

METALEPTEA

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A News Forum for Acridologists
and Orthopterists

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Message from the Editor

I have received numerous favorable comments about the new format of *Metaleptea*. Most of the comments were to the effect that it is more readable, more attractive, and generally more informative. I hope to improve upon the content of future issues, with articles of wider interest to the entire community of Orthopterologists.

I have received so many responses to a request for information from Latin American acridologists that I have decided to continue the article on Acridological Research in Latin America in the next issue. Several researchers have still not responded, but I believe I will receive the information soon.

As always, I welcome suggestions, and again request that you keep sending news, information, biological notes, short articles, anecdotes, grasshopper line drawings, cartoons...anything you think our membership could use or enjoy.

David A. Nickle
Editor, PAAS

Presidential Report

By far the most pressing Society business has been the arrangements for the coming Saskatoon meetings. I am pleased to report that the Saskatoon group is doing a fine job in developing an interesting program, and I look forward to an enjoyable and informative meeting.

The Council, consisting of President Elect V. Vickery, Past President R. Ronderos, North American Representative J. Onsager, South American Representative F. Cerda, Representative at Large H. Knutson, the Executive Secretary S. Gangwere, and I will meet in special session on July 29th before the start of the meetings. Among the topics we shall address will be expansion to an international level, future meeting site, the Occasional Papers, student exchange program, etc.

Regarding the expansion of the Society to a global status, it was apparent from the information received from the membership that we should do this in a way that would retain the original Pan American identity. This presents some difficulty, particularly regarding an appropriate name for our Society, since "Pan American" does not indicate world status. Changing representation on the governing board is less of a problem because we could change the constitution to accommodate representation from Europe, Australia, and other areas as needed.

In any event, we welcome suggestions from members on any of these or other concerns. In the meantime, I hope you will make every effort to attend the Saskatoon meetings.

John E. Henry
President, PAAS

Executive Secretary's Report

I have just returned from my annual 4-month stay at Wayne State University's Northwoods Biological Station, during which, as usual, I was able to dispatch little PAAS business except to acknowledge letters, membership applications, etc., and to note that any requests made of the Secretariat would be honored upon return to campus in Detroit. This report finds me just past that stage. I have banked accumulated funds, handled publication requests, acknowledged receipt of official letters, completed forms and questionnaires relative to prior Latin American Training Grants and to the forthcoming Saskatoon Meeting, and put the Society files into order. I now have a moment to appraise you of PAAS's current business status.

Our membership solicitation has been fruitful (see the attached list of new members), and this activity is on-going. However, the job of member solicitation cannot be done by one person or one committee alone. It requires

your help also, hence the enclosed Society brochure, which I ask that you give to an interested colleague. Or, if you wish, kindly let me have the names and addresses of any individuals or institutions that you think should receive a formal membership invitation. I shall be delighted to contact them.

Dr. Al Ewen, Chairman of the Site Committee, and I have been looking into the possibility of a 3rd Latin American Training Project similar to our earlier programs of that type. I have mailed a detailed questionnaire to all former grantees with a request for certain data such as will be useful in preparing a proposal to be submitted by year's end. An earlier proposal has already gone out from Dr. Ewen's office.

The Elections Committee has made its nominations for officers for the 1985-1987 Term. The nominated individuals have been contacted and have indicated that, if elected, they will serve. They await your consideration of their candidacy. Kindly complete the enclosed ballot and remit it to the Secretariat at your earliest convenience.

The Governing Board will soon consider possible amendments to the Constitution and By-Laws so as to implement our new global status at the same time as an effective, up-to-date streamlined society operation is assured. Your input into this effort is requested. Please be in touch with ideas that should be put into amendment form. The existing Constitution and By-laws may be consulted in *Metaleptea* 5: 2.

The PAAS bank account balances as of Sept. 21, 1984, are \$1,763.24 (checking account) and \$1,111.12 (savings account), for a total of \$2,874.36. There are no outstanding liabilities. Please remember that our *Proceedings* (in press) of the Maracay Meetings alone will cost almost that much, so I urge you to pay any outstanding dues promptly (see dues enclosure).

I shall be on a research trip in Spain and, hence, away from the Secretariat during mid-December through mid-February.

S. K. Gangwere
Executive Secretary, PAAS

IMPORTANT Final Notice

The IVth Triennial Meeting of the PAAS will be held in Canada on the campus of the University of Saskatchewan at Saskatoon. The meetings are scheduled for Tuesday, July 30 to Thursday, August 1, 1985, inclusive. Delegates should plan to arrive on Monday, July 29 and leave during the morning of Friday, August 2. PLEASE NOTE: This is a correction from the dates listed in the Preliminary Notice on page 4, vol. 6(1) of *Metaleptea*. Extension of residence at the University can be arranged for those who desire it.

Accommodation (incl. maid service) and meals will be available on the campus at the approximate cost of \$43.50 Canadian funds per person/day for a single room and three meals. Double (sharing) accommodation will cost approximately \$38.25 per person/day. All meeting sessions will be held on campus.

Collecting trips will be organized during the conference (one afternoon - river and stream and pasture/rangeland areas near Saskatoon) and following the conference (two-day trip to the Big Muddy valley area - species and habitat diversity) if enough delegates express interest.

Saskatoon is a beautiful city of approximately 160,000 persons. It is served daily by two national airlines (Air Canada and Pacific Western) with flights from all major cities in Canada. Also there is a daily flight from Denver, CO, U. S. A., via Frontier Airlines. Expect the weather to be warm and dry during July and August.

There will be three general symposia, tentatively arranged as follows:

- 1) Stability and diversity of grasshopper species in grassland communities
- 2) Endocrine aspects of reproduction in grasshoppers and locusts
- 3) Current topics in acridid systematics

Also, if there is enough interest, there will be two round table discussion groups.

The symposia will be held during the mornings of Tuesday, Wednesday, and Thursday. Submitted papers will be presented during two of the afternoons and one collecting trip will be scheduled for the third afternoon.

Deadline for submitted papers has been set for June 1, 1985. Please consider this notice as the final call for submitted papers.

Cedric Gillot is the Program Chairman for the meetings. The following is a tentative list of speakers and topics for the three symposia:

Stability and diversity of grasshopper species in grassland communities

Anthony Joern (U. S. A.). *Resource partitioning by grasshopper species in a grassland community.*

Jerry Onsager (U. S. A.). *Stability and diversity of grasshopper species due to spatial heterogeneity.*

Paul Reigert (CANADA). *Stability and diversity of grasshopper species due to perturbations.*

Ricardo Ronderos (ARGENTINA). *Stability and diversity of grasshopper species due to temporal heterogeneity.*

Chairman M. K. Mukerji (CANADA).

Endocrinology of reproduction in Acrididae

- B. G. Loughton (CANADA). *Endocrine-mediated aspects of male reproductive physiology.*
 M. P. Pener (ISRAEL). *Endocrine control of reproductive behavior.*
 S. S. Tobe (CANADA). *Endocrinology of reproduction in the female acridid.*
 Chairman C. Gillott (CANADA).

Current topics in acridid systematics

- Keith Mc.E. Kevan (CANADA). *The rationale for a modern classification of orthopteroid insects.*
 Alejo Mesa (BRAZIL). *The value of cytology in orthopteroid taxonomy.*
 David Nickle (U. S. A.). *Classical museum taxonomy and its importance in orthopteroid taxonomy.*
 Daniel Otte (U. S. A.). *The role of sound in orthopteroid taxonomy.*
 Chairman V. R. Vickery (CANADA).

Two round-table discussion groups will be scheduled if enough members indicate interest:

1. *Locust and grasshopper control methods in Third World countries.*
Organized by John Henry (U. S. A.)
2. *Acridid rearing methods.* Organized by either Al Ewen (CANADA) or S. K. Gangwere (U. S. A.).

Please address all correspondence to:

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 Local Chairman, PAAS
 Research Station, Agriculture Canada
 107 Science Crescent
 SASKATOON, Sask. S7N 0X2
 Canada

Acridological Research in the United States and Canada

Part II

McGill University,
Ste. Anne de Bellevue, Quebec, Canada

Lyman Museum

D. K. MCE. Kevan: Revision of various pyrgomorphid genera of the world. Compilation of world anthology of verse on orthopteroid insects. Various other ethnoentomological aspects of orthopteroid insects. Also involved with Canadian Neuroptera, Thysanoptera, Myriapoda, etc.

V. R. Vickery: Systematics of Phasmatoptera, Mantidae, and certain crickets of Baja California, Mexico. Continuing work on northern nearctic orthopteroids, especially subarctic species and populations. Comparison of subfamilies Oxyinae and Leptisminae. Also involved in research in Apiculture.

C. C. Hsiung: Biology of certain tropical stick insects. Translation of Chinese orthopteroid verse, in collaboration with D. K. K. Revision of Pyrgomorpha (with D. K. K.).

Department of Entomology

J. E. McFarlane: Continuing research on physiology of *Acheta domesticus*.

R. Koshnaw: (M. Sc. candidate). Comparative morphology and development of genitalia in Tetrigidae.

G. Pelletier: (M. Sc. candidate). Interaction between grasshoppers and other fauna under different ecological conditions in S. W. Quebec.

Department of Biology

P. S. Pollack: Physiology of stridulation of crickets.

D. Roff: Effects of various factors upon wing length in crickets.

Kansas State University,
Manhattan, KS

The phytochemicals and physical interactions of monophagous and polyphagous grasshoppers with host and non-host plants are being studied.

T. L. Hopkins, Michael H. Blust, and Saad Ahmad. We are studying the role of phytochemicals on stimulating or inhibiting orientation and feeding. An electronic device to record feeding of grasshoppers on their host plants has been developed. The ability of grasshoppers to discriminate among phytochemicals is analyzed, both behaviorally and electrophysiologically. How grasshoppers detoxify plant toxins by microsomal oxidases and conjugating enzyme systems is a part of the research toward more completely understanding adaptations of grasshoppers to utilize certain plants.

Herbert Knutson and Sherilyn G. F. Smith. (Knutson has retired and works only part time, and Smith is now at Skidmore College, Saratoga Springs, N. Y.) Studies on the effects of plant physical factors have been directed primarily to the role of non-glandular trichomes that make up the leaf pubescence on *Artemisia ludoviciana* as feeding stimulants or deterrents to adapted and non-adapted species of grasshoppers [Knutson and Smith]. Variations in morphology and coloration among grasshoppers have been related to geographical distribution, seasonal occurrence, and plant communities [Smith].

Herbert Knutson. Field studies on feeding on various plants have been continued. Differences in field and laboratory toxicity of certain insecticides to certain economic species of grasshoppers have been determined, contributing toward better pest management practices in grasshopper control.

William A. Ramoska. Epizootiology studies with the grasshopper pathogen *Entomophaga grylli* pathotype 2 are currently being conducted. The aspects being investigated include the initiation and maintenance of an epizootic, the sublethality of the organism and its pathobiology using *Melanoplus differentialis*. A new facility devoted to this research and other pathogens is currently under construction.

University of Southwestern Louisiana Lafayette, LA

The Department of biology has two faculty members with research interests related to the Orthoptera.

Dr. Matt E. Dakin is working on the systematics of the Acrididae. His current research is the relationship and distribution of the subspecies of *Melanoplus femurrubrum* (DeGeer). He also maintains the Univ. Southwestern Louisiana insect collection which currently includes approximately 5,500 specimens of Orthoptera.

Jeffery H. Spring is studying the hormonal control of ion transport in the hindgut of grasshoppers and crickets.

Acridological Research in Latin America Part I

Universidad de Buenos Aires
Laboratorio de Genética
Buenos Aires, Argentina

Current acridological research involves cytogenetic studies on several species of Acrididae. These investigations include population analysis of distribution and affects (at the individual and population levels) of different chromosomal rearrangements, research on behavior of B-chromosomes in natural populations as well as on their effects of fertility, recombination, etc.

Claudio J. Bidau is presently studying the population cytogenetics of *Dichroplus pratensis* (Melanoplinae) from Argentina, where a very complex Robertsonian polymorphism exists. The effects of the different chromosomal fusions on recombination and the interaction of different polymorphic systems in presumed hybrid zones are being analyzed in order to determine the adaptive role of the fusions in this species.

Claudio Bidau is also analyzing mechanisms of chiasma localization and ditactic bivalent formation in *Scyllina signatipennis* and *Sinipta dalmani* (Gomphocerinae). Studies on grasshopper B-chromosomes of *D. pratensis* and *Metaleptea brevicornis* (by C. J. Bidau) and *Cylindrotettix obscurus* and *C. santarosae* (by Viviana Confalonieri and C. J. Bidau) are in progress. Special interest is directed at the effects of these chromosomes on recombination and abnormal sperm production.

Pablo C. Colombo is currently working on cytogenetics of natural populations of *Leptysmia argentina* (Leptysmiinae), a species with a very complex system of supernumerary heterochromatic segments as well as a centric fusion polymorphism.

Instituto de Ecología, A.C.
Centro Regional Norte Arido
Durango, Mexico

Las investigaciones realizadas en el campo de la Acridología por el Instituto de Ecología se han llevado a cabo en 2 regiones de la República Mexicana, en la región de Laguna Verde, Veracruz y en la Reserva de la Biósfera de Mapimí, Durango.

La primera se efectuó en 1973 dentro del Proyecto "Estudios Ecológicos del Area de Laguna Verde, Veracruz" del Programa Nacional Indicativo de Ecología

Tropical, CONACYT. Patrocinado por Comisión Federal de Electricidad, México y fue llevado a cabo por el Dr. Marius Descamp del Museo Nacional de Historia Natural, París, Francia. En dicho estudio se analiza la composición faunística y afinidades; las poblaciones de acrididos en diversas formaciones vegetales, además de una revisión sistemática y características ecológicas de las especies y un análisis de la reducción de los órganos del vuelo.

Los resultados de dicho estudio se encuentran publicados en Folia Entomológica Mexicana Núm. 31-32, Octubre de 1975.

La segunda se inició en 1980 y se continúa hasta la fecha en la Reserva de la Biósfera de Mapimí, por el Biol. Eduardo Rivera García, con ayuda en la identificación del material colectado del Dr. Descamps. Dentro de este estudio se cuenta con la lista faunística de acrididos, distribución espacial, distribución estacional y distribución a lo largo de un gradiente topográfico, los resultados se encuentran publicados en "La Acridofauna de la Reserva de la Biósfera de Mapimí, Durango, México". Tesis profesional para obtener el título de Biologo, Facultad de Ciencias UNAM, 1984.

Estos estudios se han continuado a la fecha cubriendo la parte de relaciones de vegetación y clima con la comunidad de acrididos en la región.

Sub'programa de Sanadad Vegetal, Torreon, Coah., Mexico

PLAGAS DEL GUAYULE *Parthenium argentatum* GRAY, BAJO CONDICIONES NATURALES Y DOMESTICACION EN LAS ZONAS SEMIDESERTICAS DEL ESTADO DE DURANGO

Este trabajo de investigación, fué soportado por La Universidad Juárez Del Estado De Durango y La Comisión Nacional De Zonas Arida y estuvo incluido dentro de un programa general de "Domesticación de guayule", con una duracion de 2 años.

Los sitios naturales de muestreo estuvieron localizados en los Municipios de Mapimí y San Pedro del gallo, Durango, y en guayule bajo condiciones de domesticación en la Escuela Superior De Agriculturay Zootecnia de La Univ. Juárez del Edo.de Dgo.

El objective de este trabajo, fué el de lograr la identificación de los artrópodos asociados con guayule, densidad de población y hábitos de los mismos, encontrando los siguientes Orthopteros:

En sitios naturales de guayule:

a). *Diapheromera femorata* Say (Phasmatidae). Se localizaron poblaciones abundantes, cuya densidad promedio fluctuó de 10-15 individuos por planta; causa pocos daños y se observaron defoliaciones en mesquite, huizache y

gobernadora.

b). *Yersiniops sophronicum* Rehn and Hebard (Mantidae). Se localizaron poblaciones sumamente incipientes.

c). *Brachystola magna* Girard (Romaleinae). Prefiere pastos, pero ocasionalmente se le detecta sobre guayule, no provoca danos de consideración y alcanza poblaciones de 1-2 individuos por planta.

d). *Phrynotettix robustus* Bruner y *P. thsivavensis* Haldeman (Acrididae). Ambos se alimentan sobre guayule sin causar daños de consideración; se observaron de 1-5 individuos por planta.

e). *Hadrotettix trifasciatus* Say (Acrididae). Es común encontrarlo en guayule y vegetación asociada; detectándose de 1-3 individuos por planta. Tiene el hábito de copular sobre esta planta, es muy ágil y temperaturas de 10° ó menos lo inactivan en un 90%.

f). *Dichopetala brevihastata* Morse (Phaneropterinae). Intimamente asociado con guayule; se encontraron densidades de 3--8 individuos por planta. Se observó alimentándose del foliaje pero son pocos los daños provocados.

g). *Scuddería mexicana* Saussure (Phaneropterinae). Se encontró en bajas densidades, no observándose daños apreciables.

En guayule en domesticación:

a) *Hadrotettix trifasciatus* Say (Acrididae). Se le observó alimentándose de plántulas, sin causar daños apreciables. Se densidad alcanzó de 1-3 individuos por planta.

La mayoría de los Orthopteros colectados en este estudio, presentan similitud respecto a su distribución, densidad y fluctuación de sus poblaciones en las áreas naturales y su abundancia fué más notoria del mes de Julio a Octubre.

Ing. M. C. Jose Alonso Escobedo

Anteriormente Secretario General y Maestro Investigador de la Escuela Superior de Agricultura y Zootecnia de La U. J. E. D.

CHAPULINES DE AGOSTADEROS DEL NORESTE DE MEXICO (DURANGO Y COAHUILA)

Año tras año, los agostaderos de las zonas semiáridas del Noreste de México, situadas en los estados de Coahuila y Durango se ven atacados por un complejo de especies de chapulines que a su paso ocasionan pérdidas que van desde la competencia directa con los herbívoros de consumo humano, degradación de pastizales, diferentes grados de regresión sucesional, permitiendo algunos grados de erosión y en muchos casos incursiones en predios agrícolas cultivados, originando todo lo anterior un impacto negativo a la economía agropecuaria de estas regiones.

Tomando en cuenta la importancia que revisten los chapulines y de manera especial en años lluviosos, se optó por realizar este trabajo, donde se muestrearon de Junio a Octubre de 1978 1,500 km² de agostaderos en las zonas semidesérticas ya mencionadas para determinar los géneros de chapulines presentes, su abundancia, algunos aspectos ecológicos y su combate.

Dentro de este estudio se precisó el rango de hospederas y enemigos naturales de estos chapulines. Se identificaron 15 géneros de chapulines, de los cuales se consideraron de mayor importancia a *Boopedon nubilum* (Say) y *Brachystola magna* (Girard), ya que afectan directamente la producción de forraje en los siguientes tipos vegetativos dominantes.

Pastizal mediano abierto, pastizal mediano arbosofrutescente y matorral micrófilo. Así mismo, las poblaciones de estos dos géneros fueron más altas que las observadas para el resto de los géneros encontrados. Se efectuó una espolvoreación con máquinas terrestres de Paration Metílico al 2% en sitios con pasto abundante y arbustos, observándose a los 3 días un 90% de control y un 98% a los 8 días posteriores a la aplicación.

M. C. Jose Alonso Escobedo
M. C. Rene Elias Rodriguez Charua

Biological Control of Weeds Laboratory USDA, Buenos Aires, Argentina

Our investigations on grasshoppers were in the field of biocontrol, utilizing insects, parasitoids, and pathogens. Since 1973 several collections of grasshoppers were reared in central and northern Argentina; parasitoids were reared and shipped to ARS, Bozeman, MT. Regarding the pathogen work, this laboratory assisted with cooperative project between Dr. John Henry, Bozeman, MT., and Dr. Ricardo Ronderos, La Plata, Argentina, in field experiments to control grasshoppers in Argentina, using a *Nosema* pathogen in a bait. This help was discontinued in 1980, thus no investigation on grasshoppers has been made since.

Cordo, H. A. 1983. Endophytic oviposition of the neotropical hydrophilous grasshopper, *Stenopola pallida* (Acrididae; Leptysminae). Proc. 2nd Triennial Meeting Pan American Acridological Soc. Bozeman, MT, July 21-25, 1979. 249-251.

Universidad Nacional de la Plata La Plata, Argentina

En el ámbito de la Facultad de Ciencias Naturales y Museo de La Plata dependiente de la Universidad Nacional de La Plata se llevan a cabo estudios referidos a Acridios Neotropicales en dos laboratorios: División Entomología y Centro de Estudios Parasitológicos y de Vectores (CEPAVE).

El staff profesional interactúa en ambos laboratorios utilizando las facilidades con el objeto de realizar estudios sistemáticos, fisiológicos, de dinámica de poblaciones y entomopatógenos el que está integrado por los

siguientes profesionales:

Dr. Ricardo Ronderos
Dra. Norma E. Sanchez
Dr. Gerardo Liljesthröm
Lic. Carlos Lange
Lic. María M .Cigliano
Lic. Georgina C. Luna
Prof. Gustavo Rossi
Lic. María Laura de Wisiskcy

Estudios sistemáticos

Se realizan estudios en revisión de Melanoplinae, Tristiridae y Ommexechidae de la región neotropical. Actualmente se encuentran en marcha las revisiones de los géneros *Pseudoscopus* Rehn, *Neopedies* Hebard y nuevos taxa genéricos de las tribus Dichroplini y Jivariini a cargo de R. A. Ronderos. M. M. Cigliano, realiza en la actualidad el estudio taxonómico numérico de la familia Tristiridae.

Estudio de dinámica poblacional

N. E. Sanchez y G. Liljesthröm acaban de concluir un detallado estudio respecto del comportamiento poblacional de *Laplatacris dispar* Rehn en pasturas naturales de la Provincia de Buenos Aires; M. L. de Wisiecky realiza estudios referidos a la productividad de pasturas naturales en el este de la Provincia de La Pampa y estimaciones de consumo por parte de la especie de acridio dominante *Dichroplus pratensis* Bruner.

Entomopatógenos

El Lic. Carlos Lange encara el estudio de microsporidios patógenos y acridios y otros ortopteros encontrándose actualmente abocado a la caracterización de dos posibles nuevas especies del género *Nosema* aisladas de *Laplatacris dispar* Rehn y *Dichroplus elongatus* Giglio-Tos, así como también un nuevo microsporidio obtenido de *Gryllus laplatae*.

G. C. Luna estudia los gregarinomorfos de acridios de La Pampa húmeda.

Se encuentra en plena fase de evaluación tratamientos realizados con *Nosema locustae* realizados en los veranos 1980-1981 y 1981-1982 en la Provincia de La Pampa y Provincia de Chubut, experiencias estas que se realizan bajo la responsabilidad de R. A. Ronderos con la asistencia técnica de G. C. Luna y G. Rossi.

A partir del año en curso se ha podido ampliar el espectro de la investigación referidos a entomopatógenos gracias a la habilitación de nuevos laboratorios construídos para tal fin en el CEPAVE. Las investigaciones mencionadas se lle van a cabo mediante subsidios otorgados por el Consejo Nacional de Investigaciones Científicas y Técnicas, Comisión de Investigaciones Científicas de la Provincia de Buenos Aires y Convenios de Cooperación con el Rangeland Insect Laboratory del USDA y de la Secretaría de Agricultura y Ganadería de la República Argentina.

Gregory B. Mulkern 1931-1984

by

A.W. Anderson, R.B. Carlson, and J.T. Schulz .

Department of Entomology,
North Dakota State University
Fargo, North Dakota

Gregory B. Mulkern, Professor of Entomology at North Dakota State University, died on September 23, 1984, in Fargo, North Dakota. Dr. Mulkern was born in Tulsa, Oklahoma, on March 17, 1931. He enrolled at the University of Illinois in the Fall of 1949 and completed a B. A. degree in 1953. His graduate education was undertaken in Manhattan, Kansas, where he earned both his M.S. (1954) and Ph.D. (1957) in entomology from Kansas State University.

Greg joined the staff of the North Dakota Agricultural College (now North Dakota State University) on June 1, 1957, as an assistant professor in the Department of Entomology. His major research efforts resulted in an internationally recognized program involving grasshoppers and their host relationships. He interacted with acridologists over the world and participated in international forums on grasshopper/locust plant interactions in Argentina, England, the Netherlands, and Hungary. Greg was a member of the organizing committee for the Pan American Acridological Society that met in San Martin de Los Andes, Argentina, 1976, and served on its council as North American Representative for several years.

Greg was active in the affairs of the Entomological Society of America, particularly those of the North Central Branch. He participated on numerous Branch committees and served as Branch President in 1979-1980.

Greg was responsible for the Department's course offerings in morphology and physiology. He also taught a course on scientific writing and information retrieval. Students characterized Dr. Mulkern as a demanding and thorough teacher. He excelled in developing innovating ways of presenting difficult concepts.

Greg is survived by his wife, Joan, sons, Joseph, Terence, and Paul, and daughters, Kathleen, Rita, and Ann.

Greg was a constant source of advice and assistance to colleagues and students over the years. His dedicated but quiet approach to all he came in contact with will be missed but not forgotten.

Members' News

Ulf Carlberg: I continue with my research on biological studies on phasmatids. I am planning to present a lecture on the biology of *Extatosoma tiaratum* (MacLeay) this autumn at the Entomological Society of Stockholm.

G. G. Liljeström: Se realizan trabajos de campo y de laboratorio tendientes al conocimiento de aspectos relevantes de la dinámica poblacional de las especies más arriba mencionadas, tendientes a la elaboración de modelos predictivos fundamentalmente; aunque se disponen hasta el presente de datos de pocas generaciones, en particular de *L. dispar*. Con todo, se han detectado mortalidades causantes de grandes variaciones en la densidad de los estadios ninfales, así como otras, que actúan más tarde (sobre los adultos prereproductores) y son reguladoras. (Trabajo en colaboración con la Dra. Norma Sanchez).

Con referencia a la segunda especie, se estudia el accionar de sus principales enemigos: *Trichopoda giacomelli* (Tachinidae) y el microhimenóptero *Trissolcus basalis*, en cuanto a causas de mortalidad. Se está elaborando un modelo preliminar acerca de las variaciones numéricas de una población de *N. viridula* en áreas marginales, así como una evaluación de la invasión de zonas cultivadas. El objetivo final es la elaboración de pautas de control biológico.

Sra. Dra. Vicenta Llorente del Moral: Se realizan salidas al campo a sitios determinados de la prov. de Madrid y prov. limítrofes. Se están llevando a cabo estudios sobre biología de algunos ortópteros. En estos últimos tres años se han descrito tres especies y una subespecie nuevas para la Ciencia, así como la descripción, por primera vez, del macho de otra especie con nuevo status ya que se había descrito como variedad e incluso se dudaba de su validez.

Prof. Giovanni Sbrenna: I have been studying termite integument morpho-physiology.

New Members

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Mr. James V. Benschoter* e
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Mr. Brian L. Bret** e
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SUMMARY OF INSECT RECORDINGS IN BLOWS March 1984

1. Total no. of different species held in the collections (BBC, tape & published material) = 305* Broken down as follows: *excludes BM(NH) collect

Coleoptera	26	Lepidoptera	14	
Diptera	27	Odonata	1	
Dictyoptera	1	Orthoptera -Acridoidea	36	Almost 60% of species are Orthoptera
Hemiptera	33	Orthoptera -Grylloidea	86	
Hymenoptera	27	Orthop. -Tettigonioidae	52	
Isoptera	1	Unidentified spp.	1	

2. BBC discs and tapes: over 70 species, mostly British.
Includes detailed series of recordings of Honey Bee, *Apis mellifera*.
Limited selection of recordings for other species.

3. Tapes
163 recordings of 92 species, mostly European. Includes 100 recordings of
47 Orthoptera species. Many are well documented. Breakdown:

<u>Group</u>	<u>Recordings</u>	<u>Species</u>	
Coleoptera	13	11	
Diptera	8	8	
Hemiptera	14	14	60% are Orthoptera recordings
Hymenoptera	28	12	
Orthoptera: Acridoidea	44	16	
Grylloidea	17	6	
Tettigonioidae	39	25	

4. Published discs, tapes & cassettes: 75 contain insect recordings.
Over 540 recordings of 240 species from all over the world. Some discs are
devoted entirely to insects (see discography in Recorded Sound 85 (1984),
particularly Japanese publications. On some discs the insect is not
identified at species level. Most recordings are Orthoptera (70%) but
also Coleoptera, Cicadidae (Hemiptera), Hymenoptera, Lepidoptera and
Diptera.

5. British Museum (Natural History) collection of European Orthoptera: 383
recordings in total (filed in 3 batches); 377 recordings of Orthoptera,
one recording of a cicada (Hemiptera), and 5 recordings of 4 beetle
(Coleoptera) species.

Breakdown of Orthoptera:	cuts	spp.
Acrididae	225	42
Gryllidae	18	7
Tettigoniidae	138	37
Gryllotalpidae	<u>1</u>	<u>1</u>
	377	87

For Your Information

IF your studies involve the acoustic behavior of any animals the National Sound Archive's collection of wildlife sounds can probably help you. With over 10,000 well-documented tape recordings of some 2,500 species, and a duplicate of the entire BBC Sound Archives collection of natural history recordings, the Archive may have just what you need. Although the largest proportion are bird sounds, other classes of animals, from insects to mammals, are quite well represented. The scope is world-wide, but with particular emphasis on the Western Palearctic. The Antarctic, Oriental, Australasian and Afro-tropical regions are also well represented. There are interesting special collections held separately as complete copies:

- . Underwater mammal recordings by the late Prof. Poulter of California
- . Anatidae chick recordings by Dr. Janet Dear of the Wildfowl Trust
- . The European Orthoptera recordings of the British Museum (Natural History) made by Dr. Ragge and Jim Reynolds
- . The Papua New Guinea frog recordings of Prof. J. I. Menzies
- . The Chaffinch and other bird song recordings used by Prof. W.H. Thorpe for his classic study of bird song learning.

The deposit of other research collections is invited. Copies of nearly of all the recordings can be supplied for research, subject to the signing of an agreement limiting use and protecting copyright and to the payment of a modest service charge.

The Archive also holds a collection of over 1,000 published wildlife sound discs and cassettes from all over the world which can be listened to by appointment free of charge between 10.30 and 17.30 Monday to Friday, with late opening to 21.00 on Thursdays.

Discographies of mammal, amphibian, insect and some regional bird sounds have been published in the Archive's journal, Recorded Sound, and are available as reprints or back numbers. Other articles on wildlife sound recordings which have appeared from time to time in the journal and a few issues entirely devoted to the subject are also available.

A small library of books on bio-acoustics and wildlife sound recording is maintained for consultation.

Enquiries on any aspect of wildlife sounds are welcome and should be addressed to:

The Curator of Wildlife Sounds
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