymire

Ruth was promoted to an Administrative Secretary in 1967. Along with her office duties her day includes a Spanish 104 class 4 afternoons a week. Her husband, Bill, is coaching cross country, sophomore basketball and track at Urbana High School. They have 3 daughters, Deanna 9, Pat 7, and Teresa 3.

#### Alice Prickett

Alice was appointed this year as a Scientific Artist in the department. She continues to prove her exceptional qualities as a fine artist. She is busy moving from room to room working for Drs. Selander, Horsfall and Balduf. We are also very pleased that she consented to do the cover of this year's Newsletter.

### Terry Ransom

Terry is completing his second year with our department as our equipment attendant. He has his hands full running to Chem Stores, Office Supply, filling water bottles, keeping track of equipment, checking out orders, etc. Terry is married and has four children.

### Jean Reeves

Jean joined the staff of Dr. Horsfall's lab this year and is doing an excellent job as a histology technician. Jean is a NSLA III.

### Shaw-mei Yeh

Shaw-mei Yeh began her position this year in Dr. Friedman's laboratory. She is a NSLA III and is doing a very fine job running his lab and helping with his experimental program.

# Barbara Zegart

Barbara began working this year as a technician in Dr. Larsen's lab doing electron microscopy. She has also learned to run the new scanning electron microscope. But alas, her husband has been transferred and she is leaving for Hawaii this spring.

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  In <u>The functional organization of the compound eye</u>, ed. by C. G. Bernhard, Pergamon Press, Oxford, N.Y., pp. 377-397.
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#### ALUMNI NEWS .

As always we are grateful for the response of the alumni in sharing their activities, publications and points of interest which have concerned them during the past year. This year we had fewer alumni passing news on to you. Although we did hear from some we have not heard from in the past we would like to reiterate that it would be good to hear from all of you as often as possible so that your colleagues past, present and future might keep track of your activities and travels. Many of the alumni have shared their appreciation for the Newsletter and also interest in its continuation and their feeling for a desire to hear from more of you regularly so that they might keep track of your activities and whereabouts. We appreciate these words of encouragement and will continue to put out the Newsletter on an annual basis.

As in past years we have included in the back a perforated information sheet which we would like you to fill out and return to us. If you continue to indulge in this yearly ritual the sharing of news with each other will become a standard and enjoyable part of the Newsletter. Last year we suggested the possibility of a reunion of the graduates of the entomology department to coincide with the dedication of the new building which came during the centennial year celebration of the University. Although there was considerable affirmative response for this project it had to be abandoned due to some technical difficulties. We are sorry that we are unable to set up a special centennial reunion for all of the former members of the department. However, it has been suggested by some of the alumni that we might have an Illinois breakfast or dinner this year at the annual Entomology meetings. We shall attempt to make these arrangements so we might all get together at the meeting and enjoy an hour or two of fellowship and have the opportunity to renew old acquaintances.

### Angel Berrios-Ortiz

The only word we have from Dr. Ortiz this year is his address and the information that he is still with the Biology Department, C.A.M.A., Mayaguez, Puerto, Rico 00709

### Lusettie Blevins

I enjoy my garden and flowers and although my garden was late, planted June 15, it produced all and more vegetables than I could use. I still have two friends living, one in Urbana and one in Champaign, which I visit occasionally. The campus is surely different from what it was in 1925. I spent six weeks in California last winter and visited my friends and relatives. I saw Mrs. C.L. Metcalf and Mrs. Robert Metcalf. I enjoy the newsletter although I know very few of the names mentioned. I am always glad to hear what Dr. Balduf is doing.

# Murray S. Blum

From Murray the following activities: He is working on the chemistry and functions of pheromones (Brazilian bee heads look good this year); also the chemistry of insect spermatozoa; and the hymenopterous poison apparatus. He is working on insect olfaction; insect defensive secretions; insect lipid chemistry. He is working on the chemistry of the rodentian sternal gland secretion which is a joint project with the University of Chicago.

Most of 1966 was spent in Bristol, England, in the laboratory of H.E. Hinton. "We are now broke and we will probably collect seashells (not blister beetles) in Texas in '67."

The Newsletter is first rate! (Bless you)

#### Manfred Brust

Manfred shares with us his research: (1) Effects of therapeutic doses of ultrasound on skeletal muscle; (2) Contractile physiology of isolated human skeletal muscle; (3) Basil physiology of muscular dystrophy and other myoppathics.

In the past two years Manfred has published several articles on vertebrate muscle physiology.

This past year included the following recent travels: Late summer (August) 1966: by car to Denver, Royal Gorge, Mesa Verde National Park, Navajo Reservation, Bryce Canyon, Zion National Park, Hoover Dam, L.A., and San Francisco. Attended and gave paper at Annual Session of the American

Congress of Physical Medicine and Rehabilitation in San Francisco. Then we flew back to New York (the whole family went). Gave paper at FASEB meeting in Atlantic City, New Jersey, in April 1966. Took family to Sarasota, Florida for 10 days in February 1967.

The most current family data is the arrival of Jonathan Eli, June 10, 1966. That makes 2 boys and 1 girl, and the end.

# Robert W. (Bert) Clegern

Bert reports that currently he is fairly far afield from his stomping grounds of Entomology, in that he is teaching Aviation Physiology to the student pilots at Vance AFB. He is keeping his eyes and net open for Oklahoma insects to add to his collection, and he hopes to do some basic research on the effects of high altitude on <u>Tribolium confusum</u>, if he finds the time.

He has been to San Antonio, Texas, for USAF training schools (Brooks and Randolph AFB's); Denver, Colorado, for pleasure; Rantoul, Illinois (June) for USAF training school (Chanute AFB); and Homestead AFB, Florida, (July) for USAF Deep Sea Survival training.

In the additions to the family he writes, "None as yet, but I'm now an uncle!"

P.S. He's applied for further graduate work via the AF, but no news expected for another month yet. Also tell Dr. Waldbauer that he'll get those mimicry specimens to him if he has to bring them in person.

## Paul A. Dahm

A very short note from Paul Dahm stating that he is working on insect biochemistry and metabolism of insecticides.

#### Robert F. Harwood

Bob's current research is on photoperiodism and circadian rhythms in the codling moth and mosquitoes. He is also working with Dr. James on the next revision of Herms' Medical Entomology.

His recent travels include his just returning from sabbatical at Princeton University. The pleasure aspect of the return trip concerned camping in the Rocky Mountain National Park and Yellowstone National Park, both accompanied by lots of rain and hail!

He states, "Keep up the newsletter - I enjoy it immensely and wish more people would contribute."

#### John Paul Kramer

Dr. Kramer sent the following complete report of his activities: His researches continue on microsporidians and microspodidian diseases of insects. He has several graduate students working with him in insect pathology. For the last year and one-half he has served on the Study Section for Tropical Medicine and Parasitology at NIH. He finds that evaluating grant proposals is harder than writing them! Other former Illini on this study section include Bob Traub and Ken Knight.

His recent travels include being in Japan for an NSF-sponsored symposium on the microbial control of insect pests at Fukuoka, April 16-30, 1967. He also visited the Universities of Kyushu, Kyoto, and Tokyo. He saw "honorary Illini" Dr. Toshio Ito at the Sericulture Experiment Station in Tokyo who has pleasant memories of his stay in Dr. Fraenkel's lab.

John still has one fine wife and two fine children. He states: "I enjoyed getting the Newsletter. Keep up the good work!"

# Robert E. Lewis

Bob tells us his current research and recent publications are still the fleas of the Middle East. Presently he has a two-year Office of Naval Research grant to study the ectoparasites of Nepalese birds and mammals. He has recently put out five or six papers on fleas and their hosts.

His recent travels include Turkey, Syria, Iraq, and Jordan on field trips.

Also a short trip to the USA last fall. Also he made a visit to Cyprus for Easter.

In the additions to the family column - a brave man admits: We now have two Siamese cats. Gasp!

Concerning the Newsletter: "This is a fine piece of work. Hats off to the editor!!!!!!!" (Hats off to you too!!)

### Jai K. Nayar

Dr. Nayar reports his current research and recent publications are on growth and development of mosquito larvae, and biological rhythms in mosquitoes.

His recent travels have been during the summer of 1967. He, along with his family, spent a month in Germany and England. It was primarily a vacation trip but he took time out and visited several laboratories in Germany and University of Cambridge in England. He also attended Entomological Society of America meetings in New York.

He states concerning the Newsletter: "It is nice to know what other Alumni are doing, but I think it would be beneficial to all concerned if we could meet sometime. I think that some sort of program can be arranged during the annual meetings after ESA, which most of the Alumni attend." (A good idea -- we could at least have an Illinois breakfast.)

#### Franklin C. Nelson

Franklin retired January 1957 from Std. Oil Co. (New Jersey) and went into Real Estate and Insurance. He is not too active now as it limits his travels a little too much. Our major business activity is in a Broker's office following the stock market. (A nice way to grow old rich.)

This past year we took a trip through Indiana, Illinois, Kentucky and down to Florida in September. We purchased a new home and plan to move to Florida in late July and keep that as home base, at least in the winter months.

Concerning the Newsletter: "I thoroughly enjoy the Newsletter and hope you can continue to publish. It is about the only way to keep up on former teachers and students. I was surprised to hear that Dr. Glasgow had passed on. I would be interested in what happened to George King as I was there with him and lost track of his whereabouts. I would like to hear when the date is set

#### Carl Mohr

Carl now is retired but keeping busy. He is currently doing research on sectors of activity, topography, and parasitism in home areas of small mammals, and chiggers. His recent publications - the last one to date, not reported last year, "Calculation of area of animal activity by use of median axes and centers in scatter diagrams." Researches in Population Ecology VII: 73-86, 1965.

His recent travels this year were limited with trips to Clearwater, Florida to collect chiggers. (On yourself or in vials?)

Since the publication of the departmental Newsletter last year it has come to our attention that the following entomology alumni have passed away:

Dr. George J. Spencer (1924) died 24 July 1966.

We have also learned with sorrow of the death of one of our colleagues, Dr. George Y. Bijjani. We extend our deepest sympathy to the family and share with all of you the following obituary notice:

"Dr. George Yousef Bijjani, 1004 Rural St., head of the Biology Department of the College of Emporia, died Sunday afternoon, July 17, 1967, after suffering a heart attack in Springfield, Illinois.

Dr. Bijjani had been head of the Biology Department at the College of Emporia since 1957. He also was a Presbyterian minister and for the past 10 years had been pastor of the Presbyterian Church in Howard. He had served as interim pastor of several other churches in Kansas, among them the Presbyterian Church in Holton.

The son of Yousef Abdullhad and Mithmne Bijjani, he was born May 10th, 1907, in Kahale, Lebanon.

A graduate of Gerard Institute, a Presbyterian mission high school in Sidon, he attended the American University in Beirut, Lebanon, for a year, then transferred to Alma, Michigan, College, where he received his Bachelor of Arts degree in 1934. His Master of Science degree and his Doctor of Philosophy degree were awarded from the University of Illinois.

After teaching in the Bishop's School, Amman, Jordan, from 1937 until 1939, he was a member of the faculty of the American University in Beirut until 1947, when he returned to the United States. Before coming to Emporia, he taught at the University of Dubuque, Iowa, Monticello College in Illinois and Westminster College in New Wilmington, Pa. Doctor Bijjani was a member of several professional organizations, among them the American Entomological Society and the American Association for the Advancement of Science.

George Bijjani was married on June 26th, 1940, in Beirut, to Anabel Elizabeth Clark, who survives. Other survivors are three daughters, Grace Bijjani, of Tama, Iowa, and Alice Adel and Sylvia Ann Bijjani, of the home, and two sisters, Saada and Miladeh Bijjani, of the home.

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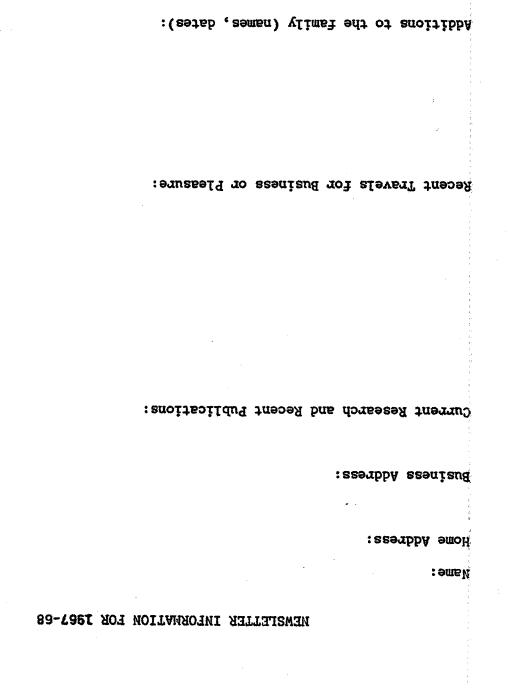
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