

AMERICAN ARACHNOLOGY

The Newsletter of the American Arachnological Society

Number 41

April 1990



1990 Annual Meeting in Ottawa 18-23 June 1990

Plans are well in hand for the 1990 Conference in Ottawa, Ontario, Canada. As of early March, 70 arachnologists and an additional accompanying persons have responded to the first announcement. We could have a record attendance. A number of workers from countries outside North America also indicate interest. Late registrants can be accommodated, though a slightly higher fee may be necessary.

The final call for paper titles and abstracts goes out before the end of March. Robert Holmberg (Sciences, Athabasca University, Athabasca, Alberta T0G 2R0) is organizing the scientific program; and participants may contact him regarding their talks, posters, or films. A form for this purpose is included with the announcement.

The Wednesday afternoon and evening of the Conference is devoted to sightseeing, with guided groups travelling by city bus to the various museums, etc. Probably two of the sites will be the most that can be easily worked into an afternoon. Groups can opt for dinner together at a restaurant suggested by the guides.

The Saturday collecting trip will take place at Murphy's Point Provincial Park in the Rideau Lakes area, 80 kilometres west of Ottawa. A picnic lunch is included.

Information on transportation routes to Ottawa, and on alternative accommodations, is included with the second announcement. Welcome to Canada.

Charles Dondale, AAS Conference Organizer
Biosystematics Research Centre
Research Branch, Agriculture Canada
Ottawa, Ontario K1A 0C6 CANADA

1990 Election For Director

The only office for which an election is needed for the 1990 year is that of **Director**. The following two individuals have graciously consented to be candidates for this office:

Matthew H. Greenstone -

Research Entomologist; Biological Control of Insects
Research Laboratory, USDA-ARS; Columbia, Missouri
B.S., Cornell University (1967)
Ph.D. (Zoology), Univ. of Calif., Berkeley, (1976)
Recent publication: Foreign Exploration For Predators:
A Proposed New Methodology. Environmental
Entomology 18: 195-200, 1989.

David H. Wise -

Associate Professor of Biological Science, University of
Maryland (Baltimore County Campus), and Affiliated
Associate Professor of Zoology at the Univ. of Maryland,
(College Park Campus)
B.S., Swarthmore College (1967)
M.S., Univ. of Michigan (1969)
Ph.D., Univ. of Michigan (1974)
Recent publication: Reillo, P.R., and D.H. Wise.
Experimental Evaluation of Selection on Color
Morphs of the Polymorphic Spider *Enoplognatha*
ovata. Evolution 42: 1172-1189.

Return the enclosed ballot to Robert Wolff before May 30, 1990.

Results of 1989 Special Election

Allen Brady has been selected by mail-in ballot as the President-Elect of the Society. By tradition, he will assume the office of President of the Society at the end of the annual meeting in June, 1991.

Gail Stratton was also re-elected to the office of Treasurer of the Society. She ran unopposed.

Gary Miller Appointed Associate Editor

Following the resignation of Jerry Rovner as Associate Editor of the Journal of Arachnology, the Executive Committee of the Society has appointed Gary Miller of the University of Mississippi as Associate Editor. He will assume the position on June 30, 1990. George Uetz, president of the Society said "I want to express the thanks of the American Arachnological Society for Jerry Rovner's service as Associate Editor of the Journal of Arachnology. His efforts have greatly improved the quality of research articles in the J. of A., and his flair for organization has added much to the efficiency of the review and editing process. His talents will be missed, but his continued health is most important ... and we wish Jerry all the best in dealing with his health problem."

All manuscripts submitted for publication in the Journal of Arachnology should now be sent directly to Dr. Gary Miller, Dept. of Biology; University of Mississippi; University, MS 38677.

Guide to Children's Books

Buggy Books: A Guide To Juvenile And Popular Books On Insects And Their Relatives, written by Gary Dunn is now available. It provides information on 736 books written primarily for youth. It will be useful to teachers, parents, naturalists and librarians. It lists titles, authors, publishers, dates, number of pages and illustrations, age-appropriateness, contents and a quality or usefulness rating. It is available for \$12.95 (plus shipping and handling) from the Young Entomologists' Society, 1915 Peggy Place, Lansing, MI 48910-2553 [phone (517)-887-0499].

Application Published in the Bulletin of Zoological Nomenclature

Case 2637 - *Buthus vittatus* (currently *Centruroides vittatus*; Arachnida, Scorpionida): proposed recognition of Wood (1863) as author of the specific name and designation of a neotype, and *Centruroides hentzi* (currently *Centruroides hentzi*) Banks, 1904; proposed conservation of the specific name. [The purpose of this application is the stabilization of names of North American scorpions which have in the past been misidentified.] (by Scott Stockwell, Dept. of Entomology, Univ. of California, Berkeley, CA 94720; and Herbert W. Levi, Museum of Comparative Zoology, Harvard University, Cambridge, MA 02138)

- - - LIST OF MEMBERS' IN THIS ISSUE - - -

Martin Hammond Muma (1916-1989)

Martin Hammond Muma, Department of Entomology and Nematology, University of Florida, Emeritus Professor, was born in Topeka, Kansas, 24 July 1916. He died 1 December 1989 in Portal, Arizona after a short illness.

His professional training was obtained at Western Maryland College Extension Night School in 1933-34, Frostburg State Teachers College in 1935-36, and the University of Maryland in 1936-43. He received his B.S. degree in 1939, his M.S. in 1940 and his Ph.D. in 1943. From 1940-45, he served as Instructor in Entomology and Assistant Entomologist at the University of Maryland; from 1945-51, he was Extension Entomologist, Associate Entomologist, Associate Professor, and Associate Curator of the Museum at the University of Nebraska; 1951-71 he was Associate Entomologist, Associate Professor, and Entomologists and Professor at the University of Florida Citrus Experiment Station. Since 1971 Dr. Muma had continued his association with the University of Florida as an Emeritus Professor of Entomology. Since 1963 he had been a Research Associate of the Florida State Collection of Arthropods.

Although Dr. Muma's formal education and much of his official professional experience had been in the field of economic entomology, his favorite avocational fields were arachnology and speleology. In entomology he investigated and contributed to taxonomy, biology, ecology, and control of deciduous fruit insects and mites. In arachnology he studied and contributed to the taxonomy, biology and ecology of mites, spiders, scorpions, whip-scorpions and solpugids. In speleology he contributed to cave biology, cave ecology, and cave terminology. He is the author of a book, *Common Spiders of Maryland*, and author or coauthor of 195 scientific and nonscientific bulletins and papers.

Dr. Muma was a member of Alpha-Zeta, Gamma Sigma Delta, Phi Kappa Phi, and Sigma Xi honor societies and was a member of several professional organizations: Florida Entomological Society, Ecological Society of America, Society of Systematic Zoology, and Society of Animal Behavior. Dr. Muma received the Entomologist of the Year Award from the Florida Entomology Society in 1970. He received the Outstanding Research Faculty Membership SHARE Award in 1971.

On 14 September 1940, Martin married Katherine Elizabeth Short. He is survived by his wife and their 6 children: Bonnie, Leslie, Merrie, Sallie, Cherie, and Elsie; and 9 grandchildren.

Prof. Zvonimir Maretić (1921-1989)

Professor Maretić passed away in 1989. Born in Zagreb, Yugoslavia, on 5 May 1921, Zvonimir graduated from the Faculty of Medicine in 1947, specializing in internal medicine and infectious diseases. The Swiss Tropical Institute awarded him a diploma for his work in tropical medicine. In 1959, his dissertation entitled "Araneism with special reference to Istria" won him a doctor's degree in medical science from Zagreb University. He was a full professor of the Medical Faculty in Zagreb as well as a member of the Medical Faculty in Rijeka.

In 1986 he was elected to the membership of the Yugoslav Academy of Sciences. In 1956, until his retirement, he headed the Department of Infectious Diseases of the Medical Center in Pula. Professor Maretić published 383 scientific papers in various languages and a monograph with D. Lebez entitled "Araneism with Special Reference to Europe". American scientists met him at the International Arachnology meetings.

H.W. Levi (information supplied by B. Čurčić)

Note On A Technique For Cleaning Female Copulatory Organs in Spiders

Petra Sierwald

Delaware Museum of Natural History
Wilmington, Delaware

The removal of tissue surrounding the internal ducts and spermathecae of female copulatory organs in spiders can cause some difficulties. For the study of ducts and spermathecae using light microscopy it is sometimes sufficient to submerge the dissected specimen in clove oil or Hoyer's. The tissue becomes translucent and the trajectory of ducts as well as the shape of spermathecae can be examined. But often and especially for SEM-studies, it is desirable to remove the tissue as completely as possible. To do this, I have used either a steady hand and fine needles (pisaurids are rather large creatures) or warm-to-hot KOH. While cleaning epigyna of *Pisaura mirabilis* using KOH, severe damage to the surface of the spermathecae and the soft membranous copulatory duct was observed under the scanning electron microscope. In *Thaumasia* (Risauridae), the needles in my not-so-steady hands have caused some destruction to the membranous copulatory duct.

Following a suggestion of the origin of which I unfortunately can't recall, I attempted to use enzymatic contact lens cleaner to remove the tissue from vulvae. In alcohol-preserved specimens, the dissected epigynum is soaked in tap water overnight. This removes some of the alcohol. Half a tablet of enzymatic contact lens cleaner (of unspecified chemical composition) is dissolved in about three ml of tap water. The specimen remains in that solution overnight and up to three days. The chitinous copulatory ducts and spermathecae, whether strongly sclerotized or rather membranous survive this procedure very well. In the long run, enzymatic lens cleaner is certainly more expensive than Trypsin, but it is available in every drug store. To my knowledge, Trypsin can be ordered only in 500 gram quantity for about \$100 (Fisher Scientific). So far, I have not compared the contact lens cleaner and Trypsin to see which gives better results.

Research Report

Brent Opell

Department of Biology

Virginia Polytechnic Institute and State University
Blacksburg, VA 24061

My studies of spider systematics and functional morphology currently involve two research projects. Jonathan Coddington and I are completing a world-wide revision of the genera and species of the family Dinopidae. As we have not examined all type specimens or finished studying the African *Dinopis*, it is not possible to provide a final tally of species numbers. However, there appear to be about ten species of African and Australian *Menneus* and 16 species of New World *Dinopis*.

I am beginning studies of the cribellum and cribellar prey-capture thread of the spider family Uloboridae. These studies will determine how cribellum size, shape, and spinning spigot density affect the dimensions and stickiness of cribellar thread. They will also determine if there are transformational changes in the cribellum and cribellar threads of orb-weaving uloborids and if web reduction in triangle-weavers of the genus *Hyptiotes* and the single-line-weavers of the genus *Miagrammopes* is associated with larger cribellae and more tenacious cribellar threads. When combined with measurements of uloborid orb- and reduced-webs, the features of their respective cribellar threads will permit a better comparison of the material investment and prey capture potential of these different web forms.

Research Report

Linda S. Rayor
Dept. Entomology
University of Arizona
Tucson, AZ 85721

The primary focus of my research is an examination of spiders' behavioral compromises in response to conflicting selection pressures, and the effect of these compromises on habitat choice and, ultimately, individual fitness. Web-building spiders are particularly good for examining effects of trade-offs because web-building spiders occupy temporarily fixed locations from which they forage, incur predatory attacks, and reproduce. I have been working on several projects exploring different aspects of trade-offs in web-building spiders:

I have just completed 2-1/2 years of postdoctoral research in Mexico, in collaboration with Dr. George Uetz of the University of Cincinnati. We examined whether colonial *Metepeira incrassata* (Araneidae) experience conflicting demands relative to spatial position within the colony, which could affect the spatial organization of the colony. We were interested the mechanisms which produce the characteristic size-structure of large colonies: more large adults are concentrated in the core and smaller, younger individuals are found in increasing numbers toward the periphery. Our research demonstrates that both foraging success and predation risk are higher on the periphery of the colony. However, the trade-offs change during the an individual's development and areas of high risk for large spiders present advantages for smaller individuals. For example, large spiders on the periphery, compared to those in the core, are killed by predators more often, produce fewer offspring and risk more parasitization of their egg sacs. Alternatively, smaller spiders on the periphery capture more prey, suffer little predation, and have reduced aggression and web take-over, compared to small spiders in the core. I am currently examining my data on how the order in which webs are constructed and behavioral interactions act to push smaller individuals outward. My long term observations of individual spiders demonstrates the importance of mothers remaining on their egg sacs through the entire development of young actively guarding them from parasitoids. Manuscripts on this work are in progress.

In graduate school I began an ongoing study in Costa Rica which examined trade-offs in foraging success, web-site tenacity, and reproductive success of pholcid spiders in areas of high and low predation by pseudostigmatid damselflies which prey exclusively on small web-building spiders in sunny areas of the rainforest. One pholcid receives over 60% of the damselfly predation attempts, but in over half of those attacks the spider avoids capture, thus allowing "assessment" of future risk. My data suggest pholcid prey capture and fitness are equal in both areas, but physiologically costly movement to new web-sites is more frequent in risky habitats.

I have become increasingly interested in spider predators and their strategies for capturing spiders. During my work in Mexico I was impressed by the variety of attack behaviors used by numerous wasp species on *M. incrassata*. The most common predator, a pompilid wasp, is able to exploit the spiders' otherwise successful antipredator behavior of jumping from the web when attacked. I would like to explore wasp attack strategies and spider antipredator responses further in an, as yet undetermined, temperate system. In southern Arizona I am looking for a system in which abundant or semi-social spiders are preyed upon by one or more wasp species. I would appreciate ANY suggestions about suitable sites or beasts!

(continued)

Finally, this summer I will have the opportunity to compare the spacing behavior of the colonial orb-weaver *Metabus gravidus* with that of *Metepeira incrassata* when I teach a tropical biology course in Monteverde, Costa Rica. Unlike individual *M. incrassata* which remain in one web-site for days or weeks, *Metabus gravidus* make daily migrations between web-sites and nocturnal group retreats. I wish to compare the factors affecting web-site choice and colony spatial organization in the two species.

I am currently a research associate in Entomology at UA, writing papers, looking for a permanent position, and enjoying the desert.

Old World Scorpions In The Smithsonian Victor Fet

309-B Wilson Blvd. North; Nashville, TN 37205

The largest collections of the Old World scorpions are deposited at Paris, London and Leningrad; however, I was very glad to discover a lot of interesting taxa in the National Museum of Natural History of the Smithsonian Institution (Washington, DC). Their scorpion collection is perfectly sorted and maintained by Scott Larcher. A lot of the New World scorpions (mainly North American species of *Centruroides* and *Vaejovis*) were identified in 1988-89 by Scott Stockwell. My objective, during my 10-day visit this year, was to identify what I could from the Old World part of this collection (about 1000 specimens). It unequally covers the following countries: Italy, Yugoslavia, France, Spain, Greece, Turkey, Israel, Iran, Iraq, Pakistan, Gabon, Congo, Madagascar, Seychelles, South Africa, Australia, and some regions of Polynesia. Especially rich are collections from Iran (1963-64, John Neal) and Egypt (1950s, Wells and Randall).

Since nobody specially collected scorpions for the Smithsonian, all these collections are the byproduct of regular trips by entomologists, herpetologists or just tourists. Some scorpions were collected just for educational purposes (there is a vial with the various body parts from a huge *Pandinus* in this collection which according to the label was personally dissected by Snodgrass!). Nevertheless, this kind of an accumulation of many common species for many years resulted in a comparatively good representation. For example, the most common Asian desert scorpion genus *Mesobuthus* is represented by all its five known species: *M. gibbosus* (Brulle) [Greece, Turkey]; *M. eupeus* (C. Koch) [Iran, Pakistan, Mongolia]; *M. caucasicus* (Nordm.) [Iran]; *M. tamulus* (Fabr.) [India]; and *M. martensi* (Karsch) [China]. Among the most interesting records are *Chiromachus ochropis*, the endemic species and genus from Seychelles; *Hemiscorpius lepturus*, which belongs to a Middle Eastern genus usually rare in collections; and some endemics of Madagascar (species of *Grosphus* and *Opisthacanthus*). Twenty-two Old World genera I have found are: *Androctonus*, *Buthacus*, *Buthus*, *Compsobuthus*, *Grosphus*, *Hottentotta*, *Leiurus*, *Lychas*, *Mesobuthus*, *Odontobuthus*, *Orthochirus*, *Parabuthus*, *Uroplectes* (Buthidae); *Euscorpius* (Chactidae), *Hemiscorpius*, *Heterometrus*, *Pandinus*, *Opisthophthalmus*, *Scorpio* (Scorpionidae); *Chiromachus*, *Liocheles*, *Opisthacanthus* (Iscniridae). The list of labels and all identified species is deposited in the Department of Entomology of NMNH. I am especially grateful to Dr. Jonathan Coddington and the Department of Grants and Fellowships on the Smithsonian Institution for making this study possible by awarding the Short Term Visit Grant.

Research Report

Griswold, Charles E.
Postdoctoral Research Fellow
Department of Entomology, NHB 164
National Museum of Natural History
Smithsonian Institution
Washington, DC 20560

I am continuing with a program of research I began while I was at the Natal Museum and carried through during postdoctoral fellowships at the American Museum of Natural History and the Smithsonian. I am concerned with the historical biogeography of Africa, with special emphasis on the age and mode of origin of the disjunct pattern of "afromontane" temperate rain forest. Through cladistic revisions of spider taxa showing disjunct patterns of endemism I am attempting to develop a general cladogram for areas of endemism within the African continent. My previously published studies on the Microstigmatidae and Migidae suggest a mid-tertiary origin for certain patterns, effectively increasing the time frame for the historical biogeographical debate on Africa by an order of magnitude. I intend to test and refine my biogeographic hypotheses through additional revisions of forest-limited groups of spiders. I have recently completed a revision of the Amaurobiidae Phyxelidinae, a large taxon showing disjunct patterns of endemism in south east Asia, southern and eastern Africa, and Madagascar. For more than a year I have been working on the Machadoniinae (currently placed in the Miturgidae). I have concluded that they are not miturgids at all but rather zoropsids, and will propose a radical reclassification of the latter family. I will redefine the Zoropsidae on the basis of synapomorphies and enlarge the family to include taxa from Africa, Madagascar, and Sri-Lanka. A phylogeny for the African species will provide a test of alternative Pleistocene and mid-Tertiary vicariance models for forest disjunctions in southern Africa. Finally, as a postdoc at the Smithsonian through 1990, I am resuming work on the Cyatholipidae, for which I now have undescribed endemic taxa from southern, eastern, and western Africa, and Madagascar. Revision of this family will provide data on the historical relationships among these areas.

In a different vein, Teresa Meikle (my wife) and I are still hoping to work up all the data on social eresids and their nest associates which we collected while in southern Africa. I am also working with Jon Coddington to design modifications of the standard museum spider-collecting trip to make the results quantitatively comparable between sites and seasons.

American Arachnology in the newsletter of the American Arachnological Society and is sent only to members of the Society. Submission of items for **American Arachnology** should be sent to the editor, Dr. James W. Berry, Department of Biological Sciences, Butler University, Indianapolis, Indiana 46208 U.S.A. Deadline for receipt of material for the Fall issue is 24 September and for the Spring issue, 24 March.

The Journal of Arachnology is the official publication of the Society. Manuscripts submitted for publication in the **Journal of Arachnology** should be sent to Dr. Gary L. Miller, Associate Editor; Department of Biology, University of Mississippi, University, MS 38677 U.S.A.

For information concerning membership, contact Dr. Norman Platnick, Membership Secretary, The American Arachnological Society, Department of Entomology, The American Museum of Natural History, Central Park West at 79th Street, New York, New York 10024, U.S.A.

Research Report

Frederick A. Coyle
Department of Biology
Western Carolina University
Cullowhee, NC 28723

I am in the final third of the project I started two years ago on the systematics of the diplurid subfamily Ischnothelinae. In addition to my standard strategy of assessing morphological variation quantitatively, I have been observing courtship and mating behavior so that I can use both behavioral and morphological characters in the cladistic analysis of ischnotheline relationships. In addition, mating trial results are helping me assess the degree of behavioral isolation among some allopatric populations. Collecting trips to South America and Jamaica in 1988 and to Africa in 1989 were highly successful, thanks in part to Robb Bennett (who served on both trips as interpreter and chief tree climber, among other things) and also Pablo Goloboff and Jackie Palmer. Recent finds in southern India and Sri Lanka by Vince and Barbara Roth and D. P. Wijesinghe reveal surprising ischnotheline diversity there. (If any of you have ischnothelines you could loan to me, it is not too late.)

My undergraduate research assistants and I recently finished projects on *Ischnothele* prey capture (Nancy Ketner), new species of *Ischnothele* and coevolved *Mysmenopsis* kleptoparasites from Jamaica (Ted Meigs), and courtship and mating behavior in East African *Thelechoris karschi* (Terri O'Shields). We are currently surveying web symbionts collected in *Thelechoris karschi* webs (Ted Meigs) and studying the nest structure and behavior of an African double-door barychelid Robb and I discovered (Terri O'Shields). Ron Huff is finishing his master's thesis on the morphological variation, distribution, and natural history of *Hypochilus sheari* and *Hypochilus coylei*, and my new graduate student, Kefyn Catley, is beginning a cladistic analysis of the relationships of the eight species of *Hypochilus*.

I am looking forward to teaching the spider course at the Highlands Biological Station with Bill Shear this summer and to Jackie Palmer's return to Cullowhee this fall. Yes, Jackie has been hired to direct WCU's new undergraduate research program and to set up an electron microscope facility for the University!

When the ischnotheline revision is finished (early 1991), I hope to tackle the only group of diplurid genera that Rob Raven and I have not yet revised, the Diplurinae (*Diplura*, *Linothele*, and *Trechona*).

Research Report

Robert J. Raven
Queensland Museum
P.O. Box 300
South Brisbane, Queensland 4101
Australia

At present, four projects are on my mind. (1) Mygalomorph genera of the world. Funded by an Australian Research Council grant. Finally with social (and political) attention swinging back to our natural heritage, people want to know about spiders and not just how to kill them. The generally local vagility and high endemicity of mygalomorphs makes them very biogeographically informative. We intend to get that information into arenas of land management concerns. Our forests are diminishing and we'll never know what's there unless we sample now. We've got pending revisions on the New Caledonian mygalomorphs. The diversity on the island is staggering. Real Hawaiian stuff!! Relationships of genera within New Caledonia are a little cloudy

but with Australia and the rest of the Pacific are bizarre. Also close to completion is a large work on Australian barychelids. We found at Cape Tribulation (12°S) that the usual three sympatric species blossoms to eight species of nine genera. Revisions on migids will bring major revisionary studies to a temporary close while the biogeographies are developed. The key to South American theraphosid genera using females continues to cause problems but I looking forward to a good solution. Rick West is building good data on biology while I build up the taxonomic data. (2) So, project number two is a major push to sample Australia (Queensland first) intensively using pitfall traps (buckets) left open for a year or so and cleared four times a year. A similar project run by well known entomologist Dr. Geoff Monteith (1974-1980) yielded pounds of exciting material. (3) *Latrodectus* is number three. Our species can kill. It's very common in Queensland. Public enemy number one? Maybe. We know too little about it. OK, Cane Toads are better movie stars but *L. hasseltii* is already ubiquitous, and my pet theory is that it is introduced. (4) Collection management. We are continuing to develop the finest and best documented spider collection in the southern hemisphere. The new Rbase 3, already seen, promises to open new vistas that will allow me to integrate our new collection, Jon Coddington's spider bibliography, and a mygalomorph catalogue-database. There's no stopping us here.

Future Meetings of the Society

- 1991 - University of Mississippi
Oxford, Mississippi
Host: Gary Miller
- 1992 - St. Anselm's College
Manchester, New Hampshire
Host: Craig Hieber
- 1993 - Universidad de Costa Rica
San Jose, Costa Rica
Host: Carlos Valerio

Right Pew, Wrong Church

In the last issue of the newsletter, meetings sites for past meetings were listed. Don Lowrie has informed me that the 1974 western division meeting was indeed in Las Vegas, but it was Las Vegas, New Mexico, not Las Vegas, Nevada. (ed.)

FINANCIAL SUMMARY 1989 DEC. 22, 1989

The American Arachnological Society
Gail E. Stratton, Treasurer

Balance from 1988 Final Statement	\$19,997.84
DEPOSITS	
Membership dues	\$26,732.00
Total Sales (back issues, cards and volumes)	824.95
Interest	926.00
Page Charges	5522.56
Donations (incl. \$1063 collected with dues)	1,495.00
Collections for Manchester Univ. Press (Platnick's book)	6,163.49
Subtotal:	\$41,664.00
EXPENSES	
Journal of Arachnology	
16(2)(mailing cost included, not itemized)	\$7132.95
16(3) (incl 245.35 for mailing)	6149.15
17(1) (incl. 463.88 for mailing)	7162.23
17(2) (incl. 464.12 for mailing)	7247.42
Texas Tech (reprints and envelopes)	353.10
Postage and Supplies,	
Carico, Editor	417.24
Rovner, Associate Editor (Dec 88-June 89)	293.32
Membership mailings	156.95
Reiskind, Riechert, sales	127.20
Honorarium for Jim Carico, JOA Editor	1000.00
Manchester Univ. Press	6163.49
Co-collected dues	5011.11
Filing fee	2.50
Returned checks (return of double payment)	120.00
Subtotal:	\$41,336.66
Total Assets:	\$20,325.18

AMERICAN ARACHNOLOGICAL SOCIETY

MEMBERSHIP LIST

1990

—A—

Aadland, V.
Oevrø Hagen
5305 Florvaag
NORWAY

Abraham, B.J.
Biological Sci.
P. O. Box 6576, Hampton Univ.
Hampton, Virginia 23668

Ades, C.,
Inst. Psicologia, Univers.
Av. Prof. Moraes 1721
Cx. Post: 66.261-CEP
05506 Sao Paulo BRAZIL

Aitchison, Cassie W.
Zoology, Univ. Manitoba
Winnipeg, Manitoba. R3T 2N2
CANADA

Ali, A. D.
Yoder Brothers
P. O. Box 68
Alva, Florida 33920

Allison, R.
The Laurels, Manchester Road
Sway, Hants.
SO4 0AS ENGLAND

Almquist, S.
Sortabacksgatan 45
S-21620 Malmö - SWEDEN

Alpaugh, W. C.
Rt. 1, Box 293
Madison Heights, Virginia 24572

Anhorn, Larry E.
204 E. Ohio
Enid, Oklahoma 73701

Anderson, J. F.
Zoology Dept.
Univ. of Florida
Gainesville, Florida 32611

Arnold, W. J.
409 Grand Blvd.
Huntington, West Virginia 25705

Austin, A.D.,
Waite Agr. Res. Inst.,
Univ. Adelaide
Prvt. Bag 1, Glen Osmond
SOUTH AUSTRALIA 5064

Ayyagari, L. R.
Biology Dept.
Lindenwood College
St. Charles, Missouri 63301

—B—

Barrientos, J. A.
Depto. de Zool.,
Univ. Autónoma de Barcelona
Bellaterra Barcel. SPAIN

Barry, D.
RR 1, Box 511
West Lebanon, Maine 04027

Beachly, William M.
3030 S. 48th
Lincoln, Nebraska 68506

Beall, Bret
Dept. of Geology
Field Museum of Nat. Hist.
Chicago, Illinois 60605

Beatty, Joe
Dept. of Zoology
Southern Illinois Univ.
Carbondale, Illinois 62901

Blanger, G.
465 Griffon
Anse-au-Griffon
Qubec G0E 1A0 CANADA

Benedict, E. M.
8106 SE Carlton
Portland, Oregon 97206

Bennett, Robert G.
Environmental Biology
Univ. of Guelph, Guelph, Ontario
N1G 2W1 CANADA

Benton, Cole L., Jr.
116 Marie Drive
Jacksonville, Alabama 36265

Bentzien, M. M.
4161 Seabreeze Drive
Jacksonville Beach, Florida 32250

Berry, James W.
Dept. of Biological Sciences
Butler University
Indianapolis, Indiana 46208

Biffin, E.H.
8 Orchard Row, Church Road,
Grafham, Huntingdon
PE18 0BD ENGLAND

Bishop, Leslie
Grad. Program in Ecology
Univ. of Tennessee
Knoxville, Tennessee 37996

Blasczyk, Martin
Dept. of Zoology
Southern Illinois Univ.
Carbondale, Illinois 62901

Blick, T.
Leuschnerstr. 29
D-8580 Bayreuth
WEST GERMANY

Bonnet, Peter
Fac. des Sci., Lab. Zool.
118 route de Narbonne
31 Toulouse 04 FRANCE

Buskirk, Ruth E.
Dept. of Zoology
Univ. of Texas
Austin, Texas 78712

—C—

Caldwell, R. T.
Dept. of Biology
University of Iowa
Iowa City, Iowa 52242

Cameron, H.D.
3519 Burbank
Ann Arbor, Michigan 48105

Carnilo, G. R.
Biology, Box 4169
Texas Tech Univ.
Lubbock, Texas 79409

Cangialosi, Karen R.
Dept. of Zoology
Miami University
Oxford, Ohio 45056

Canning, A. J.
6 Noel Terrace
London SE23 3JJ
ENGLAND

Carico, James E. (Life Member)
Biology
Lynchburg College
Lynchburg, Virginia 24501

Carpenier, Capt. T. L.
USAFSAM/EKEN
Brooks AFB, Texas
78235-5301

Carrel, James E.
209 Tucker Hall
Univ. of Missouri
Columbia, Missouri 65211

Cate, C.
2143 Avenue E
Wichita Falls, Texas 76309

Chansigaud, V.
c/o Martin
6 rue de la Victoire
69003 Lyon, FRANCE

Charles, W. D.
Site 22, RR # 1
Summerland, B.C. V0H 1Z0
CANADA

Claborn, Lt. D. M.
Disease Center, Box 43
Naval Air Station
Jacksonville, Florida 32212

Clark, David L.
Biol. Sci., ML 006
Univ. of Cincinnati
Cincinnati, Ohio 45220

Cloudsley-Thompson, J.L.
Zoology, Univ. College
Gower Street, London
WC1E 6BT ENGLAND

Bosworth, A. B.
2930 Burnt Oak
San Antonio, Texas 78202

Bowles, J. B.
Biology
Central College
Pella, Iowa 50219

Bradley, Richard A.
Ohio State Univ.
1465 Mt. Vernon Ave.
Marion, Ohio 43302

Brady, Allen R.
Hopè College
Holland, Michigan 49423

Bragg, P. D.
4378 W. 14th Ave.
Vancouver B.C. V6R 2Y1
CANADA

Brantley, S.
745 Cagua SE
Albuquerque, New Mexico 87108

Braunwalder, M.E.
Frauentalweg 97
CH-8045 Zurich
SWITZERLAND

Breene, Robert G., III
Dept. of Entomology
Texas A & M Univ.
College Station, Texas 77843

Briggs, T. S.
845 Corbett Ave.
San Francisco, Calif. 94131

Broda-Hydorn, Susan
5731 NW 37th St., #213
Virginia Gardens, Florida 33166

Brookhart, J.
7393 S. Tamarac
Englewood, Colorado 80110

Brown, K. T.,
Nat. Sci., P.O. Box 7258
Georgia Military Coll.
Fort Gordon, Georgia 30905

Buckle, D. J.
620 Albert Ave.
Saskatoon Sask. S7N 1G7
CANADA

Bultman, T. L.
Division of Science
NE Missouri State Univ.
Kirksville, Missouri 63501

Burchsted, J.C.A.
Dept. of Zoology
Univ. of Texas
Austin, Texas 78712

Burns, A.
7721 Winslow Road
Jamesville, Iowa 50647

Cobb, L. M.
Biological Sciences
Box 8007, Idaho State Univ.
Pocatello, Idaho 83209

Coddington, Jonathan.
Entomology, NHB 164
National Mus. Nat. Hist.
Washington, DC 20560

Cohen, N. E.
P. O. Box 5292
Mississippi State,
Mississippi 39762

Cohen, R. W.
MRRC-58-258NPI
UCLA, 760 Westwood Plaza
Los Angeles, Calif. 90024

Cokendolphe, James (Life Member)
2007 29th Street
Lubbock, Texas 79411

Cooke, J. A. L.
2418 Roosevelt Ave.
Berkeley, Calif. 94703

Corey, David T.
Roxanne Mobile Home Park
RR 6, TR 128
Carbondale, Illinois 62901

Coyle, Fred A.
Dept. of Biology
Western Carolina Univ.
Cullowhee, North Carolina 28723

Craig, Catherine
Biology, Osborn Memorial Lab.
PO Box 6666, Yale University
New Haven, Conn. 06511

Crawford, C. S.
Dept. of Biology
Univ. of New Mexico
Albuquerque, NM 87131

Crawford, R.
Burke Memorial Museum
Univ. of Washington
Seattle, WA 98195

Crocker, J.
34 Bramcote Rd.
Loughborough, Leics.
LE11 2SA ENGLAND

Crooker, A. R., Jr.
Norwich Eaton Pharmaceut.
Woods Corners,
Norwich, New York 13815

Curčić, B.
Inst. Zool., Studentski trg 16
YU-11000 Beograd
YUGOSLAVIA

Curtis, D. J.
61 Wilson Street
Belth, Ayrshire
SCOTLAND, U.K.

Cushing, Paula
Biology Department
Va. Polytechnic Institute
Blacksburg, Virginia 24061

Cutler, Bruce
Electron-Microscopy Lab
Haworth Hall, Univ. of Kansas
Lawrence KS 66045

--D--

Dean, D. A.
Dept. of Entomology
Texas A & M University
College Station, TX 77843

Decae, A. E.
Jufferkade 93
3011 VW Rotterdam
THE NETHERLANDS

Deeleman-Reinhold, C.L.
Sparrenlaan 8
Ossendrecht
The NETHERLANDS

Dever, F.
P. O. Box 1485
Albuquerque, New Mexico 87103

Dewart, M.,
Sci. Res. Cen., Park Tudor School
7200 North College Ave.
Indianapolis, Indiana 46240

Donaldson, W. V.
Philadelphia Zool. Garden
34th St & Girard Ave.
Philadelphia, Pennsylv. 19104

Dondale, Charles D.
Entomology Research Inst.
Agriculture Canada
Ottawa K1A 0C6 CANADA

Doria, G.
Via Dei Franzoni 2/9
16145 Genova, ITALY

Draw, L. C.
PO Box 4149
Texas-Tech Univ.
Lubbock, TX 79409

--E--

Eagle, Vernon A.
Rt. 1, Box 375
Buena Vista, Virginia 24416

Eberhard, William G. (Life Member)
Biologia, Universidad de Costa Rica
Ciudad Universitaria
COSTA RICA

Edgar, A. L.
Alma College
Alma, Michigan 48801

Edgar, W. D.
Zoology
Univ. of Glasgow
Glasgow G12 8QQ SCOTLAND

Edwards, G. B.
1911 SW 34 St.
Gainesville, Florida 32608

Edwards, R. L.
Box 505
Woods Hole, Massachusetts 02543

Ehmann, W. J.
Dept. of Biology
Utah State Univ.
Logan, Utah 84322-5305

El-Hennawy, H. K.
41 El-Manteqa El-Rabia
St., Heliopolis,
Cairo EGYPT

Ennik, F.
Vector Biol., Health Ser.
2151 Berkeley Way
Berkeley, Calif. 94704

--F--

Faber, Dean B.
Dept. of Zoology
Univ. of Wisconsin, Madison
250 Mills St., Madison, WI 73706

Falch, J.
6332 Steyens Ave. S-
Richfield, Minnesota 55423

Fet, Victor
604 Country Club Road
Nashville, Tennessee 37205

Farley, R. D.
Dept. of Biology
Univ. of California
Riverside, CA 92521

Filmer, M.R.
Spider Club, P.O. Box 81112
Parkhurst 2120, Johannesburg
SOUTH AFRICA

Finkbohner, J.
Univ. of Maryland
Munich Campus
APO New York 09407

Firstman, Bruce L.
Calif. Poly State Univ.
3801 W. Temple Ave.
Pomona, California 91768

Flemm, R. O.
Dept. of Entomology
Texas A & M University
College Station, TX 77843

Folkerts, Debbie R.
Zoology-Entomology
Auburn Univ.
Auburn, Alabama 36849

Formanowicz, D.
Dept. Biol.-UTA 19498
Univ. Texas, Arlington
Arlington, TX 76019

Forster, Ray
100 Norfolk St.
St. Claire
Dunedin, NEW ZEALAND

Fox, I.
School of Med. GPO Box 5067
Dept. Medical Zoology
San Juan, PR 00936

Francke, Oscar F.
Caadas 34
Club de Golf Hda.
Atizapan, Ed. Mex, MEXICO

Fraser, J.
3861 Aragon Lane
San Ramon, California 94583

Frommer, S.
Dept. of Entomology
Univ. of California
Riverside, CA 92521

Fujii, Y., Biology
Nippon Dental Univ.
9-20, Fujimi 1-chome
Chiyoda-ku, Tokyo 102, JAPAN

Funk, Richard C.
Dept. of Zoology
Eastern Illinois Univ.
Charleston, IL 61920

Frst, P.-A.
Institut de Zoologie
Chantemarie 22, CH-2007
Neuchatel, SWITZERLAND

Furéy, Robert
Dept. of Zoology
University of Tennessee
Knoxville, Tennessee 37996

--G--

Gabbutt, P.D.
Environ. Biology
The University
Manchester M13 9PL ENGLAND

Gades, Steven J.
610 Western Ave., Apt.1
Waterloo, Iowa 50702

Galbraith, E.
1800 Elizabeth
Wichita Falls, Texas 76301

Galiano, Maria E.
Mus. Argen. Cienc. Nat.
Av. Angel Gallardo 470
1405 Buenos Aires ARGENTINA

Gertsch, Willis J.
PO Box 157
Portal, Arizona 85632

Gillespie, R.
Zoology Univ., 2538 The Mall
Edmondson 152; Univ. of Hawaii
Honolulu HI 96822

Goloboff, P.
Entomology, Comstock Hall
Cornell Univ.
Ithaca, New York 14853

Gooch, D.
PO Box 897
Boyes Hot Springs,
California 95416

Goodnight, Marie L.
1633 Chevy Chase Blvd
Kalamazoo, Michigan 49008

Graham, D.J.
2580, Gosselin
Du Berger, Québec
G1P 3G1 CANADA

Greenstone, Matthew H.
Biol. Control Insects
PO Box A, Research Park
Columbia, Missouri 65205

Griswold, Charles E.
Entomology, NHB 164
Nat. Mus. Nat. Hist.
Washington, DC 20560

Gruber, J.
Zool. Abt., Naturhist. Mus.
Burggring 7; Postfach 417
A-1014 Wien, AUSTRIA

Guarisco, H.
Box 3171
Lawrence, Kansas 66044

Gunnarsson, B.
Norumsgarde 184
S-41743 Goteborg SWEDEN

Gwynne, D.
Zool. Dept., Erindale Campus
Univ. Toronto, Mississauga
Ont. L5L 1C6 CANADA

—H—

Hadley, N. F.
Zoology Dept.
Arizona State Univ.
Tempe, AZ 85281

Hall, P.
Sch. of Medicine, PO Box 7
Univ. Centre, St. George's Univ.
GRENADA, West Indies

Hancock, J. W.
28 Pump Mead Close
Southminster, Essex
CM0 7AE ENGLAND

Harlan, H. J.
621 Maple Hill Lane
Crownsville, Maryland 21032

Harp, J. M.
302 East Dr.
Oak Ridge, Tennessee:37830

Harvey, Mark S.
Western Australian Museum,
Francis Street, Perth
WA 6000 AUSTRALIA

Haynes, C.
712 Boulevard SE
Atlanta, Georgia 30312

Head, G
Biology Dept.
Princeton University
Princeton, New Jersey 08544

Hebert, Blaine R.
157 N. Allen Ave. #2
Pasadena, California 91106

Herremans, J.
PO Box 291
Manly NSW 2095
AUSTRALIA

Hexter, S. H.
71 Havant Road
Walthamstow, London
E17 3JE ENGLAND

Hieber, Craig S.
Biology Dept.
St. Anselm College
Manchester, New Hampshire 03102

Higgins, Linden
Biology, Universidad Nacional
A. P. 70-233
Mexico, D.F., C.P.04510 MEXICO

Hildebrand, J. G.
603 Gould-Simpson Sci. Bldg.
University of Arizona
Tucson, AZ 85721

Hfer, H.,
Univ. Ulm ;Biologie III
Oberer Eselsberg
D-7900Ulm/Donau WEST GERMANY

Hoffman, K. M.
Entomology, 114 Long Hall
Clemson Univ.
Clemson, South Carolina 29634

Hoffmaster, D. K.
Dept. of Entomology
Michigan State Univ.
E. Lansing, MI 48824

Holmberg, R. G.
Sciences, Box 10,000
Athabasca Univ. Athabasca
Alberta T0G 2R0 CANADA

Homann, H.
Stegemuhlenweg 61
D.3400 Gettingen
WEST GERMANY

Horniga, G.
Entomology, NHB 164
National Mus. Nat.Hist.
Washington, DC 20560

Horner, Norman V.
Midwestern Univ.
3400 Taft Blvd.
Wichita Falls, Texas 76308

Houston, D.
543 Bernard St., Unit A
Costa Mesa, California 92627

Hribar, L.
Entomology, 404 Life Sciences
Louisiana State Univ.
Baton Rouge, Louisiana 70803

Hunt, G.
Invert.Zool. Australian Mus.
6-8 College St, POB A285
Sydney So. NSW 2000
AUSTRALIA

—I—

Ibarra Nunez, G.
Centro de Invest. Ecologicas
Apdo. Postal 36, Tapachula
Chiapas, 30700 MEXICO

Icenogle, W.
Box 277
Winchester, California 92396

Ikeda, H.
Oimachi Kanade 1099
Ashigara-kamigun
Kanagawa 258 JAPAN

Itami, J. K.
Dept. of Biology
Bucknell Univ.
Lewisburg, Pennsylvania 17837

—J—

Jackson, R.R.
Zoology
Univ. of Canterbury
Christchurch 1 NEW ZEALAND

Jakob, Elizabeth
Zoology
University of Canterbury
Christchurch 1, NEW ZEALAND

James, M. J.
49 Farrow Crescent
Ajax, Ontario L1S 4W7
CANADA

Jennings, Daniel T. (Life Member)
Northeastern Forest Expt. Sta.
P. O. Box 4360
Morgantown, West Virginia 26505

Jimenez, Maria L.
Centro Inv. Biologicas
Apdo. Postal 128
La Paz, BCS 23060 MEXICO

Johnson, K.
Inst. Sensory Research
Merrill Lane
Syracuse New York 13244

Jones Karpook, E.
P. O. Box 1060
Lake Helen, Florida 32744

Jonsson, L. J.
Basgranden 45
223 68 Lund
SWEDEN

Judson, M. L. I.
Pure & Applied Biology
Baines Wing, Univ. Leeds
LS2 9JT ENGLAND

—K—

Kamura, T.
Biol.Lab., Otomon Gakuin Univ.
2-1-15; Nishi-Ai, Ibaraki
Osaka 567 JAPAN

Kaspar, John L.
Biology, Univ. of Wisconsin
800 Algoma Blvd.
Oshkosh, WI 54901

Kauri, H.
Universitetet i Bergen
Zoologisk Museum
5007 Bergen, NORWAY

Kessler-Geshiere, A.M.
Sporlaan 58
3633 EV Vreeland
THE NETHERLANDS

Killebrew, D.W., Biology
3900 University Blvd.
Univ. of Texas
Tyler, TX 75701

Kim, Joo-Pil
Arachnological Institute
42, Dosun-dong,
Seongdong-gu, Seoul 133, KOREA

Kimmel, D. L., Jr.
Biology
Davidson College
Davidson, North Carolina 28036

Knapp, E. C.
1325 Grandhaven St.
Salinas, California 93905

Kochalka, J.A.
Inventario, Biologico Nacional
Sucursal 19, Ciudad Univ.
San Lorenzo PARAGUAY

Koh, J.
154 Eng Kong Garden
Singapore 2159 SINGAPORE

Koponen, S.
Dept. of Zoology
Univ. of Turku
SF-20500Turku 50 FINLAND

Kotzman, M.
17 Arnott St.
Clayton, Victoria
3168 AUSTRALIA

Kraus, Otto
Zoologisches Inst.
M.-L.-King-Platz
2000 Hamburg 13 WEST GERMANY

Khn, I.
kolog. Stn. Univ. Wrzburg
OT. Fabrikschleichach
D-8602Raühenebrach
WEST GERMANY

Kovoor, J.
Mus. Nat'l d'Hist. Nat.
61 rue de Buffon
75005 Paris, FRANCE

Kunimi, Y.
Agriculture, Tokyo Univ.
3-5-8Saiwai cho, Fuchu
Tokyo 183 JAPAN

Kutcher, S.R.
Biology, Glendale Comm. College
1500 N. Verdugo Rd.
Glendale, California 91280

—L—

Lake, D.C.
Science Dept., P.O. Box 218
Madang Teachers College
Madang, PAPUA NEW GUINEA

Landau, G. D.
1067 Sea Cliff N. Dr.
Daphne, Alabama 36526

Landes, D. A.
1229 Kilgore
St. Louis, Missouri 63137

Larcher, Scott
Entomology, NHB 164
Nat. Mus. of Nat. Hist.
Washington, DC 20560

Lavery, A. H.
Kindrogan Field Centre
Enochdhu, Blairgowrie
Perthshire PH10 7PG SCOTLAND

Lee, V. F.
Entomology, Calif. Acad. of Sci.
Golden Gate Park
San Francisco California 94118

Leigh, T. F.
Univ. of Calif., Davis
1703 Shafter Ave.
Shafter, California 93263

le Roy, A., c/o JML
P. O. Box 948
Roodepoort 1725
Transvaal, SOUTH AFRICA

Levi, Herbert W.
Museum of Comparative Zool.
Harvard University
Cambridge, Massachusetts 02138

Levy, G.
Dept. Zool.
Hebrew University
Jerusalem 91904 ISRAEL

Licht, E. L.
Museum, Box 218
Univ. of Colorado
Boulder, CO 80309

Lingafelter, S.
#2 Kellygreen Ct.
Wichita Falls, Texas 76310

Lizotte, Renee
Zool. Sciences, Irvine Hall
Ohio University
Athens, OH 45701

Locket, G. H.
Berry's Brook Cottage
Stone Allerton, Axbridge
Somerset BS26 2NP ENGLAND

Locket, N. A.
(Anatomy/ Hist.)
Univ. Adelaide, Box 498; GPO.
Adelaide, S. AUSTRALIA 5001

Lockley, T. C.
Imported Fire Ant Station
3505 25th Ave.
Gulfport, Mississippi 39501

Loechelt, H.
8809 NE 180th
Bothell, Washington 98011

Lowe, G.
Monell Chemical Senses Center
3500 Market St.
Philadelphia, Pennsylvania 19104

Lowrie, Don C.
Space 117 Country Club Gardens MHP
Airport Road
Santa Fe, New Mexico 87501

Lubin, Yael D.
Inst. Desert Research
Ben Gurion Univ.
Sede Boquer 84990 ISRAEL

—M—

MacMahon, James A.
Dept. of Biology
Utah State Univ.
Logan, UT 84322-5305

Maddison, Wayne
Dept. of Zoology
Univ. of California
Berkeley, California 94720

Mahler, A. E.
Entomology, Drawer EM
Mississippi State Univ.
Miss. State, MS 39762

Mahnert, V.
Museum Histoire Naturelle
Route de Malagnou
CH-1211 Geneva 6 SWITZERLAND

Main, B. Y.
Dept. of Zoology
Univ. W. Aust., Nedlands
6009 W. AUSTRALIA

Marshall, Sam
Dept. of Zoology
Univ. of Tennessee
Knoxville, TN 37996

Marusik, Y. M.
Institute Biological Problems
K. Marx pr. 24
Magadan 685010 USSR

Mason, R. R.
Forestry Range Sci. Lab
1401 Gekeler Lane
La Grande, Oregon 97850

Mason, Tom
Metropolitan Toronto Zoo
Box 280, West Hill, Ontario
M1E 4R5 CANADA

Masters, W. M.
Zoology, 1735 Neil Ave.
Ohio State University
Columbus, Ohio 43210

Matsuda, M.
c/o Kawabe Nukabira
Kamishihoro-sho,
Kato-gun, Hokkaido 080-14 JAPAN

Matsumoto, S.,
Biology, Kyorin Univ.,
20-2 Shinkawa 6, Mitaka-shi
Tokyo 181, JAPAN

Maury, E. A.,
Museo Argent. Cien. Nat.,
Av. Angel Gallardo 470
1405 Buenos Aires, ARGENTINA

McCambridge, M. B.
45 Coltswood Court
Coatbridge, Lanarkshire
ML5 2BU SCOTLAND, U.K.

McGinn, R. A.
Geography, Brandon Univ.
Brandon, Manitoba
R7A 6A9 CANADA

Merrett, P.
6 Hillcrest, Durlston Rd.
Swanage, Dorset
BH19 2HS ENGLAND

Miller, Gary L.
Biology
Univ. of Mississippi
University, MS 38677

Miller, Patricia R.
Biology
Univ. of Mississippi
University, MS 38677

Millidge, A. Frank
Treasbeare, Higher Broad Oak Rd.
West Hill Ottery St. Mary, Devon,
EX11 1XJ ENGLAND.

Minch, E. W.
2207 W. Main #15
Mesa, Arizona 85201

Miyashita, K.
Biology, Tokyo Metro. Univ.
Setagaya-ku, Fukuzawa 2-1-1
Tokyo 158, JAPAN

Moore, Barbara
11217 Fogelson Ct.
Indianapolis, Indiana 46229

Moore, K.
5329 Jerri Lane
Ft. Worth, Texas 76117

Morse, D. H.
Div. of Biol & Medicine
Brown University
Providence, Rhode Island 02912

Mott, Dan J.
Dept. of Zoology
Southern Illinois Univ.
Carbondale, IL 62901

Mouer, J. E.
826 Harvard Ave.
Claremont, California 91711

Moulder, B. C.
Biology Dept.
Illinois College
Jacksonville, IL 62650

Muchmore, William B.
Biology
Univ. of Rochester
Rochester, New York 14627

Mullen, Gary R.
Entomology
Auburn University
Auburn, Alabama 36849

Murphree, C. S.
Dept. of Entomology
Auburn University
Auburn, Alabama 36849

Murphy, F. M.
323 Hanworth Road
Hampton, Middlesex
TW12 3EJ ENGLAND

—N—

Nahrig, D.
Stahlbühling 207
D-6802 Ladenburg
WEST GERMANY

Nellist, D.R., 198A
Park St. Lane, Park St.
St. Albans, Herts.
AL2 2AQ ENGLAND

Nelson, J. M.
Oral Roberts Univ.
7777 So. Lewis
Tulsa, Oklahoma 74171

Nelson, S., Jr.
Dept. of Biology
State Univ. of New York
Oswego, NY 13126

Nentwig, W.
Zool. Inst., Universität
Baltzerstr. 3, CH-
3012 Bern, SWITZERLAND.

Nilsson, J. A.
c/o Dept. Biol. Sci., Box
5640, No. Arizona Univ.
Flagstaff, AZ 86011

Nishikawa, Y.
Biol. Lab., Ohtemon-Gakuin Univ.
2-1-15 Nishi-Ai, Ibaraki
Osaka 567, JAPAN

Nishimura, N.
Fla. Medical Ent. Lab.
200 9th St. SE
Vero Beach, Florida 32962

Noah, E. L.
1901 Ocean Ave.
Arcata, California 95521

Norton, R. A.
Biology, College of Env. Sci.
Sstate Univ. of New York
Syracuse, NY 13210

—O—

Olmstead, J. V.
7708 Rocio St.
Carlsbad, California 92009

Olsson, T.
Sandeslattsökroken 74
424 36 Angered, SWEDEN

Ono, H.
Entomology, Natl. Sci. Mus.
3-23-1 Hyakunin-cho
Shinjuku-ku Tokyo 169, JAPAN

Opell, Brent D. (Life-Member)
Dept. of Biology
Virginia Polytechnic Inst.
Blacksburg, VA 24061

Oraze, M.
1703 Myrtle Pl.
Davis, California 95616

—P—

Palmer, Jackie
Western Caroline University
Culowhee, North Carolina 28723

Pascoe, F.
Biology; Coll. of St. Francis
500 Wilcox St.
Joliet, Illinois 60435

Paz, S. N.
Biología, Universidad de Antioquia
Apartado Aereo 1226
Medellin, COLOMBIA

Pearce, T. A.
59 Greensboro Bay
Winnipeg, Manitoba
R3T 4K9 CANADA

Pears, F. N.
c/o Post Office, BENDIGO
Victoria 3550, AUSTRALIA

Peaslee, J. E.
Rt. 1
Centerview, Missouri 64019

Peck, William B.
337 Xanthisma
McAllen, Texas 78504

—R—

Peet, W. B., Jr.
25 Sierra Pl.
Sierra Madre, California 91024

Penniman, Andrew J.
Natural Systems
Defiance College
Defiance, Ohio 43512

Petersen, C. S.
26 Windersal Lane
Baltimore, Maryland 21234

Peterson, A. P.
P. O. Box 1999
Walla Walla, Washington 99362

Peterson, R. L.
4800 State Route One
Stinton Beach, California 94970

Pettit, B. H.
3747 Oak Brook Ct.
Pleasanton, California 94566

Petto, R.
Biologie V
Kopernikusstrasse 16
5100 Aachen, W. GERMANY

Pfeiffer, W. J.
3535 Mountain Creek Rd.
#1602
Chattanooga Tennessee 37415

Phillips, M.
6005 Ropes Drive
Cincinnati, Ohio 45244

Piel, W. H.
Invert. Museum Comp. Zoology
Harvard University
Cambridge Massachusetts 02138

Pinter, Larry
Entomology, Code 114A
PACNAVFACENCOM
Pearl Harbor, Hawaii 96860

Platnick, Norman
Entomology, Amer. Mus. Nat. Hist.
Cent. Pk. W. at 79th St.
New York, NY 10024

Polis, Gary A.
Biology, Vanderbilt Univ.
Station B, Box 93
Nashville, Tennessee 37235

Preston, W. B.
Manitoba Mus. of Man & Nature
190 Rupert Ave., Winnipeg
R3B.0N2 CANADA

Prestwich, K. N.
Dept. of Biology
Holy Cross College
Worcester, Massachusetts 01610

Prinsen, J. D.
Julianastraat 157
6707 DD Wageningen
THE NETHERLANDS

Punzo, F.
Box 5F/Biology
401 W. Kennedy Blvd.
Tampa, Florida 33606

Purrone, A. D.
14 Kaechele Dr.
Sandy Hook, Connecticut 06482

Radabaugh, D. C.
Dept. of Zoology
Ohio Wesleyan Univ.
Delaware, OH 43015

Rambla, M.
Inst. Biologica Aplicada
Univ. de Barcelona
Barcelona, SPAIN

Ramirez, Martin G.
Applied Sciences Bldg.
Univ. of California
Santa Cruz, CA 95064

Rapp, W. F.
430 Ivy Ave.
Crete, Nebraska 68333

Raven, Robert J.
Queensland Museum, Box 300
South Brisbane, Qld. 4101
AUSTRALIA

Rayor, Linda S.
2201 N. Los Altos
Tucson, Arizona 85705

Reagan, Nancy L.
Allee Lab. Anim. Behavior
940 E. 57th St.
Chicago, Illinois 60637

Rein, J. O.
Dept. of Zoology
Univ. of Trondheim
N-7055 Dragvoll NORWAY

Reiskind, Jonathan
Zoology
Univ. of Florida
Gainesville, FL 32611

Rhodes, C. T.
500 LaPorte Ave.
Fort Collins, Colorado 80521

Richardson, R.
Biölogy Dept.
Augusta College
Augusta, Georgia 30910

Richman, David B.
Entomology, Box 3BE
New Mexico State Univ.
Las Cruces, NM 88003

Riechert, Susan E.
Zoology, 501 Hesler Biol. Bldg.
Univ. of Tennessee
Knoxville, TN 37916

Rifkind, J.
11322 Camarillo St. #304
No. Hollywood, Calif. 91602

Roach, S. H.
Cotton Product. Res. Unit, USDA
PO Box 2131
Florence South Carolina 29503

Roberts, M. J.
200 Abbey Lane
Sheffield, Yorks.
S8 0BU ENGLAND

Robinson, Barbara
6220 Broad St.
Bethesda, Maryland 20816

Robinson, Michael H.
Director
National Zoological Park
Washington, DC 20008

Roble, S. M.
Nat. Heritage Prog, F&W
100 Cambridge Street
Boston, Massachusetts 02202

Roland, C.
Biol/Compt, Univ. Nancy I,
B.P. #239 54506 Vandoeuvre
Les Nancy CED FRANCE

Roth, Vincent D. (Life Member)
P. O. Box 136
Portal, Arizona 85632

Rovner, Jerome S. (Life Member)
Zoology, Irvine Hall
Ohio University
Athens, OH 45701

Rypstra, Ann L.
Zoology, Miami Univ.
1601 Peck Blvd.
Hamilton, Ohio 45011

—S—

Saether, S. A.
Klaebuv. 102
N-7030 Trondheim
NORWAY

Santiago-Blay, J. A.
218 Wellman Hall
Univ. of California
Berkeley, CA 94720

Schaefer, M.
II Zool. Inst., Okol.,
Berliner Str. 28, 3400 Göttingen
BRD WEST GERMANY

Scharff, Nicolaj
Oster Sogade 104. st.
DK 2100 Copenhagen O.
DENMARK

Schlinger, Evert I.
830 Coachman Pl.
Clayton, California 94517

Schoener, T. W.
Zoology, Storer Hall
Univ. of California
Davis, CA 95616

Sedgwick, W.
318 Caselli
San Francisco, Calif. 94114

Selden, Paul
Extra-Mural Studies, University
Oxford Road, Manchester
M13 9PL ENGLAND

Seyfarth, Ernst-August
Zoologie, Goethe-Univ.
Siesmayerstr. 70
D-6 Frankfurt/Main WEST GERMANY

Sharer, Archibald W.
Biology
N.C. Wesleyan College
Rocky Mount, North Carolina 27801

Shear, William
Biology Dept.
Hampden-Sydney College
Hampden-Sydney, Virginia 23943

Shinkai, E.
6-6 Honda 1 chome
Kokubunji-shi
Tokyo 185, JAPAN

Shultz, Jeffrey W.
Zoology, Ohio State Univ.
1735 Neil Ave.
Columbus, OHIO 43210

Sierwald, Petra
Delaware Mus. Nat. Hist.
P. O. Box 3937
Greenville, DE 19807

Silva Davila, D.
Dpto. Entomologia
Museo de Hist. Natural
Ap.140434, Lima 14, PERU

Silvestri, E.
222 McNaughton Ave.
Cheektowaga, New York 14225

Sissom, D.
Dept. of Biology
Elon College
Elon College, North Carolina 27244

Sivertsen, D. W.
Huntington Botanical
1151 Oxford Road
San Marino, California 91108

Skinner, Steven
595-Allen Road
Port Huron, Michigan 48060

Small, C. Y.
68 George St.
Bloomfield, New Jersey 07003

Smith, A. M.
89 Ermine Road
Ladywell, London
SE13 5JJ ENGLAND

Smith, E. L.
73 Balsam St. S.
Timmons, Ont.
P4N 2C9 CANADA

Smith, G. T.
CSIRO, Div. Wildlife Res.
LMB No. 4, P.O. Midland
WA 6056 AUSTRALIA

Smith, K. G.
Dept. of Zoology
University of Arkansas
Fayetteville, AR 72701

Smith, Kathy K.
4438 Davenport St. NW
Washington, DC 20016

Smith, Katharine M.
3328 Dothan
Dallas, Texas 75229

Snetsinger, R.
Entomology, 106 Patterson
Pennsylvania State Univ.
Univ. Park, PA 16802

Soares, H. E. M.
IBBMA, Caixa Postal 503
18.610 Rubiao Junior
Sao Paulo, BRAZIL

Soleglad, M. E.
P. O. Box 250
Borrego Springs, Calif. 92004

Sorkin, Louis (Life Member)
Entomology, Amer. Museum Nat. Hist.
Central Park W. at 79th St.
New York, NY 10024

Spellerberg, W.
5419 Christy Blvd.
St. Louis, Missouri 63116

Spence, J. R.
Dept. of Entomology
Univ. of Alberta
Edmonton T6G 2E3 CANADA

Spiller, D.
Dept. of Zoology
Univ. of California
Davis, CA 95616

Stockwell, Cpt. Scott A.
Natick RD&E Ctr.
ATTN: STRNC-YMB
Natick, Massachusetts 01760-5020

Straszyński, E.
Watershed Ecosystems
Trent University
Petersborough, Ont. K9J 7B8 CANADA

Stratton, Gail
Biology
Albion College
Albion, Michigan 49224

Straumfors, P.
Rana Museum Natural Hist.
Box 301
N-8601 Mo, NORWAY

Strenth, N. E.
Biology
Angelo St. Univ.
San Angelo, Texas 76909

Stumpf, H.
Maidbronnerstr. 23
8709 Rimpar
WEST GERMANY

Süter, Robert B.
Dept. of Biology
Vassar College
Poughkeepsie, New York 12601

Suzuki, S.
Arachnol. Lab.
17-2 Nishihakushima-cho
Nara-ku, Hiroshima-shi 730 JAPAN

—T—

Tanaka, H.
6-27 Fujisawadai 7-cho-me
Tondabayashi-city
Osaka 584, JAPAN

Tanaka, K.
Lab. of Pest Control
Kyushu Nat. Agric. Exp. Sta.
496 Izumi, Chikuga-shi,
Fukuoka-ken 833, JAPAN

Taylor, D.C.
1548-D Adams Ave.
Costa Mesa, Calif. 92626

Teeter, M. M.
3443 Seaview Ave. NW
Seattle, Washington 98107

Tessler, Steven
Entomology
Pennsylvania State Univ.
Univ. Park, PA 16801

Thaler, K.
Inst. f. Zoologie
Technikerstr. 25
A-6020 Innsbruck-AUSTRIA

Thill, J. F.
36 Allegany Ave.
Kenmore, New York 14217

Thompson, M. E.
Shadow-Cliff Reg. Rec.
Area, PO Box 938
Pleasanton, Calif. 94566

Tiedemahn, K. B.
Inst. de Psicologia
Univ. Sao Paulo, Caixa Postal 66261
Sao Paulo SP, BRAZIL

Tietjen, W. L.
Biology
Georgia S.W. College
Americus, GA 31709

Tillinghast, Edward K.
Zoology
Univ. of New Hampshire
Durham, NH 03824

Todd, R. R.
6754 Big Ridge Road
Hixson, Tennessee 37343

Tongiorgi, P.
Dipt. Biologia Animale
Via Università 4
41100 Modena, ITALY

Toro G., J. A. del
Apdo. P. 21, Sucursal F
San Nicolas de I. Garza
Cd. Universitaria 66450
Monterrey NL, MEXICO

Tortorici, C. E.
2216 New Hampshire
Lawrence, Kansas 66046

Townley, Mark
Zoology, Spaulding Bldg.
Univ. of New Hampshire
Durham, NH 03824

Tsurusaki, N.
Biological Inst.
Tottori Univ.
Tottori, 680 JAPAN

Tugman, Cathy
Dept. of Zoology
Univ. of New Hampshire
Durham NH 03824

—U—

Ubick, D.
22 Forest Side Ave.
San Francisco, Calif. 94127

Uetz, George W. (Life Member)
Dept. of Biol. Sciences
Univ. of Cincinnati
Cincinnati, Ohio 45221

—V—

Vachon, M.
Lab. des Arthropodes
61 rue de Buffon
75005 Paris, FRANCE

Vetter, R.
Entomology
Univ. of California
Riverside, CA 92521

Viera, C.,
Inst. Invest. Biol.
Clemente Estable, Av. Italia 3318
Montevideo, URUGUAY

Vincent, Lenny S.
Biology, Fullerton College
321 Chapman Ave.
Fullerton, Calif. 92634

Vogel, Beatrice R.
46 S. Howie
Helena Montana 59601

Vollrath, F.
South Parks Road,
Univ. Oxford
OX1 3PS ENGLAND

Voss, J. F.
415 E. Franconian Dr.
Frankenmuth, Michigan 48734

—W—

Walker, F. E.
1010 Chevy Chase
San Antonio, Texas 78209

Weaver, Andrew A.
1421 E. Clark Rd. RR-4
Wooster, Ohio 44691

Weaver, Jan
109 Tucker Hall
Univ. of Missouri
Columbia, MO 65211

Weber, Larry A.
Box 1203 Route 104
Barnum, Minnesota 55707

Welch, J. B.
USDA-ARS; Screwworm Res.
US Embassy, PSC Box 496
APO Miami, Florida 34020

West, R. C.
4034 Gianford Ave.
Victoria BC V8Z 3Z6
CANADA

Weygoldt, Peter
Zool. Inst., Katherinenstr. 20
78 Freiburg in B.
WEST GERMANY

Wharton, R.
Dept. of Entomology
Texas A & M University
College Station, TX 77843.

Wijesinghe, P.
Entomology
Amer. Mus. Nat. Hist.
Cent. Pk. W. at 79th St.
New York, NY 10024

Wiley, M. B.
Entomology, Long Hall
Clemson University
Clemson, South Carolina 29634-0365

Williamis, S. C.
Biology
California State Univ
San Francisco, CA 94132

Wilson, Graeme
School of Optometry
Univ. of Alabama
Birmingham, AL 35294

Winkles, D.
1318 N. 11th St.
Abilene, Texas 79601

Wise, David
Biology Dept.
University of Maryland
Catonsville, MD 21228

Witten, L.
Boydston's Pest Control
407 Kent
Midland, Texas 79701

Witters, M.
318 Bridge Place
W. Sacramento, Calif. 95691

Wolf, A.
Schriesheimerstr. 30
D-6915 Dossenheim
WEST GERMANY

Wolff, Robert
Trinity Christian College
6601 West College Drive
Palos Heights, Illinois 60463

Work, Robert W.
Dept. of Textile Chem.
N. C. State Univ., Box 8302
Raleigh, North Carolina 27695

Wrenn, J. W.
Biology, Box 8238; Univ Stat.
Univ. of North Dakota
Grand Forks, ND 58202

Wright, L.
1124 W. Daniel
Champaign, Illinois 61820

Wright, R. A. S.
5204 Riverside Drive
Richmond, Virginia 23225

—Y—

Yaginuma, T.
3-7-14, Harinakano
Higashiumiyoshi-ku
Osaka 546, JAPAN

—Z—

Zamudio, Maria de la Luz
Chabacano 35-12
Col. San Fco. Contreras
10810 Mexico, D.F. MEXICO

(continued on back)

--Z-- (cont'd)

Zegers, G.
1803 Mission St. #519
Santa Cruz Calif. 95060

Zeh, D. W.
Smithsonian Tropical
Research Institute
APO Miami, Florida 34002-0011

U5
60

American Arachnology
Department of Biological Sciences
Butler University
Indianapolis, Indiana 46208
U.S.A.

NON-PROFIT ORG.
U.S. POSTAGE
INDIANAPOLIS, IN
PERMIT NO. 3381



Cushing, P.
Biology Department
VPI
Blacksburg, VA 24061