AMERICAN ARACHNOLOGY

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Dates & Deadlines

- ***PLEASE NOTE*** the A.A.S. Research Fund deadlines for proposals are 30 November and 30 May. More information is available on page 13.
- Highlands Arachnology Course is . . . 15 – 26 July, 1996
- 1996 A.A.S. International Meeting . . . 28 – 31 July, Tucson, AZ
- 1997 A.A.S. National Meeting . . . Dickenson, ND

AMERICAN ARACHNOLOGY

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REPORT ON THE 1995 A.A.S. MEETING

The 1995 meeting of the AAS was hosted by Jim Carrel, Jan Weaver, and Matt Greenstone (and their minions) at the University of Missouri in Columbia, MO. The Editor is sure the other meeting participants join in expressing their gratitude to Jim & Jan & Matt for providing such a fine, well-organized meeting.

The 1995 AAS annual meeting took place at the University of Missouri, Columbia, Missouri from 20 through 25 June. The weather was hot with hearty midwest thunderstorms, all normal for central Missouri in mid-June. The meeting was attended by over 100 participants from all over the USA and abroad. The festivities started on Tuesday evening with an informal reception where. There were specialty beers on tap adding a local flavor to the occasion. A collection of various slides and pictures depicting past meetings were available for viewing.

The main program started Wednesday morning with a plenary lecture by a physician who has treated 40 years of *Loxosceles* bites inflicted upon those in the Show-Me state. The address was well-received and very informative to those in attendance (the traditional treatments for *Loxosceles* bites have changed.) The subsequent paper sessions covered a wide range of topics, and those held on Thursday also were diverse, and the poster session that afternoon was certainly one of the best ever held at an AAS meeting. An informal slide & movie show that same evening previewed the 1996 meeting at Tucson, and we were treated to ice cream from Mizzou's own Ice Cream Institute.

Friday morning was devoted to the last group of presented papers, and the business meeting took place that afternoon. Activities that evening began with a social hour and "silent bidding" for books, papers, and other arachnoparaphernalia. Everyone then moved to the banquet room, where we were treated to a good meal and fine fellowship. The Society once again called upon one of its foremost members to be auctioneer at the Third Annual Arachno-auction. George Uetz presided over the proceedings, which featured some very rare books from Bill Peck's library, items from past AAS meetings, and other spider-related artwork and publications. Thanks to great planning and substantial donations, this Arachno-auction was the most successful ever, raising over $2,000 for the Society.

The Society also honored two of its charter members for their contributions to the Society and arachnology. Bill Peck and Vince Roth each received a commemorative plaque, a long round of hearty applause, and heartfelt appreciation. The Honorees were genuinely surprised and moved. The winners

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PRESENTED PAPER ABSTRACTS

REPRODUCTIVE INVESTMENT IN THE WOLF SPIDER *(SCHIZOCOSA OCREATA)*

Amaya, C.C.*, and Klawinski, P.D. University of Texas at Arlington, Dept. of Biology, Box 19498, Arlington, TX 76019

Life history theory predicts that the allocation of reproductive investment by females may involve a trade-off between offspring size and number. We examined this trade-off in the wolf spider, *Schizocosa ocreata*, using twenty-two females and their litters collected in East Texas. Our results indicated that the litters differed significantly in mean offspring mass and a positive correlation was observed between total litter mass and litter size. There were no significant relationships between female mass and mean offspring mass, litter size, total litter mass, or cephalothorax length of the offspring. There were also no significant relationships between female cephalothorax length and litter size, female mass or average offspring cephalothorax length. Therefore, these data indicated no offspring size-number trade-off for *S. ocreata*. Results do suggest that females investing more in reproduction relative to their size, produce more but not larger size offspring. The data also indicated that females producing more offspring produced more uniformly sized offspring.

CARBOHYDRATE ANALYSIS OF LYCOSID HEMOLYMPH

Barron, P. Biology Dept., Midwestern State University, Wichita Falls, TX 76308

The carbohydrate composition of cell free hemolymph from lycosid spiders (Araneae, Lycosidae) was analyzed using colorimetric and enzymatic assays. Cellular components were removed by centrifugation and soluble proteins were precipitated from the plasma with trichloroacetic acid. Preliminary results indicate a mixture of glucose and trehalose as the plasma carbohydrates. The possibility of these saccharides existing as a glycoprotein was considered.

ANALYSIS OF THE MOVEMENTS OF THE TEXAS BROWN TARANTULA, *APHONOPELMA HENTZI* (GIRARD) (ARANEAE: THERAPHOSIDAE) USING RADIO TELEMETRY

Janowski-Bell, M.E. Biology Department, Midwestern State University, Wichita Falls, TX 76308

An analysis of the movements of the Texas Brown tarantula, *Aphonopelma hentzi* (Girard), was conducted in north-central Texas on the Waggoner Ranch, 12 miles WSW of Electra. The study was conducted of over a period of seven weeks during September and October, 1994. Individual male tarantulas were equipped with a radio transmitter and movement monitored using an antenna and a radio receiver. A total of 113 observations on seven individuals were used for data analysis. Males moved significant distances, some over 1000 m, in relatively short periods of time. Movement was in all directions, except northeast. The data indicate movement is probably in search of mates. This means of dispersal could minimize inbreeding with siblings that had remained in proximity to the maternal burrow. Individuals were observed moving through a variety of habitats from barren, rocky ground to vegetation so thick the spider was several centimeters above the ground.

SYSTEMATICS OF THE SPIDER GENERA *MALLOS* AND *MEXITILIA* (ARANEAE: DICTYNIDAE)

Bond, J.E. and Opell, B.D. Dept. of Biology, Virginia Polytechnic Institute and State University Blacksburg, Virginia 24061-0406

This systematic study recognizes 15 species of the genus *Mallos* Pickard-Cambridge and three species of the genus *Mexitilia* Lehtinen. Three species of *Mallos* and one species of *Mexitilia* are newly described. Two species are placed in synonymy and two species are transferred from *Mallos*. The males of two *Mallos* species are described for the first time. A cladistic analysis based on 22 morphological produced a cladogram that supports the monophyly of *Mallos* and the validity of *Mexitilia*. For five species of *Mallos* and one species of *Mexitilia* mitochondrial and nuclear DNA sequences were analyzed by restriction enzyme digest. The seventeen resulting restriction sites produced a cladogram that agreed with the one based on the morphology of these six species. When morphological and molecular characters were combined they produced a single tree that was identical to that based on molecular data alone. These molecular and morphological characters present a congruent picture of *Mallos* and *Mexitilia* phylogeny.

DENSITY ESTIMATES OF SPIDERS: A SEARCH FOR PATTERNS

Bradley, Richard A. Dept. of Zoology, Ohio State University, 1465 Mt. Vernon Ave. Marion, OH

A common first step in the analysis of the ecological significance of spiders has been estimation of their population density (spiders/m^2 or spiders/ha). These estimates have been based on small quadrat sampling and visual censuses among others. There are a number of potential problems with estimation of density. Many of these problems are shared with estimates of density for other invertebrates. Unlike studies using measures of relative abundance, studies using density estimates have rarely tracked temporal variation. I analyzed published density estimates for a variety of species of web-spinning, leaf-litter inhabiting and burrowing spiders from the literature. Estimates were extremely variable (over several orders-of-magnitude). Major factors that influenced the estimates included: 1) the size of the sampling unit, 2) the sampling method, 3) the pattern of dispersion of individuals, 4) the size of the spider, 5) the general ecology of the species. The significance of these factors and their implications for ecological research on spiders will be discussed.

GROWTH RATE IN THE SCORPION *CENTRUROIDES VITTATUS*: THE EFFECT OF FOOD AVAILABILITY

Brown, Christopher, A. Dept. of Biology, University of Texas at Arlington, Arlington, TX 76019

The scorpion *Centruroides vittatus* is widespread in the southern and southwestern U.S., and previous work has shown substantial interpopulation variation in a number of life history traits, such as litter size, offspring size, and adult size. Since resource availability may have a profound effect on these traits (either directly or indirectly via effect on adult body size), I conducted an experiment to determine the effects of various food levels on individuals from three Texas populations [one each from north-central (Decatur), south-central (Kickapoo), and west (Independence Creek) Texas]. Eight to ten litters from each population were divided into three approximately equal-sized groups as second instars and maintained for six months on one of three feeding treatments: once every three days, once every six days, or once every nine days. All juveniles were feed only immature crickets (size and number varied with scorpion instar). At each molt, scorpions were weighed to the nearest 0.1 mg. Three body measurements were taken at time of death or molting. Among populations, Decatur juveniles had lower survival than juveniles from the other two populations, but no other differences were found at any feeding level. Within each population, survival was lowest for individuals on the nine-day treatment. As feeding frequency increased, juveniles survived better, had shorter intermolt duration, and were larger (both in weight and in the three body measurements). These differences among feeding treatments are seen at the third instar and become more pronounced at later (fourth and fifth) instars. Thus *C. vittatus* which experience higher food levels or are better foragers appear to be able to reach adulthood earlier, at a larger size, or both.

BARON WALCKENAER AND GENDER DIFFICULTIES: THE *ARGYRODES* PROBLEM

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The ICZN specifies that species names must agree in gender with the genus name according to the rules of Greek and Latin grammar. How does confusion about genders come about? Over the centuries erroneous ideas about etymology, or the nature of Greek and Latin word formation, have caused confusion. Specifically, genus names which are grammatically adjectives used as nouns have no intrinsic gender. Baron Walckenaer in 1841 named a species *Linyphia argyrodes*. The species name means 'silvery' and the suffix *-odes* (which has nothing to do with Greek *eidos* 'form') is a perfectly legitimate Greek formation, but there is nothing about it which unambiguously marks it as a feminine adjective. Such is the nature of such adjectives. When Simon in 1864 elevated this species name to a genus name *Argyrodes*, he treated this nominalized adjective as feminine, and that ought to have settled the matter. But then the meddling started, and it has been successively treated as masculine or neuter as well as feminine, on the grounds of faulty grammatical argument. Bonnet cut the Gordian knot in the interests of the least possible disturbance, and decreed it to be masculine. The Code, albeit on incorrect grammatical grounds arbitrarily now declares all compounds of *-oides* or *-odes* to be masculine.

WEB STEALING VERSUS PREDATION IN *ARGYRODES TRIGONUM*

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Argyrodes trigonum utilizes a wide range of foraging tactics depending on a variety of factors including host species. Previous studies have indicated that it tends to be primarily a web stealer and/or predator of *Neriene radiata*. In a laboratory setting, a high percentage of *N. radiata* webs invaded by *A. trigonum* will result in host emigration. One of the major objectives of the present study was to determine whether host emigration primarily represents failed predation attempts or whether *A. trigonum* can take advantage of an abandoned host web (web stealing). Furthermore, if the host web itself is a resource to *A. trigonum*, they would also be expected to scavenge for empty webs. In this study, 144 individual occupied webs of two common host species, *Neriene radiata* and *Pityohyphantes costatus*, were located and marked. Each web was then checked daily until its complete disappearance. The frequency of invasion by *A. trigonum* of occupied and unoccupied webs, duration of stay in the web by its host, duration of stay in web by *A. trigonum*, and web persistence were recorded for all webs. In addition, observations of feeding, predation, courtship, parasitism, and presence of other arthropods in or near the webs were recorded. Although *A. trigonum* shows wide variation in length of stay in host webs, most spend about 1-3 days in a host web. Those that stayed longer (4-7 days), only left when the web was completely deteriorated. Empty webs are also frequently invaded. These results suggest that some individuals make use of empty host webs, but the majority move frequently from web to web, perhaps in search of host spiders as prey. Developmental stage accounts for some, but not all, differences seen among individual *A. trigonum*.

EFFECT OF FIRE ON POPULATIONS OF RARE BURROWING WOLF SPIDERS IN FLORIDA SCRUB: UPDATED RESULTS AND FUTURE STUDIES.

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Two rare burrowing wolf spiders, *Geolycosa micanopy* and *G. xera* (Araneae, Lycosidae), occur sympatrically in fire-maintained, upland scrub habitats at the Archbold Biological Station, Highlands Co., Florida. To determine the responses of spider populations to burning, students and I have censused burrows of both spiders annually during winter in 15 replicate, 100 m^2 plots in a scrubby flatwoods for 3 years before it was burned by a wildfire in May 1989 and for 5 years thereafter. To measure vegetative development, we estimated the percent of the ground covered by leaf litter at randomly located sites in each plot. Densities of both *Geolycosa* species increased threefold, from about 0.1 to 0.3 spider per m^2, within just 9 months after the fire. In subsequent years the density of *G. xera* declined sharply so that within 4 years this species was back to preburn values. In contrast, the density of *G. micanopy* was stable for 3 years after the burn event before it began to decline. Densities of both *Geolycosa* species were negatively correlated with abundance of leaf litter, xera more strongly than micanopy. Hence, both *Geolycosa* species seem to be fire-adapted. *G. xera* appears to require very frequent burns (every 3-7 years) that keep the scrub sparse and the sandy soil barren, whereas *G. micanopy* tolerates longer burn intervals (7-10 years) and greater litter accumulation. To test this idea, we plan to burn these tracts in 1996 after the annual census (6 years postburn) is completed and then we will continue our annual censuses. Furthermore, we intend to establish additional replicate sites wherein habitat features are manipulated to simulate certain effects of burning.

MALE SECONDARY SEXUAL CHARACTERISTICS, BODY SIZE AND FEMALE MATE CHOICE IN *SCHIZOCOSA OCREATA* (ARANEAE: LYCLOSIDAE)

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Male *Schizocosa ocreata* wolf spiders have prominent tufts of bristles on their forelegs, which are used in courtship displays. Previous studies have shown males with larger tufts elicit female receptivity more often. However, body size may covary with tuft size, and influence female choice as well. Field-collected females were randomly paired with males of varying body and tuft size. Results suggest that body size and tuft size together influence female receptivity-females prefer larger males with large tufts. Males from the extremes of the variation range, i.e., with large and small body size-tuft size, were mated with females selected at random and their offspring were raised under identical controlled conditions. The body and tuft sizes of F_1 offspring differed from the parental population, as well as from each other, suggesting both environmental and genetically-determined variation. Female preference varied among the F_1 offspring; daughters of small males showed receptivity more often to small tufted males, and daughters of large males showed receptivity more often to medium and large tufted males. This result suggests a genetic correlation between this male secondary sexual characteristic and female preference. As both body size and tuft size are larger in lab-reared spiders, variation in field populations may reflect differential foraging success. Female choice based on body size and tuft size may be adaptive, as these traits could indicate male fitness.

A COMPARISON OF AGGRESSIVE BEHAVIOR DURING MALE-MALE INTERACTIONS OF TWO CLOSELY RELATED SPECIES, *SCHIZOCOSA OCREATA* AND *S. ROVNERI*

Delaney, K.J.*, and Uetz, G.W. Dept. of Biology, University of Cincinnati, Cincinnati, OH 45214

Strong selection pressure from the risk of predation by spiders of the same and/or different species has resulted in highly species-specific communication behaviors. My research concerns the role communication behavior in species and sex recognition, and assessment of opponents, by two closely related wolf spider species, *Schizocosa ocreata* and *S. rovneri* (Lycosidae). Previous research has shown that behavioral mechanisms during courtship serve to reproductively isolate these species. However, the role of species-specific signals in species and sex recognition in the context of aggression has not been fully examined. Forty male-male conspecific interactions were staged for each species. Half of the trials for each species involved pairings of males that differed in body length by less than 10% (symmetric), and the other half of trials for each species had pairings of males differing by 10% or more in body length (asymmetric). Preliminary studies show that while some of the display signals seen in male-male interactions are species-specific, they are also similar to the behaviors seen during courtship of that same species, e.g. the "jerky tap" for male *S. ocreata* and the abdomen "bounce" for male *S. rovneri*. This suggests that differences between signals used in courtship and aggressive interactions are subtle, and thus understanding species and sex recognition in wolf spiders will require quantitative comparisons.

ESTIMATING SPECIES RICHNESS AND MODELING SPECIES ASSEMBLAGES.

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

A model is proposed that suggests that a dynamic equilibrium exists between any particular type of habitat and the spider species

assemblage that exists within as well as with the regional pool of species. Two different species richness estimators are examined as they relate to the proposed model. Examples are provided for samples from Cape Cod, MA, El Junque, Puerto Rico, and Taboga, Guanacaste Province, Costa Rica. Using the model demonstrates a consistency between different regions for different habitat types and the regional pool of species.

A COST OF VIVIPARITY AND PARENTAL CARE IN SCORPIONS: REDUCED SPRINT SPEED AND BEHAVIORAL COMPENSATION

Formanowicz, D.R., Jr.* and Shaffer, L.R. Dept. of Biology, University of Texas at Arlington, Arlington, TX 76019

Future reproduction of viviparous animals may be affected by current reproduction via increased predation risk resulting from decrease mobility during pregnancy. We examined a cost of viviparity and parental care in the scorpion *Centruroides vittatus* by measuring sprint speed at three reproductive stages: pregnant, carrying offspring, and post-dispersal of offspring. Pregnant female speeds were 84% of post-dispersal speeds and were correlated with both absolute and relative measures of litter size. Speed while carrying offspring was 61% of post-dispersal speed and was correlated with litter size and mass. Most females carrying offspring did not run but assumed a defensive posture. Our results suggest that female scorpions experienced a cost to viviparity and parental care and that the cost may be reduced by employing an alternative defensive strategy.

COMPETITION AND HABITAT SELECTION IN SYMPATRIC WOLF SPIDERS

Gray, M.M. Dept. of Biology, The College of Wooster, Wooster, OH 44691

This study investigated whether competition plays a role in habitat selection between two species of nocturnal, sympatric wolf spiders, *Hogna osceola* and *H. pseudoceratiola*. It was found that food was limited in the environment making the potential for competition possible. While spiders overlapped in the types of foraging substrates occupied, the larger species, *H. osceola* was found more often on prey-rich leaf litter, while the smaller species, *H. pseudoceratiola*, foraged primarily on prey-poor sand. Enclosure experiments were performed to determine whether interference interactions between the species influenced substrate use. *Hogna pseudoceratiola* in high density enclosures occupied sand more often when present with *H. osceola*, which lent support for the existence of interference competition, while *H. pseudoceratiola* in low density treatment enclosures gained less weight than those in control enclosures, which supported exploitative competition. Overall, it appears as if competition may play an important role in the habitat selection of these spider species.

DO SPIDERS REALLY TAKE PREY IN PROPORTION TO THEIR AVAILABILITY? FUNCTIONAL RESPONSES FROM A ONE SPIDER, THREE INSECT FIELD SYSTEM

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The notion that hunting spiders take prey more or less in proportion to their availability is unsupported by useful data. Laboratory functional response data are not informative because they invariably involve single prey species, and cafeteria studies show only that noxious prey are not rejected; relevant field data are nonexistent. A field population of the lycosid *Pardosa ramulosa* feeding on three aquatic insect species in a salt marsh shows a classical Type II functional response to only one of them; there is no correlation between availability and predation rate for the other two. Reasons for and implications of these results are discussed.

LEG ORNAMENTATION AND ENHANCEMENT OF THE EFFICACY OF MALE COURTSHIP DISPLAY IN WOLF SPIDERS

Hebets, E.A.*, and Uetz, G.W. Dept. of Biological Sciences, University of Cincinnati, Cincinnati, OH 45221

Within the wolf spider family Lycosidae, there are a variety of secondary sexual characteristics displayed in mature males, including brushes of black hairs on the tibia of the forelegs; pigmentation on the foreleg of the femur, tibia, tarsus, or any combination of the above; or no decoration at all. This study tests the hypothesis that ornamentation evolved as an amplifier that enhances the efficacy of leg waving displays. In examining the courtship and morphology of 23 species of Lycosidae, a significant association was found between the presence of leg decoration and an active leg waving display during courtship. Of 14 species with leg waving displays used during courtship, 12 had leg decorations, while none of the species lacking leg waving displays had decorated forelegs. Two species with minimal leg waving displays lacked decorations, suggesting that displays evolved first. Research in progress compares responses of females from several *Schizocosa* species with varying degrees of leg decoration and leg waving displays to manipulations of male courtship components with the use of video imaging techniques. Females are tested for receptivity to different animated male courtship sequences with alteration of male foreleg morphologies, including males with and without pigment and/or foreleg brushes. A non-ornamented, non-leg waving species of *Schizocosa* (*S. duplex*) was shown to utilize vibratory components of courtship over visual; vibratory courtship was both necessary and sufficient in eliciting female response, while visual was neither. Females of this species showed no receptive responses to any video stimulus, suggesting that *Schizocosa duplex* shows no pre-existing bias for leg ornamentation in male courtship displays. Responses of other species will be discussed.

INTRAGUILD PREDATION AMONG CONGENERIC WOLF SPIDERS IN THE FLORIDA SCRUB

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Intraguild predation (IGP) refers to predatory interactions between different species which use similar resources. It is distinguished from predation in the traditional sense because by preying on a guild member, a predator not only gains a direct benefit of energy, but may also benefit from removing a potential competitor for resources. Because most spiders are generalist predators on arthropods, different species may interact as both competitors and predators, making them model organisms for the investigation of intraguild predation. The goal of this study was to examine the potential of IGP interactions between two species of *Hogna* sympatric in scrub habitats at Archibold Biological Station: *H. osceola* (the larger species) and *H. pseudoceratiola*. Since hunger is a factor affecting the likelihood of IGP, a measure of food limitation was obtained for each species. A measure of the actual diet of each species was also obtained by collecting 50-100 individuals each night and scoring prey types fed upon. Field data show that spiders are not near satiation, and only 8-10% of spiders collected on a given evening had prey, indicating that food is available in a limited supply. Spiders are capturing prey that are smaller than themselves, even when these prey are other spiders. Between 8% (*pseudoceratiola*) and 21% (*osceola*) of the diet of each species consists of other spiders. Between 50% (*pseudoceratiola*) and 100% (*osceola*) of the spider prey taken represented cannibalism or IGP on the other species.

DYNAMICS OF THE SELFISH HERD: A DYNAMIC OPTIMIZATION MODEL FOR WEB POSITION IN COLONIAL SPIDERS.

Jakob*, E. M. and Uetz, G. W. Biology Dept., Bowling Green State University, Bowling Green, OH, 43403.

In colonies of the spider *Metepeira incrassata*, individuals face trade-offs between the selective forces of predation risk and increased prey capture. At the periphery of the colony, prey availability is generally higher than in the core, but predation risk is also high. These tradeoffs vary with spider size: large spiders on the periphery are most likely to be attacked, and differences in food level between the locations are most pronounced for small and medium spiders. Differential fitness and size-related predation result in a dynamic

structure for spider colonies, with larger reproductive individuals seeking cover in the core, and smaller immatures remaining on the periphery. We present a dynamic model that employs the state variables of spider size, energy level, and current location to predict where an optimal spider should build its orb. Results of two field experiments suggest that a spider's body size and energy level influence its choice of location in the predicted manner.

EPIGYNAL DEVELOPMENT IN THE WOLF SPIDER, *SCHIZOCOSA OCREATA*

Klawinski, Paul Dept. of Biology, University of Texas at Arlington, Arlington, TX 76019

The ability to discern the sex of individuals early in development can aid in a variety of ecological, behavioral and evolutionary studies. Determining sex ratios, examining gender specific behavior and distributing sexes equally among experimental treatments are all impossible in spiders without external sexually dimorphic structures. By raising a series of wolf spider litters from hatching to adulthood, I have been able to examine the ontogenetic development of the epigynum within individuals and quantify the variation in the number of molts required to reach maturity in the spider, *Schizocosa ocreata*. The adult epigynum of *S. ocreata* is characterized by having a hooded atrium and a median septum that terminates in a transverse piece that is as an oval excavation without sclerification in hatchlings and this excavation remains relatively unchanged until the antepenultimate instar at which time the process of epigynal growth and sclerification begin. This sclerification can manifest itself as a solid epigynum or an excavated epigynum that begins wider than it is long. With subsequent molts, the epigynum increases in length at a rate faster than width increases until the adult, fully excavated epigynum is reached with measurements that are longer than wide. The ratio of epigynum width to epigynum length is a firm measure of maturity in female *S. ocreata*, mature individuals having a width:length ratio<1 while immatures have a width:length ratio>1.

SPIDER SURVEY FROM A SOUTHWESTERN ILLINOIS SAND PRAIRIE

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We collected spiders during the spring and summer of 1993 with pitfall traps from a unique sand prairie site, which yielded an interesting diversity and mixture of xeric and mesic species. The study site encompassed approximately one hectare, was completely surrounded by cultivated farm land, and was located within the Mississippi River flood plain in Madison County, Illinois. The collection had a total count of 377 individuals representing 2 families, with Lycosidae being the most diverse in number of species. The highest individual count for a single species was that of the salticid *Habronattus agilis* (Banks). Additional taxa and seasonal distributions will be reported.

WHAT CAN *GEOLYCOSA* WOLF SPIDERS TELL US ABOUT FLORIDA BIOGEOGRAPHY?

Marshall, S.*, and Deyrup, M.* Dept. of Zoology, Miami University, Oxford, OH 45056

Wherever found, *Geolycosa* wolf spiders are associated with sand or sandy soils. Given this habitat requirement, it is perhaps no surprise that Florida has far more species of *Geolycosa* than any other state or region. There are 9 species of *Geolycosa* wolf spiders in Florida, 6 of which are associated with scrub and sandhill habitats. These xeric upland ecosystems are found on ridges which are remnant sand dunes deposited during past interglacial periods when sea levels were higher. The distribution of these six xeric-adapted species of *Geolycosa* correlate with two distinct dune systems: those deposited during the Wicomico shorelines in central Florida, and those deposited during the later Pamlico shorelines nearer the present-day coasts. Two *Geolycosa* species are associated with the central ridge complex: *G. hubbelli* Wallace and the two sub-species of *G. xera*: *G. x. xera* McCrone and *G. x. archboldi* McCrone. The more low-lying coastal scrubs of the peninsula harbor *G. patellonigra* Wallace and *G. micanopy* Wallace. In the scrubs of the panhandle, *G. escambiensis* Wallace is found west of the Apalachicola River and *G. patellonigra* Wallace and *G. ornatipes* (Bryant) to the east. Most of these species are endemic to Florida. The destruction of Florida's scrub and sandhill habitats for citrus and housing make identification of the more unique scrub habitats a conservation imperative. Data on the biogeography of *Geolycosa* will help identify areas of special concern.

MECHANISMS OF HABITAT SELECTION IN THE SILVER GARDEN SPIDER, *ARGIOPE TRIFASCIATA*

McNett, B.J.* and Rypstra, A.L. Dept. of Zoology, Miami University, Oxford, OH 45056

The mechanisms by which the silver garden spider, *Argiope trifasciata*, selects certain habitats over others was investigated in the summer and fall of 1994. In a previous survey of old field habitats in southwest Ohio, we found the majority of spiders in areas where thistle was the dominant plant, fewer spiders in grassy areas, and no spiders were found associated with goldenrod. Preliminary evidence suggested that this preference was not due to prey availability, but rather to habitat complexity, which might provide more suitable web attachment sites. We performed four manipulations in one or more of the following habitats: thistle (most complex), natural grass (intermediate complexity) and grass where the vegetation had been cut (least complex). In the first experiment, spiders were added to two types of replicated grassy plots. In half of the plots, we increased structural complexity by adding artificial web supports and the other half were left as controls and lacked supports. The second experiment was also conducted in grassy areas and involved the addition of spiders to one of three artificial plots, some of which had been structurally simplified by the removal of thistle plants. In all cases, spider establishment and residence time were greater in areas which were more structurally complex. In a final experiment, we selected two populations of spiders, one in the grass and one in thistle. Half the spiders in each area were fed on alternate days and the rest were left to natural prey capture. The data from the feeding experiment suggest that prey capture has less impact on spider establishment and residence time than habitat structure.

THE EFFECT OF DIFFERENCES IN HABITAT UTILIZATION ON PREY CAPTURE BY *ARGIOPE AURANTIA*

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Argiope aurantia build a large orb web in open fields and along the forest edge. Habitat utilization can affect a number of factors in the spider's ecology including the spider's diet by influencing prey encountered by the spider and/or by affecting web characteristics. The habitat features investigated include the site for web attachment (vegetation type and height) and nearest flower in bloom (vegetation type and distance). Prey capture was described by observations of the number, taxa, and size of prey captured by the spiders on the grounds of Blue Mountain College during autumns of 1989-1992. The frequency of hymenopterans captured was higher for spiders in the open field when the nearest flower was goldenrod (*Solidago* sp.) or boneset (*Eupatorium* sp.) and when the distance to nearest flower was short. The frequency of orthopterans captured was higher when the web attachment vegetation was grass or the height of vegetation for web attachment was low. However, these habitat features were not significant factors determining taxa of prey captured for spiders on the forest edge except nearest flower. *Argiope aurantia* could select a web-site to increase encounters with prey by selecting a site near flowers attracting hymenopterans and other insect pollinators and/or by selecting a web attachment site that produces favorable web characteristics for prey capture. Further research is required to determine if web-site selection by *A. aurantia* is to increase prey capture efficiency or is based on some other factor(s).

CLADISTIC ANALYSIS OF THE *ATYPOIDES* PLUS *ANTRODIAETUS* LINEAGE OF MYGALOMORPH SPIDERS (ARANEAE, ANTRODIAETIDAE).

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Cladistic analyses of the antrodiactid spider genera *Atypoides* and *Antrodiaetus* indicate that revisions to the phylogeny proposed by Coyle in 1971 are warranted. Twenty-nine potentially informative characters were used in the analyses, which were performed using PAUP's *a posteriori* weighting options. Three independent analyses were performed, each with a different outgroup. These outgroups were 1) *Aliatypus*, the putative sister genus, 2) *Aliatypus gulosus*, the most primitive *Aliatypus* species, and 3) a hypothetical ancestor based on character states found in *Aliatypus* and the *Atpidae*, the putative sister group of the antrodiactids. All three analyses produced the same set of four most parsimonious trees which support the following principal conclusions: 1) *Atypoides*, as defined by Coyle, is paraphyletic (*A. riversi* plus *A. gertschi* share with *Antrodiaetus* a common ancestor not shared with *A. hadros*). 2) *Antrodiaetus roretzi* is a relict species which shares a unique common ancestor with all other *Antrodiaetus* species. 3) The unicolor group of nine *Antrodiaetus* species is polyphyletic; seven of these form a recently-derived clade, (*A. occultus* (*A. yesoensis*, *A. cerberus*, (*A. montanus*, (*A. pugnax*, *A. hageni*))), and the other species, *A. pacificus*, *A. robustus*, and *A. unicolor*, are derived from more ancestral stock. 4) The *lincolnianus* group of three *Antrodiaetus* species represents a valid clade. Our phylogeny suggests that *Antrodiaetus* originated in North America and that two separate vicariance events led to the evolution of the two east Asian members of this otherwise North American assemblage. Vicariance events that are indicated by geological evidence and consistent with our phylogeny are postulated to account for the present distribution of North American species. New putative synapomorphies of *Antrodiaetus* and *Antrodiaetus* plus *Atypoides* are proposed.

DISTRIBUTION AND HUNTING ACTIVITY OF THE WOLF SPIDER *PARDOSA LAPIDICINA* IN THE INTERTIDAL ZONE

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The wolf spider *Pardosa lapidicina* Emerton exploits the entire intertidal zone of bare cobble beaches in Narragansett Bay, Rhode Island, sometimes moving over 40 m during a tidal cycle, but never submerging. *Pardosa* exhibits markedly different activity patterns high and low in the intertidal. High on the beach the spiders spend most of their time motionless, employing a sit-and-wait strategy and sun-basking, consistent with behavior reported for other members of the family. In the low-tide area they move over 10 times as frequently and more closely approximate the role of hunters, a pattern resembling that attributed to lycosids by earlier workers. The pattern of foraging in this population suggests that differences in performance have a strong microenvironmental basis.

THE AUSTRALASIAN GROUND SPIDERS OF THE GENUS *ANZACIA* (GNAPHOSIDAE): TAXONOMY AND DISTRIBUTION.

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The spider genus *Anzacia* was established by Dalmas (1919). He included in this genus five species from the genera *Drassodes* and *Leptodrassus*, with the type species being *Drassodes perexiguus* Simon, 1880. The catalog of Bonnet (1955) includes 6 species of the genus *Anzacia*, and Roewer's (1955) catalog includes 19 species of *Anzacia*. Our study of all available type material transferred to this genus shows that only five species belong in the genus *Anzacia*, and three of them are the same species Dalmas (1919) treated. The genus is distributed in South and East Australia, Tasmania, New Zealand, Philip Island, Norfolk Island, New Caledonia, and SE New Guinea. The taxonomical position of the genus and its distribution in the Australasia will be discussed.

PRE-SAMPLING SENSORY INFORMATION AND PREY DENSITY ASSESSMENT IN WOLF SPIDERS (ARANEAE: LYCOSIDAE)

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Sensory cues from prey are an important determinant of foraging patch residence time for wolf spiders. The ability of spiders to perceive difference in prey density prior to feeding in a patch and vary residence time accordingly may be a possible mechanism underlying the aggregative numerical response seen in some species. This study examines the use of sensory information by wolf spiders to assess prey density. Spiders were exposed to four densities of crickets (1,3,10,20) with different stimuli (visual and vibratory information from crickets, visual only, and vibratory only). The spiders were not allowed to feed during trials and the duration of time spent in each experimental foraging patch was recorded. Results indicate that spiders vary patch residence time based on sensory cues alone, and spend longer periods of time in higher density patches, even without food rewards. Visual cues were sufficient to perceive differences in density even though vibration information is used to locate prey, although spiders could only distinguish between different prey densities when prey exceed a threshold number. Measurements of vibration levels of crickets under experimental sensory treatments conform to test results, suggesting that spiders use cricket movement as the primary mechanism of determining patch residence time.

INTERACTIONS BETWEEN SCORPIONS AND SPIDERS IN THE NAMIB DESERT

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Predation by scorpions is a key determinant of the densities of some spiders in the Namib Desert. The scorpion *Uroplectes otjimbinguensis* (Karsh)(Buthidae) and the spider *Gandanimeno* species (Erisidae) live on Acacia trees. The abundance of these taxa on a tree is a function of differential dispersal, extinction and a predator-prey relationship with scorpions eating spiders. Spider populations are severely reduced when the co-occur with scorpions. On river trees, scorpions are always dominant (10->50/tree) with spiders uncommon (5-20/tree). Densities are more variable on trees isolated from the river. Some trees have no scorpions and many spiders (50-400/tree; some, no scorpions nor spiders; and some, no scorpions and few (<20) spiders. This pattern exists because neither scorpions nor spiders disperse far from the river, yet spiders disperse further than scorpions. Dense spider populations occur only in more isolated trees where scorpions are absent. In two experiments each lasting one year, spiders increased 290% when scorpions were removed from trees and decreased 42% where they were added to trees where they were absent. Scorpion predation also changed age structure: more young spiders occur when scorpions are naturally absent or experimentally removed.

GENETIC VARIABILITY IN *APTOSTICHUS SIMUS* (ARANEAE: CYRTAUCHENIIDAE)

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Three trapdoor spider *Aptostichus simus* lives in restricted coastal dune communities in southern California and Baja California. We conducted an electrphorectic survey of variability within and among nine populations of *A. simus* from Pt. Dume State Beach to Sycamore Cove Beach, California, based on variation at 13 gene loci. A. simus has a very low level of genetic variability (observed heterozygosity =0.006), as compared to genic variability in other spiders and invertebrates in general. Moreover, in six populations, all individuals were genetically identical. The low level of variability in *A. simus* populations is probably largely the result of genetic drift caused by bottlenecks associated with population establishment and stochastic events occurring thereafter, such as storms, coastal erosion and human activity, as well as by environmental homogeneity associated with a subterranean existence in coastal dune ecosystems. To determine whether this is a general pattern, we are now determining levels of variability in fossorial spiders that occupy coastal dunes along the Great Lakes and East Coast.

IN SITU BURROW TEMPERATURE VARIATION FOR *BRACHYPELMA VAGANS*

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Temperature variation within the burrows of *Brachypelma vagans* was tested in situ for sensitivity to two factors: burrow entrance plugging and proximity to overlying boulders. Burrows located under large stones experienced a broader daily temperature range and were warmer by late afternoon than those not under stones. Burrows in which the entrance was occluded with a soil plug were better insulated against nighttime temperature drops and were significantly warmer during the early morning than burrows with open entrances. The results indicate that *B. vagans* lives within a very narrow temperature range, and suggest that burrow-dwelling tropical theraphosids can thermoregulate the burrow environment through behavioral manipulation and choice of burrow site. Implications for captive-based conservation are discussed.

RANDOM ACTS OF VIOLENCE; KILLING FOR FUN IN THE SPIDER; *ACHAEARANEA TEPIDARIORUM*

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The functional response of the spider species, *Achaearanea tepidariorum* (Araneae; Theridiidae) was determined for four prey species in a laboratory environment. Individual spiders were placed in habitats and provided with prey at densities ranging from 1 to 30 individuals. Two of the prey species were chemically protected from the spiders and the number killed declined at high prey densities. However, the weight gain of the spider suggest that it consumed a large proportion of the biomass of these insects. On more palatable prey, the spider displayed a very steep functional response killing up to 22 insects in a 24 hour period of time. Total weight gain of the spider was similar in these cases to the weight gain when only killing a small number of the less palatable prey and in some cases the spider lost weight by killing more insects. This suggests that the spiders were feeding very little on many of insects killed. Since the capture of these prey incurred relatively little additional cost and they were abundant and, perhaps even bothersome, it seems the spider was killing them to get them out of the way rather than to consume them.

INTERPOPULATION VARIATION IN COURTSHIP AND REPRODUCTIVE ISOLATION AMONG THREE POPULATIONS OF BRUSH-LEGGED WOLF SPIDERS

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Brush-legged *Schizocosa spiders* (*S. nr. ocreata*) were collected from three populations and two physiographic regions in central Mississippi (Mississippi River Delta and Loess Bluffs of central Mississippi) to experimentally determine the extent of reproductive isolation among the populations. Previous studies have shown a high degree of variation in male courtship behavior among populations of brush-legged spiders in Mississippi with apparent reproductive isolation between many of the populations. Ten homotypic and heterotypic pairings of mature males and females were made among all three populations. Each courtship bout was video taped in such a way as to record both male and female behavior. the two populations from the Mississippi R. Delta (Leroy Percy S.P. and Stoneville woods) appear not to be reproductively isolated with a comparable number of heterotypic and homotypic matings. No asymmetry was detected. Males from the Stoneville population courted females from the Loess Bluffs (Grenada) population with slightly less frequency than males from Leroy Percy. Grenada females showed aggression toward males of both Leroy Percy and Stoneville. Grenada males courted only Grenada females. Grenada males displayed escape behavior or immobility in the presence of females from the other two populations. Grenada females showed aggression toward heterotypic males. Previous studies showed significant differences in the frequency and sequence of four different male courtship displays among all three populations studied here. This study suggests that the Leroy Percy and Stoneville populations are not reproductively isolated from each other but are strongly so from the Grenada population. We are currently examining morphology, phenology, population density and geologic history to determine the mechanisms and patterns of species differentiation in brush-legged wolf spiders in Mississippi.

DOLOMEDES AND DIMPLES: HORIZONTAL LOCOMOTION AT THE WATER SURFACE

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Small animals with hydrophobic surfaces can support themselves at the air-water interface because the upward component of the water's surface tension exceeds the weight of the animal. The same hydrophobicity of the cuticle of an amphibious arthropod such as *Dolomedes* makes horizontal locomotion on water quite difficult. The friction that allows efficient terrestrial locomotion has a magnitude very close to zero. How do these spiders and their analogs among insects (e.g., water striders) produce forward motion in the near absence of friction? The orthodox answer to this question, derived solely from fluid dynamic theory, is that the animals push off against capillary waves created by sweeping their legs across the surface of the water. I have investigated this phenomenon using *Dolomedes* spp. as subjects, a variety of transducers to measure forces, and high-speed video to resolve the natural dynamics of the spiders' surface locomotion. In accord with theory, the backward sweep of a spider's leg does, only at velocities > 20 cm/s, create a wave against which the leg can push. In contrast, the horizontal force generated by the leg sweeping across the water's surface varies curvilinearly with velocity, with no elbow or other discontinuity near 20 cm/s, a result contrary to predictions from theory. The force of a spider leg pressing down on the water surface creates a depression or dimple in the water, and optical measurements indicate that the movement of this dimple produces drag which contributes to the spider's forward locomotion. Video analysis indicates, further, that both capillary waves and the movement of dimples contribute to *Dolomedes*' ability to move horizontally at the water surface.

A METHOD TO QUANTIFY FOOD LIMITATION IN THE FIELD

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A laboratory procedure is presented, which allows us to convert the state of hunger of animals from the field into the currency days of starvation using species, sex and stage specific reference curves. By transforming into this can be compared, and seasonal variation and habitat differences can be analyzed. Data will be presented illustrating results obtained for linyphiid spiders and carabid beetles from a Danish cereal field.

PREY CAPTURE VARIANCE IN COLONIAL WEB-BUILDING SPIDERS: A SECOND LOOK AT RISK-SENSITIVITY

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Group foraging is rare in spiders, and colonial web aggregations usually occur only where prey availability is high. Previous studies have shown that colonial web-building increases individual prey capture rates, but if this is true, why does group foraging not occur more often where prey are scarce? Risk-sensitivity suggests an explanation, as the variance of prey capture rates is reduced in groups: risk-averse spiders should join groups only when prey availability exceeds a threshold level. Field studies have shown that group foraging varies as predicted between species, between populations of a single species, and among sites within a population. However, recent models suggest a previously-unrecognized oversight: the necessity of examining variance within individuals over time rather than among individuals within populations. Additionally, these models have shown that mechanisms responsible for prey variance reduction in colonial webs may be less effective than previously assumed. New field data suggest that while prey variance over time may be somewhat less for individual spiders in groups than for solitaries, the relationship between colonial web-building and variance in prey capture is far more complex than previously thought.

The influence of risk-sensitivity on reproductive success and the evolution of colonial web-building will be discussed.

THE BROWN RECLUSE SPIDER IS THE ELVIS OF SO. CALIFORNIA SPIDER FAUNA: MANY CLAIM TO SEE IT BUT THERE IS NO PROOF

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In southern California, there occurs an occasional hysteria regarding the brown recluse spider. The most recent episode occurred when a woman developed systemic necrosis, which resulted in a quadruple amputation. Despite the fact that no spider was captured or seen inflicting the bite, the brown recluse was hypothesized to be the culprit by the medical field and subsequently, this information was epidemically spread by the media. The ensuing loxoscelophobia touched many southern California households where I have been regaled by a plethora of layfolk who have seen them or know people who have been bitten or lost limb or life to one. There is more of a psychological or sociological aspect to the hysteria than a biological one since there is no evidence to support extant brown recluse spider populations in southern California. There are several *Loxosceles* spp. native to California as well as a very healthy population of the South American violin spider, *L. laeta* but neither are these spider populations extending their range nor are the areas of their occurrence hotbeds of necrotic wound activity. The outbreak of brown recluse hysteria is more related to media attention than to actual spider encounters.

POSTER ABSTRACTS

MECHANISMS OF GROWTH IN STARVED AND SATIATED WOLF SPIDERS IN THE LAB

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It is well documented that feeding levels have a major effect on both rates of growth and adult body size in spiders. What is not well understood, however, are the mechanisms responsible. The timing of ecdysis relative to nutritional state will have a major effect on the growth increment for that molt. In this study we report the results or rearing studies in the laboratory on two wolf spiders: *Pardosa milvina* and *Hogna helluo*. The *Pardosa* were field collected early-instar individuals. They were randomly assigned to two different feeding regimes: high fed (an amount equal to their body weight twice a week) and low fed (an amount equal to half their body weight once a week). We found evidence for a reduction in the growth increment for the starved spiders relative to the satiated spiders. For the test with *Hogna*, two clutches produced in the lab were used. Twenty-five from each clutch was fed twice a week and twenty-five were fed every 10 days. The spiders were weighed every two weeks and checked twice a week to see if they molted. If they molted their carapace width was recorded. We found that molting was delayed and that the increment of growth was significantly less for starved spiders than for spiders fed to satiation.

INTER-AND INTRA-SPECIFIC COMPETITIVE INTERACTIONS AMONG WOLF SPIDERS FOUND IN A SOYBEAN AGROECOSYSTEM

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We studied competitive interactions within and between two wolf spiders species in laboratory mesocosms. The mesocosms were established in 40 liter aquaria. They were designed to mimic structural elements of high-till and no-till soybean fields: bare earth and mulch respectively. Census data suggest that both species prefer no-till areas where there is more vegetative debris. In one study we examined the effects of density on weight gain in early-instar *Hogna* and in a second study we tested for indirect effects of the larger *Hogna* on smaller *Pardosa*. **INTRA-SPECIFIC EFFECTS-**For the first test we used lab-reared *Hogna helluo* bred from adults collected in the field. We examined space use and weight gain at two density treatments: 1) four *Hogna* and 2) eight *Hogna*. We found that the *Hogna* in the high density treatments used the bare dirt end of the tank at a much higher rate than the low density treatment. Also, the *Hogna* in the high density treatment gained significantly less weight. The variation in weight gain was much higher in the high density treatments as well, indicating that intraspecific dominance interactions may have been responsible. Thus we have evidence that density affects both foraging and space use. **INTER-SPECIFIC EFFECTS-**For the second test the two treatments were: 1) four *Pardosa* per tank and 2) four *Pardosa* and one *Hogna*. We did not find a difference in space use by *Pardosa*. However, predation on *Pardosa* by the *Hogna* may confound these results. In the tanks that contained only *Pardosa*, the spiders gained more weight than the tanks with both species, but this difference was not significant. There was a difference in the variance between the treatments indicating that the *Hogna* had an effect on the foraging behavior of the surviving *Pardosa*.

ABUNDANCE AND DISTRIBUTION OF WANDERING SPIDERS IN SOYBEAN FIELDS AND ADJACENT HEDGEROWS

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The use of spiders as one component of biological control within Integrated Pest Management (IPM) necessitates a thorough understanding of these entomophages' phenologies, movements, and habitats. Conventional tilling and harvesting practices severely alter habitat structure in the fields. As a result, recolonization is required to once again acquire natural predator populations. Hedgerows bordering tilled areas are the most prevalent and proximate refugia and source for colonization. This study was initiated to assess the abundances and distributions of spiders across the rather abrupt ecotone found between wooded hedgerows and soybean monocultures. The preliminary data presented here are from the first year of this continuing project. Spiders were collected from three separate sites by establishing a grid of 25 pitfall traps extending from within the hedgerow, across the ecotone, and into the soy field. Traps were open weekly for 3 consecutive nights. Early in the season before the soy had grown, most spiders were found in the hedgerow and edge. As the season progressed and the soy formed a canopy, the number and diversity of spiders in the soy field tended to increase. This was especially evident for the lycosids, whose numbers in the soy became greater than in the hedgerow. Upon senescence of the soy, spiders seemed to move back into the hedgerow as the soy plants withered and lost their leaves. Thus, it appears hedgerows may serve a vital role as refugia and points of emigration for spiders to reenter soy fields after agricultural manipulations. These data attest that hedgerows are a vital part of agroecosystems. Mark and recapture experiments and collection of airborne arthropods are being conducted this season to determine the actual movements of wandering spiders and to assess the importance of areal immigration.

LAB ENVIRONMENTAL CONDITIONS AND VISUAL PERCEPTION DISTANCES IN *SCHIZOCOSA OCREATA* WOLF SPIDERS (ARANEAE: LYCOSIDAE).

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The wolf spider *Schizocosa ocreata* is found in complex deciduous forest leaf litter, which is not conducive to long-distance vibratory communication. Studies have shown this species use primarily visual cues in foraging for prey and communicating with other spiders. This study examines the influence of environmental conditions on visual prey detection, in lab-maintained and lab-reared spiders. Spiders were collected from the field and subjected to two different maintenance conditions (simple and complex) for two weeks. The simple condition was a white opaque deli dish and the complex treatment consisted of soil and leaves in larger containers (30 cm). The spiders were then placed into an arena and shown a cricket at varying distances. Hunger levels were controlled by starving the spiders seven days before running all behavioral trials. The distance at which the spider first perceived the cricket was scored based on an orientation towards the stimulus. There was no statistically significant difference between the distance at which the males or females oriented towards the cricket nor between the two environmental condition treatments. The spiders were mated and

offspring raised to maturity under controlled conditions in white opaque containers. The deli dishes the spiders were reared in are 9.2 cm in diameter. Previous studies have shown that the average home range are for a male of this species is 450 cm^2 and females is 350 cm^2. The long-term rearing of the spiders in these small and featureless containers may affect the distances at which they are able to perceive stimulus. They were run in the same apparatus upon reaching maturity and there was no difference between the males and females in the distances at which the spiders oriented towards the stimulus, nor was there any differences between these spiders and the field-collected spiders tested previously. These results suggest that the spiders raised in controlled containers with limited amounts of visual stimulus are not affected by the conditions.

WEB DESIGN AND RISK-SENSITIVE FORAGING IN SPIDERS

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Individual plasticity in orb-weaver spider web design has been largely ignored by optimal foraging theory. Some recent studies have assigned daily changes in orb web parameters to tradeoffs in resource partitioning (Higgins and Buskirk 1992, Sherman 1994). A number of observations from these papers suggest some variation in web design corresponds to tradeoffs within foraging tactics rather than tradeoffs between life history parameters and foraging strategies. In these studies, spiders experiencing low foraging success built webs with longer radii given their body size compared to spiders enjoying higher foraging success. That an inverse relationship is seen between foraging success and web size suggests that larger webs have disadvantages in some aspect of prey capture. The effect of web parameters on prey interception, and why and how energy state affects the foraging option selected by spiders, are interesting foraging problems. One model which incorporates the effect of energy state on foraging choices is risk-sensitivity. Foragers which prefer options with more variation or risk around mean energy return are known as risk-prone foragers. My proposed research will examine the effect of web design on prey capture and the effect of energy state on web design choice, in a field setting for an *Argiope* species. A dynamic program was created in which spiders of various energy states could choose web types with different prey capture probabilities and different costs. Output showed that spiders doing poorly near the end of the season chose riskier alternatives and lends theoretical support for risk-sensitive foraging by spiders.

ULTRASTRUCTURE OF *PHIDIPPUS* (ARANEAE: SALTICIDAE) MESENTERON

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The mesenteron of two species of *Phidippus* (*P. audax* and *P. clarus*) was examined by conventional thin section, transmission electron microscopy. Three cell types were present: dark appearing secretory cells with an extensive endoplasmic reticulum and large granules; pale appearing resorptive cells with villi, large numbers of irregular vacuoles and type A and B granules. The mesenteron was penetrated by malpighian tubules and tracheoles. These findings correspond to those reported by previous workers in other groups of arachnids.

EFFECT OF WILDFIRE ON ARTHROPODS IN SOUTHERN ARIZONA MESQUITE-OAK WOODLANDS: PART I: SCORPIONS

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Little is known about the effects of fire on arthropod populations. We are currently conducting a study of the effects of fire on arthropod populations in the Rincon Mountains, near Tucson, Arizona. This poster presents results for scorpion populations from the first nine months of censusing. Scorpions were censused by collection in pitfall traps, and by turning over rocks. Three species of scorpion, *Vejovis spinigerus*, *Superstitionia donensis*, and *Centruroides exilcauda* were found. All three species were found at the non-burn site. We have not found *Centruroides exilcauda* in the burn sites, however they have been the least frequently collected of the scorpions. Preliminary results indicate there is no difference between the number of scorpions found in the burn site and in the number found at control sites. Scorpions in the burn site were found with evidence of burn damage.

COPULATION DURATION AS A FUNCTION OF MALE AND FEMALE AGE IN THE WOLF SPIDER *SCHIZOCOSA OCREATA*

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Variation in copulation time has been shown to occur in all major taxa of arthropods, with duration varying from only a few seconds up to one week (Dickenson, 1986; Clements, 1963; Labitte, 1919). Prolonged mating was thought to predominantly involve precopulatory or postcopulatory mate-guarding by males; however, recent literature suggests the involvement of courtship during copulation, insinuating cryptic female choice (Eberhard, 1994). Within the wolf spider family Lycosidae (across 5 different genera), a wide range of copulation durations is seen, varying from a few seconds up to ten or more hours. Within the genus *Schizocosa* alone, for example, copulation durations range from one to more than ten hours. Female *Schizocosa* are believed to mate only once, thus eliminating the possibility of pre- or post-copulatory mate guarding by the males along with cryptic female choice. This study attempts to address the question of why copulation durations are so long and why they vary so dramatically within the wolf spider species *Schizocosa ocreata*. Fifty-three pairs of males and females were randomly assigned together. Measurements of the male and female body lengths, weights, and cephalothorax lengths were taken prior to pairing. Twenty-six pairs copulated and the duration of copulation ranged from 1.1h-7.5h. No significant correlations were found between copulation duration and any male or female measurements; however, there were significant positive correlations found between copulation duration and age (in days post maturation molt) for both males and females. Additionally, there was a significant negative correlation between copulation duration and the ratio of male to female age. Within the wolf spider *Schizocosa ocreata*, copulation duration seems to be a function of the age of both the male and the female.

THE EFFECTS OF HABITAT COMPLEXITY ON THE DEVELOPMENT OF FORAGING BEHAVIOR AND GROWTH RATE IN *HOGNA* SPECIES

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Wolf spiders (Lycosidae) are known to use both visual and vibratory cues in prey capture. This study examined how habitat structure which emphasizes one or the other of these cues influences foraging success and the development of foraging behavior. Sixty offspring of *Hogna* sp., collected from deciduous leaf litter habitats in Gainesville, Florida, were reared in 8 x 10 x 20 cm clear plastic boxes provided with two different conditions of habitat complexity. The simple, visual environment consisted of the box lined with 1 cm of sand. The complex, vibratory environment consisted of the box lined with 1 cm of sand and filled to the lid with paper-towels that had been shredded using a mechanical paper shredder. Spiders were fed equal numbers of prey (fruit flies, crickets) for eight weeks. Individuals were weighed every 10 days, and molted exoskeletons removed and the patella-tibia length of leg I measured. At week 8 spiders were tested for foraging efficiency in their natal environments by introducing five crickets and recording time to first capture and the number of crickets captured after one hour. At week 9 the habitats were switched, and spiders were tested in the novel habitat. We found that the growth rates of spiders reared in the different habitats were not significantly different. The results of the foraging efficiency tests were surprising. Spiders reared in the complex environment captured significantly more prey, significantly faster in the simple environment. In addition, they did better in the simple environment than those reared in the simple environment did. Spiders reared in the simple environment showed no significant differences in performance in the simple versus the complex environment. We will present two possible explanations for these results.

ECOLOGICAL PRESSURES AND INDIVIDUAL BEHAVIOR IN THE FORMATION OF AGGREGATIONS BY A TROPICAL HARVESTMAN (OPILIONES: SCLEROSTOMATIDAE)

Lovrien, Anna M. Box U-43, Dept. EEB, University of Connecticut, Storrs, CT 06269

Many harvestmen in the Sclerostomatidae (formerly Gagrellidae) aggregate into groups of conspecifics, but the ecological and evolutionary forces which have brought about this aggregation behavior are poorly understood. Using a species of *Prionostemma* in Costa Rica, I am currently investigating how physiological constraints and predation pressure influence harvestman survival, and whether either or both of these ecological pressures are affected by behavioral research to determine how harvestmen find aggregations, what aggregation sizes and locations are preferred, and how the likelihood of aggregating compares among individuals of different ages and sexes. This research will be the first extensive study of aggregation behavior in invertebrate zoologists. *Prionostemma* sp. may serve as a model system for the study of how behavioral responses, particularly aggregation, can ameliorate negative selective pressures in a tropical arthropod.

INTRODUCING THE TREE OF LIFE

David Maddison and Wayne Maddison University of Arizona, Tucson, AZ

The Tree of Life depicts the phylogeny and diversity of living organisms on the Internet electronic network. From a home site (http://phylogeny.arizona.edu/tree/phylogeny.html), which begins at the root of the phylogeny of life, one can wander via the hypertext links of the World Wide Web to pages showing more and more detailed views of life's diversity. For instance, from the page on the Eukaryotes, one can go to a page on the animals, then the arthropods, arachnids, spiders, araneomorphs, entelegynes, dionychans, salticids and eventually get to a page on a particular species of *Habronattus*. These pages can contain text, graphical images, sounds, movies, and links to other information on the Internet. Our goal is to have the Tree of Life be a distributed, cooperative effort, with many researchers each contributing a page or pages on clades they study. The arachnological branches lead mostly to the salticids now, but we are seeking contributions for other groups of arachnids. We are building a special version of MacClade that makes building pages for the Tree of Life system simple and rapid.

THE EFFECT OF REARING ENVIRONMENT ON JUMPING SPIDER BEHAVIOR

Pollack, J. and Jakob, E. M. Biology Dept., Bowling Green State University, Bowling Green, OH, 43403.

We tested the effect of rearing conditions on the behavior of jumping spiders (*Phidippus audax*). Spiders were randomly assigned to either small or large cages that either were empty or held a painted dowel. Lab-reared spiders were raised from second instar to adult in these environments. Field-caught adults were also randomly assigned to these containers and were held for four months prior to testing. Spiders were then presented with three behavioral tests. Field-caught spiders were more likely to react to videotaped prey, were more successful at a detour test, and were less stereotactic and more active in an open field. The presence of the dowel also affected performance in several tests. Our results suggest that the rearing conditions we tested, which are commonly used by behavioral researchers, may profoundly influence the behavior of adult spiders.

TEMPORAL PATTERNS OF ACTIVITY AND FEEDING IN *APHONOPELMA ECHINA* FROM TRANS PECOS, TEXAS

Punzo, F. Dept. of Biology, University of Tampa, Tampa, FL 33606

The tarantula, *A. echina*, exhibits peak activity periods from 1730-2000 hr, during April-June; this shifts to a later period (2030-2300 hr) during the hotter summer months (July-September). Insects (Coleoptera, Orthoptera) comprise over 70% of the dietary items captured and consumed by this spider. Other prey items include arachnids, hemipterans, homopterans, geckos, and small snakes. Adult female spiders remain in or near their burrows more frequently in the search and pursuit of prey, even during non-reproductive periods. Adults of both sexes can consume over 50% of their body weight in a single feeding. This gorging tactic enables them to survive long periods without feeding. The ability of the female to produce a viable egg sac depends on the amount of food consumed in early spring to early summer. Females that have fed on a regular basis are less likely to attack and consume conspecific males during attempted mating.

BLACK WIDOWS (*Latrodectus*, Theridiidae) ARE BETTER THAN THEIR REPUTATION

Sierwald, Petra Insects, Zoology, Field Museum, Chicago, IL

The mating behavior of 4 North American widow species (black widows: *L. mactans, L. hesperus, L. bishopi*; brown widow: *L. geometricus*) was analyzed. The most significant results are: (a) *L. geometricus* males perform a somersault on the females' venter, a striking synapomorphy with the behavior reported from the Australian *L. hasselti*. (b) *L. hesperus* and *L. bishopi* males were found not to be subject to post-mating sexual cannibalism nor were males eaten by females during courtship. (c) The predominant mating system is promiscuity (or polygynyandry) in *L. hesperus* and *L. bishopi*, with males mating more often than females. *L. geometricus* exhibits polyandry, with females mating often, while males only mate once in their entire life. Courtship and mating behavior in the four species consists mainly of the same behavioral elements (except for the somersault in *L. geometricus*): While females moved rarely during courtship and mating, the males first move around in the web with abrupt, jerky leg movements, cut silk lines in the females web, and approach the female after various amounts of time. In *L. bishopi, mactans* and *hesperus*, males initially touch the tips of females legs, before climbing onto the females' back. Males of *L. geometricus* crawl right onto the female's dorsum, often after only a short period of time in the females' webs. Courtship and mating was filmed with a camcorder. Duration of various phases of courtship and mating varies only somewhat within a species, but strongly between species: L. bishopi had the shortest courtship/mating duration (2-6 hours), *L. geometricus* the longest (over 30 hours). This study aims to analyze the phylogenetic relationship between widow species, using behavioral and morphological characters (later also including molecular characters). The second objective of the study is an investigation into the possible demonstration of male mate choice. In contrast to males of most other spider species and black widow males, brown widow males (*L. geometricus*) mate only once in their entire life time since they are tightly wrapped by the female while mating is still in progress. Thus, for brown widow males the cost of mating is extremely high.

THE EFFECT OF FEEDING LEVELS ON LOCOMOTOR ACTIVITY IN *HOGNA HELLUO* (ARANEAE: LYCOSIDAE)

Walker, S.E., Marshall, S., and Taylor, D.H. Dept. of Zoology, Miami University Oxford, OH 45056

Most lycosids are generally considered sit and wait predators that change sites periodically. Many different factors such as temperature, age, predation risk, and hunger have been implicated in the decision of a spider to change foraging sites. Since prey availability and hunger will be influenced by the choice to move or stay these factors could play a key role in determining how long the spider stays at a site. In this study we examined the effects of feeding levels on locomotor activity of the nocturnal lycosid *Hogna helluo* using a video based data acquisition system. Spiders were randomly placed into one of two treatments, starvation or satiation, and their body condition measured. Both the starved and satiated treatments were given water *ad libitum*, but the starved spiders were not fed for 14 days and the satiated spiders were fed either crickets, fruit flies, or meal worms three times weekly for 14 days. Body condition was significantly lower in the starved spiders in comparison to the satiated spiders. Locomotor activity was significantly greater in the starved spiders when compared to the satiated spiders. This indicates that as in some web building spiders, prey availability could influence the degree to which a spider stays at a particular site.

1995 Election Results

Lenny Vincent reported at the A.A.S. Business Meeting in Columbia, MO that Ann Rypstra was elected to the position of President-Elect, and Robert Suter has become our newest Director. Congratulations to Ann and Robert! Gail Stratton remains the Treasurer, and Alan Cady continues as Secretary. Many thanks to Lenny for running this election.

EXTRAS !!! EXTRAS !!!

Jim Carrel has received several requests for t-shirts having the logo for the 1995 meeting of the AAS at Missouri. He plans to order more, sizes XL and XXL only, that will sell at $10.00 each plus $2.00 shipping and handling each within the US and Canada. If you wish to get one, please contact Jim directly at:

Prof. Jim Carrel, 209 Tucker Hall, Div. Biol. Sci., Missouri Univ., Columbia, MO 65211.
Office phone: 314-882-3037, FAX: 314-882-0123;
E-mail: carrel@biosci.mbp.missouri.edu.

Jim also has a few copies of the following:
- The group photo taken at the 1995 AAS meeting @ $2.00 each;
- The scientific program @ $5.00 each;
- List of attendees @ $1.00 each

Prices include shipping and handling.
Contact Jim directly to order any or all of the above.

Journal of Arachnology Note

Back issues of the Journal of Arachnology may be obtained from:

Patricia Miller
P.O. Box 5354
Northwest Mississippi Community College
Senatobia, Mississippi 38668
(601) 562-3382

TREASURER'S REPORT

First Quarter Report, April 20, 1995

Balance in checking, 4th quarter, 1994		$14,080.10
Chemical Bank South, Albion MI. Acct. #075-964-7		
Deposits		
Membership		21,192.00
Page charges		1,253.00
Interest, checking acccount		102.41
Sales of Spider Genera		257.00
Sales, back issues		255.00
Income from St. Lucie Press , indexing service		50.00
Income from 1994 meeting		20.00
	Subtotal	$23,129.41
Expenses		
Mailing expenses, back issues, Spider Genera		123.11
Miami University, production of newsletter		1200.00
adjustment for error in deposit		80.00
uncollected check		15.00
	Subtotal	$1,418.11
Amount in Checkin		$35,791.40
Amount in CDs		$71,000.00
interest from cds		$1,964.11
Total Assets		$108,755.51

Second Quarter Report, June 16, 1995

Balance in checking, 1st quarter 1995		$35,791.40
Chemical Bank South, Albion MI. Acct. #075-964-7		
Deposits		
Membership		1548.00
Sales, back issues		510.00
Donation for student award		100.00
	Subtotal	$2,158.00
Expenses		
Mailing expenses, back issues, shipping records		115.10
Allen Press, JOA Vol 22(3)		5295.50
State of CA, filing fee		10.00
Honorarium, Associate editor		1000.00
	Subtotal	$6,420.60
Amount in Checking		$31,526.80
Amount in CDs		$73,000.00
interest earned to date		$1,964.11
Total Assets		$106,490.91

Third Quarter Report, September 30, 1995

Balance in checking, 2nd quarter 1995		$31,526.80
Chemical Bank South, Albion MI. Acct. #075-964-7		
Deposits		
Membership		729.00
Sales, back issues		60.00
Donation		65.20
Sales, Spider Genera		561.24
Donation, Auction		2378.00
Adjustment		0.45
Interest (April-Aug.)		246.29
	Subtotal	$4,040.18
Expenses		
Paul Klewinski, 1st place, student award		100.00
Jeremy Miller, 2nd place, student award		50.00
Award Plaques for AAS Meeting		108.01
P. Gerbs, return of overpayment at auction		14.00
Honorarium, Associate Editor		500.00
Allen Press, JOA Vol 23 (1)		3815.46
Student Research Awards		1500.00
mailing expenses		61.48
Co-collected dues, Arthropoda Selecta		560.00
Co-coll. dues, British Arachnological Society		3096.00
Co-coll. dues, CIDA		3061.00
Co-coll. dues, ASJ		920.00
	Subtotal	$13,786.94
Amount in Checkin		$21,780.04
Amount in CDs		$73,000.00
interest earned to date		$1,964.11
Total Assets		$110,531.09

1996 A.A.S. MEETING TUCSON, ARIZONA

The 1996 meetings of the American Arachnological Society will be held in Tucson, Arizona on the 28-31 of July, hosted by Wayne Maddison and Leticia Aviles (University of Arizona). Our planned schedule is:

- **Saturday 27 July - Participants begin to arrive; check-in to accommodations.**
- **Sunday 28 July - Day: Field trip, possibly to Mt. Lemmon (oak/pine forest). Evening: mixer.**
- **Monday 29 July - Paper presentations.**
- **Tuesday 30 July - Paper presentations. Evening: banquet & auction.**
- **Wednesday 31 July - Paper presentations, business meeting.**
- **Thursday 1 August - Possible second field trip.**

Poster sessions are planned but not yet scheduled. The formal start on a Monday was chosen to coordinate with two other meetings in Arizona, the Behavior meetings in Flagstaff (3-8 Aug. with pre-meeting 1-2 Aug.), and the Invertebrates In Captivity meetings in Tucson (1-4 Aug.). We suspect many AAS members will be interested in either or both of these other meetings. The field trip was placed on Sunday to facilitate Saturday stayover airplane fares. We will be prepared for people arriving as early as Saturday.

In case you are concerned about the desert heat, it will be hot (hovering around 100° F) but dry, and the afternoon thunderstorms that are expected in late July can drop the temperature 20° in an hour. The nights are much more pleasant for sleeping than they are in the hot and humid East. Tucson heat has been no problem for the organizers (a Canadian and an Ecuadorian from 9000 feet in the Andes). For more information about Tucson, try: http://arizonaweb.org/City/Tucson/index.html, http://www.emol.org/emol/tucson/tucindex.html, http://tucson.com/tucson/, http://www.brainlink.com/~tucson/scenic/index.html, **or** http://www.arizonaguide.com/

We are planning to have a World Wide Web site for the meetings on-line by December 1995 so that you can get up-to-the-minute information Our tentative address is: http://spiders.biosci.arizona.edu/tucson96/tucson96.html. When the site is on-line we plan to have it referenced from the Arachnology site (http://sesoserv.ufsia.ac.be/Arachnology/Arachnology.html). **Internet address:** (wmaddisn@ccit.arizona.edu). We hope to see you here!

News from the JOURNAL OF ARACHNOLOGY

The Society has a new Associate editor, Petra Sierwald. She will take over the fine job that Gary Miller has provided the Society the last 4 years. Petra passes along some information regarding manuscript submission and publication charges. -Ed.

NEW ASSOCIATE EDITOR
CHANGE IN INSTRUCTIONS TO AUTHORS
PAGE CHARGES REDUCED
CALL FOR MANUSCRIPTS

The Journal of Arachnology, published by the American Arachnological Society, has a new Associate Editor. I started this task at the 19th annual meeting of the American Arachnological Society in Columbia Missouri. Dr. Gary Miller served as Associate Editor of JOA for the last 4 years and has done a terrific job. It will be hard to fill his shoes. Gary has offered every possible help and advice during the transition phase, and I will make use of it.

NEW ASSOCIATE EDITOR

From now on, send your manuscripts to **Petra Sierwald, Associate Editor Div. Insects, Field Museum Roosevelt Road @ Lake Shore Drive Chicago, IL 60605, USA**

You can reach me at: Phone: (312) 922-9410, ext 841, FAX: (312) 663-5397, e-mail: SIERWALD@FMPPR.FMNH.ORG

Dr. James Berry will continue to serve as Editor. James W. Berry, Editor Dept. of Biological Sciences Butler University Indianapolis, IN 46208, USA Telephone: 317-283-9344; FAX: 317-283-9519, e-mail: BERRY@BUTLER.EDU

CHANGE IN INSTRUCTIONS TO AUTHORS

The Associate Editor requests to receive FOUR copies of each manuscript instead of three.

PAGE CHARGES REDUCED The page charges have been reduced to $US 10.00 per printed page if the final version of the manuscript is supplied on computer disk in WordPerfect or ASCII format. Charges will be $35.00 per page otherwise. In special cases, the Editor may waive a portion of the page charges (normally no more than 80% of the page charges). If an author wishes to be considered for such a waiver, please make the request in writing to the Editor when we call for revisions of the paper. The author must certify that neither grant nor institutional funds are available to cover all of the publication costs.

CALL FOR MANUSCRIPTS

We, THE EDITOR and ASSOCIATE EDITOR of the JOURNAL OF ARACHNOLOGY, strongly urge you to consider submitting your arachnid-oriented manuscripts to the JOURNAL. We can offer a very dedicated editorial board and reviewers who will review your manuscript with great care and responsibility. In addition, the newly reduced page charges make the JOURNAL OF ARACHNOLOGY more attractive than ever.

Thank you very much for your attention.

Petra Sierwald

Petra Sierwald The Field Museum Chicago, IL 60605, USA
e-mail: sierwald@fmppr.fmnh.org

AMERICAN ARACHNOLOGICAL SOCIETY DIRECTORY OF GRADUATE SCHOOL SPONSORS IN ARACHNOLOGY (Version 1.1)

This directory includes arachnologists who are willing to sponsor students who wish to obtain an advanced degree involving research on some aspect of the biology of arachnids. Information contained herein has been assembled from data contributed by the sponsors listed below. The primary purpose of this directory is to provide a service to the academic community as part of a continuing effort of the AAS to promote and develop the field of Arachnology. It is our intention to update this information at least once each year. This list is available by request from the Secretary of the American Arachnological Society through the mail or by electronic mail. The American Arachnological Society makes neither recommendations nor endorsements of persons or organizations listed. This issue date is 18 June 1995.

The FORMAT of the information listed under each Sponsors's name is as follows: -Department & Institutional Affiliation (Where degree/s will be awarded) -Advanced Degrees Awarded -Home Institution Mailing Address & Communication. (Includes Title of Sponsor if different from title held at Degree-Awarding Institution): -Research Area and/or Primary Research Activities -Additional Information

Arachnology Course

Bill Shear writes:

The dates for the 1996 Biology of Spiders course at the Highlands Biological Station, Highlands, North Carolina, USA, have been set for July 15-26, 1996. See the Arachnology WWW page for information on how to register (**ftp://sesoserv.ufsia.ac.be/Biology/Arachnology/Homepage.html**)

Best wishes, Bill

William A. Shear Department of Biology Hampden-Sydney College
Hampden-Sydney VA 23943 USA
phone (804) 223-6172; FAX (804) 223-6374

Craig Hieber Writes:

Please pass the following information on to your students, graduate students, or others qualified.

AAS Fund Announcement

The (AAS Fund for Arachnological Research) is funded and administered by the American Arachnological Society. The purpose of the fund is to provide research support for work relating to any aspect of the behavior, ecology, physiology, evolution, and systematics of any of the arachnid groups. Awards may be used for field work, museum research (including travel), expendable supplies, identification of specimens, and/or for preparation of figures and drawings for publication. Monies from the fund are not designed to augment or replace salary. Individual awards will not normally exceed $500.00, and preference will be given to students over part-time or tenured faculty. Up to five research awards will be made during each Winter-Spring or Summer-Fall granting period. Applications for support should be received by the chair of the review committee no later than May 30 or November 30, for funding by June 30 and December 30, respectively.

To be considered for an award from the AAS Fund, please submit three copies of a proposal of no more than 5 pages (including references) detailing your research project. Proposals should have three main parts:

1) an Introduction where background information is presented relative to the proposed work. The introduction should include a section which places the proposed work in context with currently known relevant information, a section which provides justification for the proposed work, and a clear statement of the hypothesis(ses) to be tested, or, in the case of systematic revisions, the type of synthesis that will be achieved and its significance;

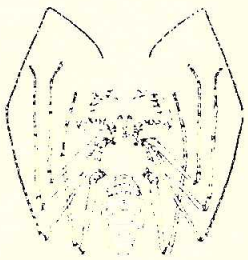
2) a Methods section where the methods, materials, experimental design, and statistical or taxonomic analysis(ses) to be used are clearly and concisely presented, and

3) a Budget showing (in detail) how monies awarded will be spent in the proposed research.

Proposals should be submitted to:

Dr. Craig S. Hieber, AAS Fund Chair
Dept.of Biology #1742
St. Anselm College, Manchester
NH 03102-1310, USA.

Proposals should be submitted in English. Proposals may be faxed (603-641-7116), or sent electronically (chieber@anselm.edu) if it is appropriate or cost is prohibitive (out of country).



ARACHNOLOGICAL NOTES

Charles Griswold writes:

FROM: Dr. Charles E. Griswold and other arachnid workers of Department of Entomology the United States, California Academy of Sciences Golden Gate Park San Francisco, CA 94118 USA TEL: (415) 750-7231 FAX: (415) 750-7228 Internet: griswold@cas.calacademy.org

TO: C. I. D. A. Members 12 October 1995

Dear Colleague, Each year the Centre Internationale de Documentation Arachnologique (CIDA) in Paris publishes a list of all non-acarine arachnid works published or in press during that year. The list is a bibliographic tool. As the U.S. representative, I am responsible for collation of all citations published by workers in the United States. I am contacting all arachnologists in the United States for whom I have e-mail addresses and asking that you send me your citations on e-mail to my internet address

griswold@cas.calacademy.org,

specifying CIDA as the subject.

PLEASE E-MAIL ME THE CITATIONS OF YOUR PAPERS PUBLISHED OR IN PRESS DURING 1994-95 BY DECEMBER 15, 1995. Also, may I ask you to send reprints to our department at the California Academy of Sciences, if you have not already done so.

Sincerely Yours, Dr. Charles E. Griswold, Schlinger Curator of Arachnida and Chairman, Department of Entomology, California Academy of Sciences

CALL FOR COMMON NAMES

Call For Common Names The Committee on Common Names of Arachnids of the AAS is calling for submissions of common names for arachnid species meeting the criteria for the second edition of Common Names of Arachnids. The geographic area of primary concern is for species of arachnids inhabiting the United States, Canada, and their possessions or territories. Other species not inhabiting these areas, but of sufficiently well-known status internationally, may be included. Species inhabiting the United States as museum displays, in zoos, or primarily as pets, qualify for a common name should the species meet the requirements. Qualified species should meet one or more of the following criteria:

- The species is abundant or conspicuous.
- The species is frequently encountered, at least by segments of the general public, or is maintained in captivity in significant numbers.
- The species is economically significant, such as a pest of agricultural crops or gardens, or is a predator of arthropod pests.
- The species has medically significant venom, or is a predator of medically important arthropod pests.
- They are rare, threatened, endangered, or any other sufficient reason.

Unlike the Entomological Society of America, there is no red tape, no hoops to jump through. The species name with author along with the reason you believe the species should be included, as long or as short as you want to make it, is all that is required. Of equal

ARACHNOLOGY INTERNET ListServer

We all owe Herman and Michel a debt for producing, implementing, and maintaining what has become a very popular listserver for those interested in all facets of arachnology. -Ed.

How to use the Arachnology ListServer:

Send an e-mail message to:

majordomo@ufsia.ac.be

Enclose these messages in the **body** of the letter (starting on the first line):

get arachnology CONTENTS (UPPERCASE !!)
get arachnology TOPICS
end

and you will receive lists describing this service.

Our list server is configured to remove members from the list when a message bounces back several times. A special program will try to sent them a message several times during a month to inform them.

If your e-mail address changes, please **unsubscribe**, and **subscribe again** with your new e-mail address!

- Herman Vanytven Universiteit Antwerpen

- Michel Daulie - *Majordomo* maintainer

... If you want to live and thrive, Let the spider run alive ...

Norm Platnick

announces that the next Catalog volume will cover literature through the end of 1995, as well as redescriptions from 1940-1980. He asks to receive copies of relevant papers as soon after the end of 1995 as possible. The book should be out near the end of 1997, and there should be a pre-publication discount to AAS members.

AAS Phone / FAX Directory

Plans are still afoot for the production of a phone / FAX Directory for the AAS. This information may be combined with regular mail addresses and possibly e-mail addresses. Since there are privacy issues involved here, the Executive Committee is considering the best course of action.

There will probably be a mailing to the membership addressing this topic, and will include questions concerning an individual's preferences for their listing (do you wish to be listed, what information may be included, etc.). It is hoped to have a membership directory available by the time the AAS meets in Tucson next summer.

Identification of Persons in Group Picture at AAS Meeting, June, 1995 (Left to right)
Front row: Gail Stratton, Michelle Gray, William Miller, Pat Miller, Maggie Hodge, Peggy Gerba, Kelly Kissane, Vince Roth, Phyllis Rovner, Bonnie McNett, Catherine Ball, Lauren Kerzicnik, Sarah Heyman, Petra Sierwald, Edgar Leighton; **Second row**: Sam Marshall, Gary Miller, Beth Jakob, Jill Cotter, Eileen Hebets, Matt Persons, Linda Mott, Vladimir Ovtsharenko, Matt Greenstone, Charles Kristensen, Craig R. Baird, Jerome Rovner, George Uetz, H.D. Cameron; **Third row**: Karen Cangialosi, Juanita Peaslee, Sean Walker, Dan Mott, Joe Beatty, Jim Berry, Betsy Berry, Norman Horner, Lenny Vincent, Meosha Hudson; **Fourth row**: Soren Toft, Alan Cady, Dave Landes, Jim Hunt, Rob Balfour, David Corey, Tom Bultman, Allen Brady, Sara Brady, Bruce Cutler, Liz Smith; **Fifth row**: Kevin Delaney, Bill Bennett, Jason Bond, Martin Ramirez, Anna Lovrien, Charles Griswold, Bill Peck, Nelle Carico, Jeremy Miller, Ann Rypstra, James Cokendolpher, Rich Bradley, Margaret Janowski-Bell, David Bell, Fred Coyle, James Arnold; **Back row**: Craig Hieber, Bob Suter, Doug Morse, Gary Dodson, Ben Moulder, Neal McReynolds, Jim Carico, John Dobyns, Rick Vetter, Robert Edwards, Todd Blackledge, Doug Toti, Clyde Morgan, Andy DeLay, Paul Barron, Jim Carrel, David Kroeger, Diomede Buzingo

Smithsonian Spider Exhibit Schedule

Petra Sierwald has submitted the itinerary for the traveling Smithsonian Spider Exhibit. This has been receiving rave reviews from the public and professionals. Check to see when it will be near your town.

SPIDERS !

Booking Period — Location

Cranbrook Institute of Science, Bloomfield Hill, MI
21 October - 14 January
Royal Ontario Museum, Toronto, Ontario
1996 10 February - 5 May
Academy of Natural Sciences, Philadelphia, PA
1 June - 25 August
Field Museum of Natural History, Chicago, IL
21 September - 15 December
Bishop Museum, Honolulu, HI
1997 11 January - 6 April
Cincinnati Museum of Natural History, Cincinnati, OH
3 May - 27 July
Fernbank Museum of Natural History, Atlanta, GA
23 August - 16 November
California Academy of Sciences, San Francisco, CA
13 December - 8 March
Museum of Science and History, Jacksonville, FL

(From page 1...)
of the student paper competition also were announced. First place went to Paul Klawinski for his work on epigynal development in *Schizocosa ocreata*, and second place was captured by Jeremy Miller for his work on *Atypoides* and *Antrodiaetus* systematics. Paul received a year membership to the Society, an (almost) complete set of *American Arachnology*, and $100. Jeremy was awarded $50.00. Congratulations to them!

The field trip for Rock Bridge Park left Saturday morning and headed for the limestone & karst formations outside of Columbia. Rick Vetter reports that after everyone had recovered from being lost, he and Todd Blackledge collected 31 *Loxosceles* spiders from the equipment barn in 1 1/4 hours. They would have collected more but ran out of vials. Truly, central Missouri is the "Land of *Loxosceles*"!

In The Next Issue .....

- Details and Forms for the 1996 AAS Meeting
- Printing of the Constitution & By-Laws
- Minutes from the 1995 AAS Business Meeting
- Submit your items NOW !! (by 1 April)

AMERICAN ARACHNOLOGY

The Newsletter of the American Arachnological Society

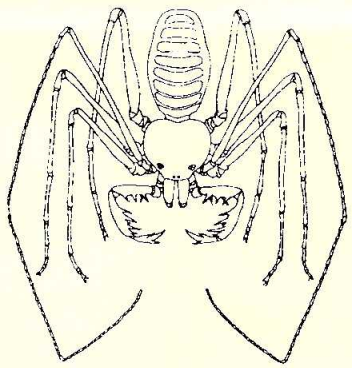
Number 52 **November 1995**

E-Mail Happenings

The latest Update bringing the **A.A.S. E-Mail Directory** up to **ver. 3.2** was transmitted via e-mail on 12 November, 1995. Those wishing a hard copy of the Directory should contact the Secretary (Alan B. Cady, Dept. Zoology, Miami Univ.-Middletown, 4200 E. Univ. Blvd., Middletown, OH 45042, U.S.A.). The Update Lists are issued to those currently listed in the Directory, while those new listings receive a Full Directory Listing the first time their address is included in the Directory.

If anyone currently listed in the Directory wishes a Full Listing (ver. 3.2), please contact the Secretary (ACADY@MIAVX3.MID.MUOHIO.EDU). A copy will be sent to you directly via e-mail.

If you wish to have your e-mail address included in the A.A.S. E-Mail Directory, **or** if your address has changed, **or** if it's an incorrect entry, please contact Alan Cady (ACADY@MIAVX3.MID.MUOHIO.EDU).



Cushing, P., Zoology
223 Bartram Hall
Univ. of Florida
Gainesville FL 32611

AMERICAN ARACHNOLOGY
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