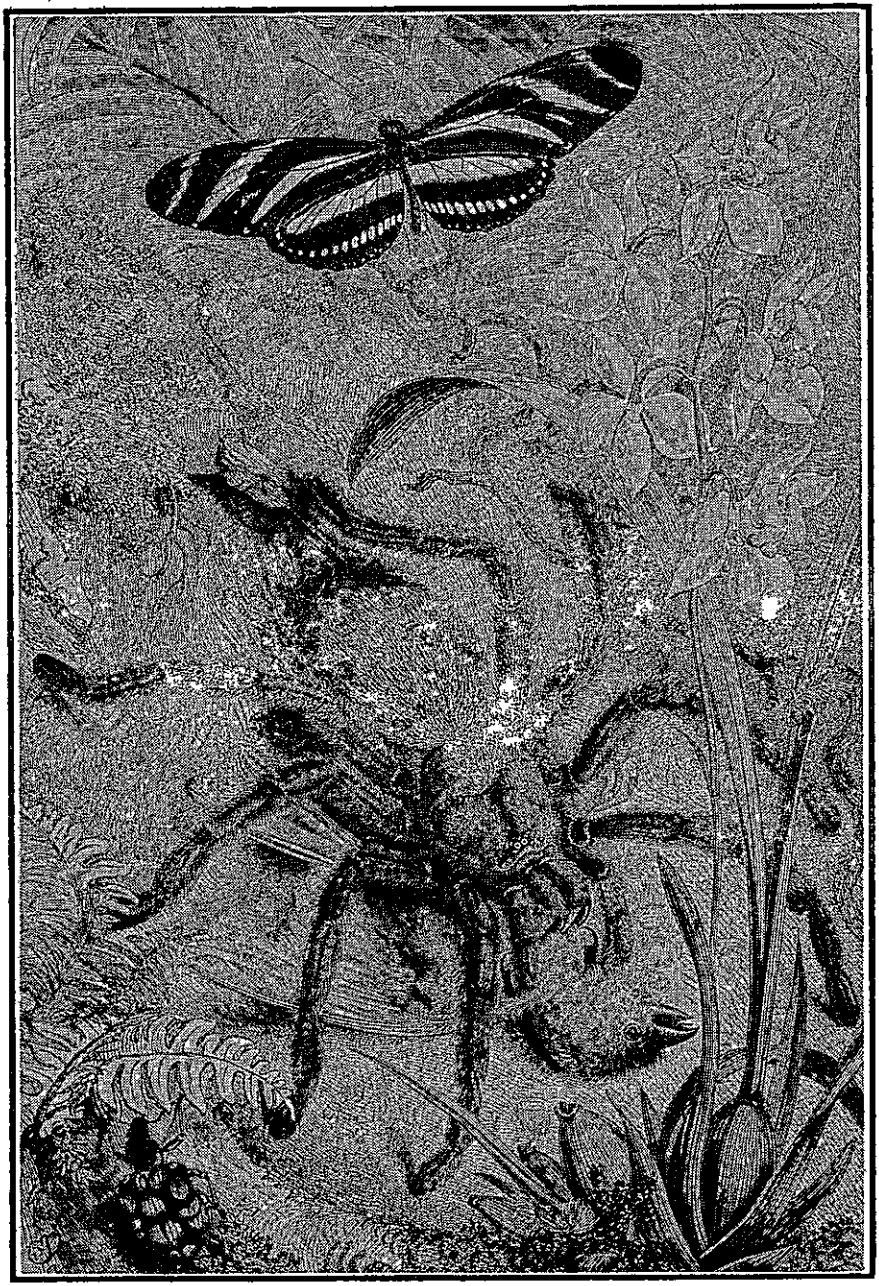
American Arachnology

The Newsletter of the American Arachnological Society



Number 20 *October 1979*

AMERICAN ARACHNOLOGY #20

October 1979

In this issue of AMERICAN ARACHNOLOGY:

AMERICAN ARACHNOLOGY is the newsletter of the American Arachnological Society and is sent only to society members. For information on membership, write Dr. Norman Platnick, Membership Secretary, American Arachnological Society, Department of Entomology, The American Museum of Natural History, New York, NY 10024, USA. Members of the Society also receive the JOURNAL OF ARACHNOLOGY three times a year.

Correspondence, submissions and requests for back issues of AMERICAN ARACHNOLOGY should be directed to the editor, Dr. William Shear, Biology Department, Hampden-Sydney College, Hampden-Sydney, VA 23943, USA.

Notice of a change of address should be sent only to the Membership Secretary (see above). To do otherwise merely delays the change; all mailing for the Society is done from a list maintained by the Membership Secretary.

RESEARCH RESEARCH RESEARCH RESEARCH

Timothy C. Lockley, Bioenvironmental Insect Control Center Laboratory, Delta States Research center, Box 225, Stoneville, Mississippi 38776, is carrying out a study of spiders as regulators of insect pest species in the cotton agro-ecosystem. He would appreciate reprints of any published work on spiders in row crops.

J. Norman Grim and C. N. Slobodchikoff, Department of Biology, Northern Arizona University, Flagstaff, Arizona 86001, are beginning a survey of spider egg chorion microsculpture, using the scanning electron microscope (see Pan-Pacific Entomol. 54(4):319-332. 1978.). They would like to get eggs of any identified spider species preserved in alcohol, or "eggshells" without preservation. They promise to send to any collaborator an SEM photomicrograph of the egg surface.

Steven Tessler, 7139 Stockley Road, Upper Darby, Penna. 19082 writes: "I am interested in salticid spiders found on Queen Anne's Lace (Wild Carrot, Daucus carota L.) in Autumn. The plants' range includes North America, Europe and Asia. My studies in Indiana have shown the post-flowering umbels are inhabited by retreat-building Phidippus and Metaphidippus spiders. Salticids were found associated with every dense stand examined and similar observations have been made in Ohio and Pennsylvania. I am most interested in the genera, species and approximate instar involved in this spider/plant association in other areas and if large and small salticids are found together in the same stands. Additional information is available upon request and I would welcome the exchange of specimens."

Ray A. Sweet, Department of Entomology, Kansas State University, Manhattan, Kansas 66506 is beginning a revision of the genus Salticus (Araneae, Salticidae) and would appreciate the loan of specimens; his work is under the supervision of Dr. R. J. Sauer.

Willis Gertsch and Norman Platnick are preparing a revision of the American spiders of the family Atypidae, and additional specimens (particularly from the southeastern states) would be a great help. Anyone having atypid material not already in their hands is requested to loan it to Norm at the Department of Entomology, American Museum of Natural History, Central Park West at 79th Street, New York, New York 10024.

SPIDERS ON PBS

The Public Television series NOVA, produced by WGBH-TV in Boston, will show the Kullmann-Stern film, "Life on a Thread" on Tuesday evening, October 9th (time and day may vary in your area). This film was viewed at the Exeter meetings and was characterized by those who saw it as "superb."

Range Extensions

James M. Buchkovich of Lake City, PA 16423, writes: "On 22 August 1977, I collected a female Araneus diadematus from an Eastern Hemlock (Tsuga canadensis) on the campus of Indiana University of Pennsylvania, Indiana (Indiana Co.) Pennsylvania. Dr. H. W. Levi (Bull. Mus. Comp. Zool., 141:131-179) shows this species extending south only as far as Rhode Island and the southern shore of Lake Erie. This represents a southern range extension of approximately 100 miles. The specimen was held captive in a glass aquarium until 21 April 1978 at which time it died. During its captivity it was fed fruitflies, mealworms, and sugarwater. Other than the reference cited above, no literature search was carried out."

"I might also mention that I found two female specimens of A. diadematus in a Girard (Erie Co.,) Pennsylvania cemetary. One had placed its web in a Yew (Taxus sp.) and the other in a pine (Pinus sp.)."

PEOPLE

HERB LEVI spend most of the month of March, 1979, in Papua New Guinea at the Wau Ecological Institute, collecting and observing orbweavers.

By the time this newsletter reaches you, JIM CARICO will have returned from a year in New Zealand, where he worked on the Pisauridae and Araneidae of New Zealand with RAY FORSTER at the Otago Museum.

JAMES COKENDOLPHER spent the summer wielding a shovel on an archeological dig in Texas. On July 2, James and JEAN HEINZMAN were married. Congratulations to them!

FRED COYLE is building a new house in Cullowhee, North Carolina. This summer he has been working on the rare, tiny diplurid Microhexura montivaga and has numerous new records from the Carolina mountain region, as well as data on life history and behavior.

After hosting the 1979 Eastern Region Meeting, ALAN BRADY headed for the southwestern part of the country to collect lycosids for several weeks.

BILL SHEAR (your editor) spent the summer finishing a revision of the cyphophthalmid opilionids of the United States, and working on a new classification for the suborder, based on cladistic analysis. Time was short because of an added new responsibility as Director of Summer Programs at Hampden-Sydney College.

A week's vacation in California this summer reinvigorated NANCY and NORMAN PLATNICK.

RAINER FOELIX has published a new paperback book entitled "BIOLOGIE DER SPINNEN," printed by Thieme Verlag in Germany. We hope to have a notice of it in AA #21.

We are saddened to have to report the following deaths of esteemed colleagues: DR. H. NEMENZ of Vienna, Austria, died on July 19th, 1979. He was 51. Despite recurring illness, he had planned to be an organizer of the 1980 Arachnological Congress in Vienna.

ERIC N. KJELLSVIG-WAERING died on July 16th, 1979 at the age of 67. He was born in Havana, Cuba, and died in Naples, Florida. He was known to us for his work on fossil arachnids, especially his recent paper, "The Silurian Scorpions of New York."

In late June, DR. MAX BEIER, an internationally recognized authority on Pseudoscorpionida, died suddenly in Vienna, just two days after announcing his plans for a well-deserved holiday the following week. Dr. Beier was one of only a handful of scientists engaged in the serious study of pseudoscorpions.

WILLIAM S. BRISTOWE died on January 11th, 1979, as we briefly noted in our last issue. Dr. Bristowe was 77, not 76 as we reported. He was likewise the holder of the Sc. D. degree from Cambridge University. A longer biography of Dr. Bristowe will appear in a forthcoming issue of the BULLETIN OF THE BRITISH ARACHNOLOGICAL SOCIETY.

JOURNAL NEWS

B. J. Kaston, responding to a note in this section in AA #19 concerning his SPIDERS OF CONNECTICUT, writes "...apparently there has been enough demand so that the authorities in Hartford are considering a reprinting, and have asked me to bring it up to date. But the great expense of printing such a large work (it will be around 1000 pages) may prevent their approving the project after all. We shall see."

Ray Forster of Dunedin, New Zealand, has very generously offered the popular book he wrote with his wife Lynn, SPIDERS OF NEW ZEALAND: AN INTRODUCTION, to the readers of this newsletter at the bargain price of $10 (U. S.). The book is out of print at the moment, but Ray has 60 new copies for sale. Write him in care of the Otago Museum, Dunedin, New Zealand. We have a copy of this book, which is profusely illustrated with color photographs and high-quality drawings, and can state without hesitation that it is worth every penny of the price, and more.

Ray is also author or coauthor of the technical series SPIDERS OF NEW ZEALAND; these are available from the Otago Museum as follows: Part 1, Introduction and Keys to Families, $8.00 (N. Z.); Part 2, Ctenizidae and Dipluridae, $9.50 (N. Z.); Part 3, Desidae, Dictynidae, Hahniidae, Amaurobioididae, Nicodamidae, $9.50 (N. Z.); Part 4, Agelenidae, Stiphidiidae, Amphinectidae, Amaurobiidae, Neolanidae, Ctenidae, Psechridae, $18.50 (N. Z.); Part 5, Cyclotenidae, Gnaphosidae, Clubionidae, Linyphiidae-Mynogleninae, $16.50 (N. Z.). Prices do not include postage. At this date (August 10) $5.00 NZ = $5.28 US. These volumes are of the highest professional quality and are an invaluable introduction to the Southern Hemisphere spider fauna.

THE SCORPIONS OF NAMIBIA by Bruno H. Lamoral is a monograph of 295 pages, with 587 illustrations, appearing in Annals of the Natal Museum in November of this year. It can be ordered in advance for $16.00 (U. S.) from J. G. H. Londt, Natal Museum, Loop Street, Pietermaritzburg 3201, South Africa.

Petitions pending before the International Commission of Zoological Nomenclature and having to do with arachnids will be published in this newsletter as we are advised of them by the commissioners. Currently pending is case number 2143: Proposal to conserve the specific name tenebricola, as published by Wider in Linyphia (1834), but in the sense of Kulczynski, 1887. The following opinion was recently published (Bull. Zool. Nomenclature 34(1)): Case number 1083. The name Pisaurina Simon 1898 (Arachnida, Araneae) is conserved under the plenary powers.

Opinion 1119 of the International Commission on Zoological Nomenclature placed the names Amaurobius C. L. Koch, 1837 with the type species Clubiona atrox Latreille, and Coelotes Blackwall 1841 with the type species Clubiona saxatilis Blackwall on the Official List of Generic Names in Zoology, and placed the names Amaurobius C. L. Koch, 1836, Cavator Blackwall, 1840, Ciniflo Blackwall, 1840, and Caelotes Blackwall, 1849, on the Official Index of Rejected and Invalid Generic Names in Zoology. The name Amaurobiinae is placed on the Official List of Family Group Names in Zoology, and the name Ciniflonidae on the Official Index of Rejected and Invalid Generic Names in Zoology. (Bull. Zool. Nomencl. 35: 216-220, 1979.)

STUDIES IN PAPUA NEW GUINEA

A long letter from Yael Lubin described her work in New Guinea this way: "Michael H. Robinson, Barbara Robinson and I (Smithsonian Tropical Research Institute, Panama Canal Zone) are currently studying several aspects of spider behavior and ecology in Papua New Guinea (PNG). We are based at the Wau Ecology Institute (WEI) at about 1200 m elevation in a region of tropical montane rainforest. A large number of different habitats are readily accessible from the Institute; mid-elevation rainforest (primarily Castanopsis-Nothofagus association), cloud forest, lowland Araucaria rainforest, grassland and a rich variety of secondary-growth and disturbed habitats such as Araucaria and pine plantations, coffee plantations, forest-edge, and garden plots. Recently logged areas provide access to forest canopy species."

"The spider fauna of PNG is extremely rich and diverse - and the mid-montane elevations appear to us richer than any comparable habitats in the neotropics. Collections of spiders from PNG are patchy and the fauna remains poorly known. As an indication of species diversity we can cite in the Wau area alone 5 species of Argiope, 6 Cyclosa species, 5 Gasteracantha species, 5 Cyrtophora species, as well as other araneid genera such as Herennia, Tylorida, Pasilobus, Poecilopachys and Dicrostichus. We have found many uloborids (Uloborus, Philoponella and Miagrammopes); Dinopis; Theridiosomatidae are particularly abundant in the cloud forest and mid-elevation rainforest."

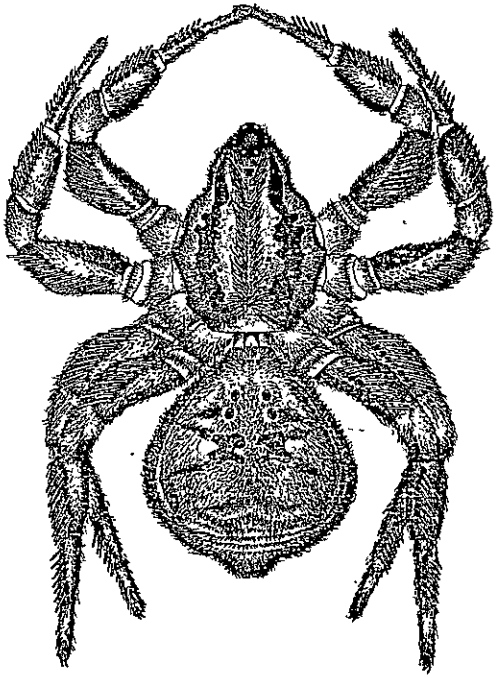
"On understory shrubs of lowland Araucaria rainforest and in Araucaria plantations we found large numbers of Archemorus sp. (Araneidae). This member of a typically orb-spinning family makes no web at all; it sits during the day on the upper surface of a leaf with forelegs poised and seizes flies and other small insects which hover above or alight on the leaf. Archemorus individuals are highly variable in color and pattern, resembling bird-droppings or bits of debris. The Robinsons are studying the predatory behavior of Archemorus, and examining the cues that these spiders use to detect and locate their prey."

"Another unusual genus of araneid spiders, Cyrtophora, builds a non-sticky, horizontal orb web which acts as a "knockdown trap" for flying insects. I have now found 7 species of Cyrtophora in the Morobe district of PNG. Their habits range from solitary to communal, from forest species to those found in grassland, secondary growth and around human habitation. By comparing the cology and behavior of members of this diverse genus I am attempting to deduce its evolutionary history and to reconstruct the pathways that might have led to communal organization."

"Colonies of an 'advanced' social theridiid, Achaearanea sp., are common in large treefall gaps in mid-montane forest around Wau. This species exhibits communal prey capture, feeding and web building behaviors. We are studying the natural history of this species and of some of its less social relatives, emphasizing in particular questions about the evolution and adaptive advantages of advanced sociality. We are also studying a number of araneid species that exhibit varying degrees of communal behavior such as Cyrtophora (mentioned above), Cyclosa, Gasteracantha and Leucauge."

"Other projects on spiders and spider relatives are in progress - courtship and mating behavior of several araneid species, predatory behavior and natural history of the web-building psechrids, Fecenia, Psechrus and Paramatachia, ecology and behavior of Gasteracantha species, predatory behavior of heteropodid spiders and studies of migratory isopods, to name just a few. Nonetheless, we are barely scratching the surface of arachnid natural history, behavior and ecology in PNG; so many aspects remain to be studied."

"During March of this year Prof. H. W. Levi (Harvard Museum of Comparative Zoology) visited us and collected intensively around Wau, as well as in Madang on the north coast of PNG. His visit was exhilarating and invaluable to us since now we will be able to attach names to many of our previously unidentified species. Barbara York Main (Univ. of Western Australia, Perth) also visited Wau in March-April, primarily to collect mygalomorphs and study faunal relationships between New Guinea and Australia. We hope that these visits will stimulate other arachnologists to follow suit. Comfortable accommodation at WEI and use of laboratory facilities can be arranged in advance by writing to WEI, Box 77, Wau, Papua New Guinea. Wau is accessible by air from Port Moresby and by road from Lae. AIR NIUGINI, the PNG national airline, is inaugurating a direct flight from Honolulu to Port Moresby next month."



ARACHNOQUIZ

This issue's ARACHNOQUIZ is for Scorpion specialists--or just people who are interested in these fascinating creatures. The quiz is the work of Bruce Cutler.

1. What is the only English scorpion (an established introduced species)?

2. About how long are the smallest mature scorpions?

3. What peculiarity of the scorpion cuticle makes it easier to collect them at night?

4. From what geological period are the oldest scorpion fossils?

5. All scorpions seriously venomous to man belong to what family?

6. Are there any "spitting" scorpions? Where are they found?

7. How large are the largest scorpions?

8. What scorpion family exhibits true viviparity?

9. What is the largest (in number of species) scorpion family?

10. What are the peculiar opisthosomal appendages of scorpions called?

Both Bruce and Norm Platnick got perfect scores on last issue's quiz, but both declined to accept any prize. In fact, Bruce even donated a prize (a choice item of scorpion literature) for the winner of the current quiz. Here are the answers to ARACHNOQUIZ 2:

1. Microhexura montivaga (though Fred Coyle has new records from nearby.)

2. Caves in Tamaulipas, Veracruz, San Luis Potosi; forest litter in Oaxaca.

3. Palpigradi.

4. Trogulus tricarinatus.

5. Telemidae.

6. Lutica (which, we know now, also occurs on a small strip of the mainland).

7. Homalonychidae

8. Greenbrier Cove, TN, and near Robbinsville, NC.

9. West coast of South Island, New Zealand.

10. Salticidae.

The following biography of Eugène Simon, perhaps the greatest arachnologist of the modern era, was written by Janice R. Matthews, presently of the Entomology Department, University of Georgia, Athens, Georgia. It was first published in April, 1968, in the old Bulletin of the British Arachnological Society, Number 38.

THE LIFE AND WORKS OF FRANCE'S GREATEST ARACHNOLOGIST

Born in Paris on April 30, 1848, Eugène Louis Simon was the son of Charles Simon, a non-practicing physician and a "fervent admirateur des choses de la Nature" (Simon, 1918). As a child, young Eugène frequently made visits to the botanical gardens with his father; he received the Suites à Buffon as a New Year's gift, and he would spend hours copying the plates from Cuvier's Règne Animal (Fage, 1924). Thus, Simon quickly absorbed the interests of his father and displayed a precocious interest and knowledge in the natural sciences. At the age of fifteen, although his actual studies had been in the humanities up to that time, he decaled his intent to pursue a career in science, and was made a member of the entomological societies of France and Berlin.

In order to acquire a general scientific knowledge, Simon studied at the Sorbonne under such men as Milne-Edwards, Claude Bernard, and Lacaze-Duthiers, but his special interest in arachnids was already evident. At the age of sixteen, Simon made his scientific debut with the publication of his first edition of Histoire Naturelle des Araignées, a resume of the work of his predecessors in this area. With youthful zeal and enthusiasm Simon made known at this time (Berland, 1924) his intention to create a taxonomic work on the spiders of the world and an account of the Arachnida of France; for the whole of his life he directed his major energies to the fulfillment of these objectives.

In order to collect materials from a broad geographical base, Simon became a world traveller. Being independently wealthy, Simon apparently found these voyages no financial problem, but he made clear that he was adventuring by necessity rather than by natural inclination. Although it was common during this period for workers to simply sit at home and describe specimens sent to them from others in the field, Simon knew these collections would tend to be "riches en grosses espèces, brillament colorées et de capture facile" (Fage, 1924). Thus, Simon felt the necessity to collect personally in order to obtain a more representative sample from foreign lands.

Wasting no time, Simon set out that very same year to Sicily to collect arachnids, then, in 1865 and 1868, travelled to Spain on excursions arranged by the Société entomologique de France. At the age of 21, he spent nearly a year in Corsica, then two years later took part in a voyage to Morocco. But with all these and later expeditions, Simon carefully endeavoured to be in a different part of France each spring and autumn, when the spider collecting was at its peak there.

The first volume of Les Arachnides de France was published in 1874, thus beginning a work which would continue without interruption for the next ten years. Its quality was immediately apparent to the French scientific community, and Eugene Simon enjoyed an honour accorded to few men, that of being recognised and esteemed both early and throughout his own lifetime. At the age of 27, Simon was made president of the Société entomologique de France, an office he held three separate times during his life. At 34, he was president of the Société zoologique de France.

Meanwhile, Simon continued his travels and collections. In 1875 he visited Tunisia and Algeria; in 1887 and 1888, Venezuela; Suez and Aden in 1889-90; the Phillipines in 1890; Ceylon in 1892; and South Africa in 1893. Concurrent with these expeditions, Simon was also continually examining spiders sent to him by museums and other travellers, and publishing a steady stream of papers on them. Yet with all this, Simon did not restrict himself only to spiders, but showed an amazing abundance of energy and diversity of interests. During this period in his life he also studied crustacea (publishing an important work on Phyllopoda in 1886); began the observations and collections of hummingbirds which were to win him fame later in life, and established himself as a botanist and mycologist of note.

When, in 1892, the first fascicle of the second edition of Histoire Naturelle des Araignées appeared, the second great aim of Simon's life had begun to be fulfilled. The remaining seven fascicles appeared at regular intervals in 1903, the finished work being comprised of two tomes of over one thousand pages apiece. This immense work has even today the distinction of being regarded as the most famous and, in many ways, the most useful, of all spider books (Savory, 1961).

Then, at the age of 53, having completed this major ambition, Simon turned again to his review of the spiders of his native land. But the nineteen years which had elapsed had brought so many changes in classification that continuation along former lines was unthinkable. Thus, Simon was forced to begin a total revision of the first five volumes (Simon 1874-1884); this revision, together with a complete list of the spiders of France, was to comprise the sixth and final volume of his Les Arachnides de France. The first part was published in 1914, but the First World War temporarily halted publication of the remainder.

In failing health, Simon published less than ten short papers after 1914, although his Histoire naturelle des Trochilidés (Hummingbirds) of 1921 was considered a masterpiece of its kind, and the most important work on this subject issued in many years (Ibis, 1925). Still, his influence upon his colleagues was greater than ever. He has been described in his later years as "the unquestioned omniscient to whom all turned instinctively for advice or approval or decision" (Savory, 1945). In 1909 he became a Corresponding Member of the Academie de Sciénces and in 1918, Associate of the Paris Museum. In 1922, on the centennial celebration of the birth of Louis Pasteur, Simon was promoted to Chevalier of the Legion of Honour.

Simon was in the habit of gathering around himself many colleagues at his beautiful home at 16 Villa Said, a secluded spot not far from the Bois de Boulogne. To be included was apparently quite an honour, for each of his biographers comments on it proudly. The guests at these meetings were drawn from wide sources, often extending beyond national boundaries and even across oceans; for example, in 1875 Simon is known to have received T. H. Emerton, the only early American arachnologist to visit Europe (Savory, 1961).

Simon never lived to see the publication of his great Les Arachnides de France. His health continued to fail, and on November 16, 1924, at the age of 76, Eugène Louis Simon died in Paris. The zoological world mourned a great loss and L. Fage and L. Berland, two of Simon's closest colleagues, dedicated themselves to spending the next twelve years of their lives publishing the manuscripts which Simon had left.

After Simon's death, and especially during the two decades between world wars, there was in arachnology a period of consolidation. The completion of the sixth volume of Les Arachnides de France expressed the essence of this period, for it included a revision of past work, a gathering together of loose threads, and a presentation of all the available and significant knowledge of the spiders of France (Savory, 1961).

Simon's students, together with J. Millot and P. Bonnet, formed the nucleus of the French school of arachnology which perpetuated Simon's influence. At the Paris Museum where Simon had been Associate, Fage became professor, holding this post until, with his retirement, Professor M. Vachon, who presently holds this post, succeeded him. Berland gained prominence through his authoritative popular accounts of arachnids in the "Les Livres de Nature" series; however, his career was abruptly terminated by emotional shock when his only son was shot by the Germans (Levi, 1966).

To understand more fully Eugène Simon's influence on the science of arachnology, it is necessary to digress briefly into the history of this science, for it is younger than most areas of taxonomy. Until the end of the eighteenth century all studies of spiders, scorpions and their allies formed only a small part of the wider study of entomology, for these were described as wingless insects and included in one genus, the Aranea of Linnaeus, of perhaps 500 different species (Savory, 1961).

In 1802, Charles Athanasius, Baron Walckenaer published his two-volume work, Fauna parisienne, which included 131 Parisian spiders and indicated several sub-groups within Aranea. On these, Pierre André Latreille, a priest and leisure-time entomologist, based the first set of genera for spiders, thus marking the real beginning of spider systematics. Upon Latreille's death, in 1833, his work was extended by Walkenaer into the important Histoire naturelle des Insectes Aptères (1837-1847).

During the eighteenth and nineteenth centuries, the immense amount of collecting so energetically pursued throughout the biological realm was producing its effect in arachnology as well. Very large numbers of exotic, oriental and antipodean specimens were being received, classified and described by the specialists of the day, and much of Simon's work must be counted as a product of this phenomenon. This stage was a mixed blessing to zoology however; its most obvious consequence was the creation of an enormous number of synonyms by writers with faint knowledge of the work of their contemporaries. (Savory, 1961, notes that on the average every "new" spider of the period emerged with six different names).

Arachnology was, at first, very strong in France; then during the mid-1800's the centre of activity shifted away from France to Germany. An important part of this shift was due to the 14-volume work of C. W. Hahn and C. L. Koch "Die Arachniden," which appeared between 1831 and 1848. In contrast to the French manuscripts with their terse descriptions and infrequent illustrations, the two-thousand-plus pages of 563 beautiful coloured plates of this work captured the attention of zoologists everywhere, and was very influential in founding a German tradition of active interest in arachnology which flourished for nearly a century (Savory, 1961). Its major shortcoming, as was realized later, was the lack of a natural scheme of classification, particularly above the family level.

This then, was the state of the science with which Eugene Simon cast his lot in 1864. Walckenaer's work had made clear to him the vast opportunities in a group so imperfectly known; Die Arachniden showed how many species had been described from Germany, while from his native France almost nothing had been done. Furthermore, the review of existing work in araneology which led to his first publication impressed him with the artificial nature of the arachnid classification as it then stood (Berland, 1924).

Some of Simon's techniques appear regrettable today; to name a few (Levi, 1966) --- Simon's habit of simply dumping specimens together in one vial when he synonymized the names of species; his incomplete labels, written in code on poor paper which has visibly suffered from its century in alcohol; his short and inadequate descriptions and rather crude and infrequent illustrations. But, professionally, Eugène Simon was a man with a 'happy touch', a profound knack for seeing the large overview in arachnid relationships. His Histoire Naturelle was a new, fully documented classification of an entire order. Its two thousand pages dealt with the systematics of the spiders at the generic level and above; even at this time, there were more than 15,000 species (Bonnet, 1966), far too many to deal with in one man's working life. Yet his method and insight were so perspicacious that even with the passage of one hundred years since Eugène Simon began his two great ambitions, his classification is still admired and respected, and has been altered only in detail.

The very fact that his is the sole source of keys to all the genera of spiders known to the turn of the century, speaks much for their value; they are useful also for the precise fact that they are not based primarily on genitalic characters, as are most today. Moreover, Simon was consistent in examining as wide a range of geographical and morphological variation as he could, thus adding a valuable broadness to his studies, for his collection was so large that he could never have examined and characterized every single specimen. For example, when Miss M. E. Galiano (1963) undertook to re-describe Simon's species in just a single family, the Salticidae, it involved over two years full-time at the Paris Museum and the completed work occupied 200 pages. This gives a slight indication of the extent of Simon's work when one realizes that he described, during his lifetime, less than half of his collection (Levi, 1966).

Simon's industry and unremitting attention were just short of legendary, as was his memory. He never discarded a specimen and never halted his prodigious collecting of all spiders, even the commonest. At the end, his collection numbered over 20,000 vials, with some species represented by hundreds of specimens. Yet his memory was so sharp that he was able to recall the collection locality data when presented with a single specimen which he had not seen in twenty years (Berland, 1924).

One interesting omission from Simon's writings is any mention of evolution. This is not surprising however, for he was not a philosopher, and showed reluctance to stray into speculation (Berland, 1924); furthermore, he showed a marked avoidance of controversy (Levi, 1966). Simon may also have been influenced in this by his professor at the Sorbonne, Lacaze-Duthiers, who, very sceptical of many of the movements of the day, including evolution, made his conservatism clearly known to his students (Nordenskiöld, 1928).

Very little information is recorded regarding Eugène Simon's private life. We know through Berland (1924) that he married a very devoted woman who accompanied him on the majority of his voyages and helped him with much of the preparation and maintenance of his immense collections, as well as maintaining at home "tant pour l'atmosphère de calm sérénite, propice à la recherche scientifique".

AMERICAN ARACHNOLOGICAL SOCIETY

ELECTION OF OFFICERS, 1979

The AAS constitution provides for election in odd-numbered years, of a President-Elect, a Treasurer, and one member to the Board of Directors. In the same year, the sitting President-Elect becomes President, the sitting President becomes a member of the Board of Directors, and the longest-sitting member of the Board of Directors leaves the Board.

The Nominating Committee consisted of George Uetz (Chairman) and Fred Coyle, who were appointed by the Executive Committee. The Executive wishes to thank these members who gave generously of their time to nominate the candidates and conduct the mail election. Thanks also go to Charles Ohler, Mike Bruggeman, Bob Hollis, and Gail Stratton for assisting in the collection and counting of the ballots.

This year the Executive Committee proposed some amendments to the Constitution, and voting members were asked to indicate agreement or otherwise on their ballots. The amendments appeared in the May 1979 issue of the Society's newsletter American Arachnology.

Results of the election are as follows (asterisk indicating winners):

President Elect: Jon Reiskind 73*, Jerry Rovner 61.

Treasurer: Norman Horner 119*

Write in names (1 vote each): Allen Brady, Fred Coyle, Norman Platnick, Mel Thompson, George Uetz.

Board of Directors member: Sue Riechert 57*, Vincent Roth 42, Allen Brady 35, H.K. Wallace 15.

Constitutional amendment: Agree 119*, disagree 6.

Please note that, according to one of the constitutional amendments, newly elected officers take office on Sept. 1 of the year in which they are elected. Therefore as I leave the presidency I wish to thank the retiring officers for their cooperation during the past two years and to welcome the new officers to their positions. I also respectfully solicit everyone's help on behalf of President Herb Levi and the other members of the Executive Committee to keep the Society strong and on target.

Charles Dondale
Member, Board of Directors

Simon appeared, to those who knew him, to be "un homme parfaitment bon". He had a charming personality, perfect manners, and was always ready to give advice and good counsel (Hellmayr, 1925). He was generous and hospitable, a modest and engaging companion who could charm his guests with stories of the history of Paris as easily as with scholarly knowledge across a wide range of biological subjects.

Of the tributes paid to Eugène Simon, T. H. Savory's (1945) seems to most succinctly express Simon's major contribution to science: "He had come to arachnology as a boy of 16 and found it in an elementary and chaotic state; he left it securely founded on logical principles of his own determining".

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Norman Horner, host of the 1979 Western Region Meeting, held in Wichita Falls, Texas, on June 13th to 16th, sent us the following abstracts of papers presented there. Other activities at the meeting included an arachnid photography show and two field trips, one to the flood plain of the Red River and one to the Wichita Mountains Wildlife Refuge in Cache, Oklahoma.

THE MECICOBOTHRIIDAE: IS CONVERGENCE CONVINCING?

Norman I. Platnick

The mygalomorph spider family Mecicobothriidae has been considered one of the classic examples of convergence within the Araneae. Mecicobothriids and diplurids are the only mygalomorphs in which the posterior lateral spinnerets are greatly elongated and bear long, flexible terminal segments used to spin sheet webs. It has nonetheless been suggested that this similarity only "illustrates how in widely unrelated creatures similar activities often lead to the production of similar morphological features." However, existing evidence that these are widely unrelated creatures is inadequate, and additional evidence from the morphology of the serrula and tarsal organ indicates that the two families are closest relatives and that the spinneret and web similarities are instances of synapomorphy rather than convergence.

PITFALL TRAPPING EFFICIENCY IN DESCRIBING SPIDER COMMUNITIES

David J. Curtis

An empirical study used 4 trap-types:- 1: plain/control, 2: dilute detergent, 3: detergent + 4% formalin, 4: dry/covered - at one island and two mainland deciduous woodland sites at Loch Lomond, Scotland. Trap-type did not effect species frequency distributions at site 1 - oakwood on island of Inchcailloch, nor at site 3 - birch wood with wet mossy floor, but did so significantly ($p < .001$ by χ^2) at site 2 - mixed wood with ground flora similar to site 1.

Seasonal variations in numbers caught of individuals (N) and of species (S) by the 4 trap-types showed fairly good agreement (by Spearman rank correlation). Clearly, "more efficient" types (2 and 3) give higher N and S, but a rarefaction procedure predicts higher S for standard sample size for types 2 and 3. This implies distortion of species' relative abundances on which so much ecological theory depends.

It is well known that N (and S) depends on (e_i , a_i , d_i), where e_i is trap-efficiency, a_i is activity, and d_i is density, for species i. Importantly, changes in e_i vary between species. Regrettably, this reasoning also applies to other sampling methods, e.g., by hand, dependent on ease of capture (e_i), and indicates severe problems in obtaining adequate descriptions of spider communities. The high numbers of species yielded by pitfalls, relative to other sampling methods for ground-layer fauna, justifies their use.

THE LIFE HISTORY AND HABITS OF PHOLCUS PHALANGIODES (FUESSLIN)

Mary Lambright

A brief life history is given for P. phalangiodes. Then the "whirling" behavior exhibited by individuals of this species when disturbed is discussed. Whirling is observed in individuals of all developmental stages except the first instars (which usually drop from the web when disturbed). The general pattern of whirling behavior is described although the direction, duration and speed of the whirl may vary. It is proposed that whirling functions as a protean behavior which reduces predation or parasitism of P. phalangiodes.

MYSMENOPSIS IN DIPLURID WEBS

Larry Kirkendall

A large diplurid spider (Diplura sp.) and two tiny Mysmenidae inhabiting its extensive funnel webs (Mysmenopsis dipluramigo) Platnick and Shadab, M. gamboa Platnick and Shadab) were studied in two localities in Panama during the summer of 1976, through observation of both undisturbed diplurid webs and webs re-built over a gridded white sheet. Feeding experiments demonstrated that many Mysmenidae moved to the diplurid's retreat soon after their host captured prey, where they attempted to feed from the partially predigested prey item. If diplurids detected Mysmenopsis, they attempted to brush them away. Size relationships between diplurid and Mysmenopsis individuals, and between the two Mysmenopsis spp., seemed to affect the co-occurrence of the spiders in any particular web; the larger dipluramigo was not found in webs of small Diplura, and gamboa was never numerous in webs containing very many adult dipluramigo. Dipluramigo (mainly juveniles) were also found in webs Agelenidae, Pisauridae, and subsocial Scytodidae.

UNUSUAL HABITATS OF SOME GARYPUS PSEUDOSCORPIONS OF BAJA CALIFORNIA, MEXICO

Vincent F. Lee

Members of Garypus are mostly tropical and subtropical pseudoscorpions generally restricted to the supralittoral zone of coastal sandy, cobbleston, and rocky beaches. A few species have been reported from salt marshes and nests of birds.

Two atypical habitats in Baja California are reported for two species. On Isla del Espiritu Santo, a population of Garypus sini lives on the shore of a small hypersaline lake. On Isla de Guadalupe, G. californicus members do not live in the supralittoral zone, but above it on the slopes of this almost entirely volcanic island.

Species interaction and zoogeographical implications are discussed.

Perimones britteni - JUST HOW DISCRETE CAN A POPULATION BE?

David J. Curtis

The distribution of the linyphiid Perimones britteni (Jackson) shows only 10 scattered small dots on the British map. This species, an inhabitant of wet habitats, has been recorded in pitfall traps at four additional peat-bog sites in south-west Scotland, with negligible captures at three of these by many males and females at Silver Flowe, Galloway. Silver Flowe comprises a series of 8/9 discrete bogs (blanket or raised) separated by laggs and rands and by intermediate bog. Fairly intensive sampling has yielded this species abundantly on only one of these bogs, with lower numbers on the adjacent bog and none elsewhere. Description of vegetation physiognomy by a vertical quadrat method (Curtis & Bignal 1978) at these sites may provide a clue as to why this species' distribution is so restricted.

A PRELIMINARY STUDY OF SPIDER POPULATIONS IN THE SOIL-GRASS INTERFACE

William F. Rapp

Forty-three samples of grassland litter and prairie soil collected in the grassland biome were extracted in a Tullgren funnel. Eight or 18% of the samples did not have spiders. In numbers populations varied from 0 to 68 per square meter. The mean population was 19 with a standard deviation of 2.3. This mean population may be lower since 19 samples contained zero to 8 spiders per square meter.

My studies to date indicate that thickness of litter and moisture may be important controlling factors in determining the population. In overgrazed pastures and areas where the litter were highly compacted spiders were absent. A litter thickness of two or more inches plus sufficient moisture supports the largest spider populations. Uncut virgin prairies appear to be the best habitat for spiders at the soil-grass interface.

ARACHNIDA OF THE LA BREA "TAR PITS"

Blaine Hebert

The La Brea Tar Pits of Los Angeles, in addition to preserving a large number of spectacular vertebrate fossils, also contain many arthropod parts. Beetles comprise most of the preserved material, but a preliminary examination shows spiders of at least four families represented by a series of cephalothoraxes. Also about 75 scorpion parts were found.

HABITAT STRUCTURE AND COLONIAL BEHAVIOR IN METEPEIRA SPINIPES (ARANEAE:ARANEIDAE) AN ORB WEAVING SPIDER FROM MEXICO.

George W. Uetz

Data on habitat preference and group size in Metepeira spinipes F. P. -Cambridge, a colonial orb weaving spider from Central Mexico, are presented. M. spinipes colonies are associated with microhabitats of permanent structure, and occur most frequently in maguey plants (Agave sp.). Colony size appears to be independent of microhabitat structure. Distribution of group size in two contrasted habitats (Agaves and willows) showed a significant difference from a zero-truncated Poisson distribution and a good fit to a zero-truncated Negative Binomial distribution, indicating a tendency to aggregate independently of habitat. Amount of individual space decreased with increased colony size, indicating a tolerance of conspecifics greater than expected if spiders merely attached individual webs together. The combination of solitary and colonial behaviors exhibited by this species suggests that it may represent an intermediate stage in the evolution of social behavior in orb-weaving spiders. Possible selective advantages to group-living in this species and the evolution of coloniality are discussed.

THE PHYLOGENETIC POSITION OF THE SPIDER FAMILY ANYPHAENIDAE: A PRELIMINARY REPORT

John A. Kochalka

It is suggested that the Anyphaenidae form a monophyletic group, related to Hahniidae, Argyronetidae, Desinae, and Matachiinae, of Forster (1970). The resulting hypothesis is a quadrichotomous diagram with Argyronetidae and Hahniidae as sister groups of each other. Based mostly on the data of previous authors, an attempt is made to discredit all other reasonable hypotheses of anyphaenid relationship. The ultrastructure of the scopula hairs supports the monophyly of the Anyphaenidae, and suggests that in the Anyphaenidae (and their relatives?) the scopulae originated independently of other Amaurobiomorpha, a monophyletic taxon which includes all of the Amaurobiides and Zodariides of Lehtinen (1967).

ACCOUSTIC COMMUNICATION IN A GROUP OF WOLF SPIDERS

Gail Stratton

Studies of a new spider species, Schizocosa rovneri Uetz and Dondale, provide an example of how courtship behavior functions as a species isolating mechanism. Courtship behavior in this species is distinct from that of Schizocosa ocreata (Hentz), a sibling species with identical genitalia. Sexual communication between males and females is the critical factor in the reproductive isolation of these species. Substratum-coupled stridulation plays a major role in this communication.

Courtship behavior and receptive behavior of the male and female are described. Laboratory pairings have shown that males of both species court conspecific and heterospecific females with almost equal frequency. However, females only respond receptively to and copulate with conspecific males. Males of S. rovneri exhibit quantitative differences in aspects of courtship behavior in response to different stimuli.

A series of experiments designed to isolate the various components of sexual communication is S. rovneri (visual, olfactory, tactile and auditory) revealed a hierarchy of stimuli. For male S. rovneri olfactory and/or tactile cues from the female's silk are sufficient to release courtship behavior. Visual contact is also a sufficient releaser if the female moves. For female S. rovneri, visual contact and/or male silk are not sufficient to release sexually receptive behavior. Auditory communication (stridulation of the male palps) is necessary and is by itself sufficient to induce receptive behavior in female S. rovneri.

A forced mating technique using anesthetization of female spiders was used to test for interfertility. Heterospecific pairings of female S. rovneri and male S. ocreata, and female S. ocreata with male S. rovneri each resulted in the production of egg sacs and offspring. It is suggested that differences in courtship behavior serve to maintain reproductive isolation is these two species, whose spatial, temporal and gametic isolation is incomplete.

Allen Brady hosted the 1979 Eastern Region Meeting in Holland, Michigan. The meeting took place from June 20th to 23rd, and included field trips to Saugatuck to view dune succession and the dune forest, and to New Richmond, for collecting in an oak forest and bog. Those who attended also heard Herb Levi talk on his experiences in New Guinea earlier this year. Allen has sent the following abstracts (some papers were duplicated at the western meeting and are given under that heading).

FIELD INVESTIGATIONS INTO THE RELATIONSHIPS BETWEEN HEIGHT, VEGETATIONAL PREFERENCE, ORIENTATION, AND THE SEXUAL ACTIVITY OF LYCOSA PUNCTULATA (HENTZ)

Alan Cady

Direct nocturnal observations of adult Lycosa punctulata showed a sex ratio of approximately 1:1. Spiders were found to prefer plant tops, with males positioned higher on vegetation than females. Stepwise regression indicated the best predictor for spider height was vegetational type. The second best was sex. On dry grasses, males were oriented differently from females. A sit-and-wait mating strategy is suggested, in contrast to males actively searching for females. A possible relationship between temperature, humidity, and the two different mating strategies could suggest switching of strategies.

THE GENERA OF THE SPIDER FAMILY ANYPHAENIDAE: A PRELIMINARY REPORT

John A. Kochalka

Cladistic methods are used to divide the Anyphaenidae into smaller monophyletic taxa. Based on the hypothesis that the Anyphaenidae are related to the Hahniidae, Argyronetidae, Desinae, and Matachiinae, outgroup comparison suggests that the following characters are plesiomorphic for the Anyphaenidae: 1) tracheal spiracle posterior, 2) female insemination ducts following a complex, loose path, 3) labium without distal notch, 4) 2 or 3 retromarginal cheliceral teeth, 5) male palp with a thick retrolateral tibial apophysis, 6) male palp without lightly sclerotized area at base of tegulum. Aysenia Tullgren, Philisca Simon, Cluilius Simon, and Sanogasta Mello-Leitão are newly transferred into the Anyphaenidae from the Clubionidae.

DIVERSITY AND PHYLOGENY OF THE SPIDER FAMILY ULOBORIDAE

Brent D. Opell

Uloborids have a variety of tracheal patterns, male and female genitalic forms, and behavioral patterns which, in addition to traditionally recognized differences in web form and carapace structure, support recognition of sixteen genera. This family includes both haplogyne and entelegyne members. Cladistic analysis of its phylogeny suggests that the orb is the family's primitive web form which has been reduced in two lineages: one leading to Polenecia and Hyptiotes and another leading to Miagrammopes. This analysis also predicts what web forms are produced by members of eight genera whose webs are undescribed.

VIBRATION IN MALE HETEROPODA VENATORIA (SPARASSIDAE): A THIRD METHOD OF SOUND PRODUCTION IN SPIDERS

Jerome S. Rovner

Pheromone-stimulated male Heteropoda venatoria (L.) produce sounds during bouts of leg oscillations while coupled to the substratum by their tarsal adhesive hairs. No stridulatory organ is involved. Preventing palpal percussion and abdominal vibration does not eliminate primary sound production. Leg oscillations rates of 83 and 125 Hz, roughly estimated from high-speed cinematographic samples of primary signalling, were within 1 SD of the mean frequencies of the lowest ($\bar{Y}$ = 94 Hz) and highest ($\bar{Y}$ = 146 Hz) frequency wave-trains, as indicated by preliminary oscillographic analysis of such sounds. These signals probably are analogous to insect flight-sounds, the fundamental frequency being determined directly by the appendage oscillation rate.

GOLDEN SILK SPIDERLINGS CHANGE THEIR ATTITUDES BEFORE DISPERSAL

Donald L. Kimmel, Jr.

Nephila clavipes (L.) spiderlings live communally in a tangle web between emergence and dispersal in laboratory or field. Spiderling attitudes - body orientations with respect to gravity - were scored daily during communal life as anterior or posterior (face or spinerettes down, A-P body axis within ± 30° of vertical), dorsal or ventral (frontal body plane within ± 30° of horizontal), or lateral. Second instars relinquish the lateral for the dorsal attitude; they adopt the anterior attitude after the second molt, before dispersal and solitary life on geometric webs. ($p = 0.01$ or less by tests for trend).

WEB ORIENTATIONS AND MODIFICATIONS TO WIND AND LIGHT IN THE SPIDERS ARANEUS DIADEMATUS CLERCK AND ARANEUS GEMMOIDES CHAMBERLIN AND IVIE (ARANEAE, ARANEIDAE).

Craig S. Hieber

Females of two orb-weaving spiders, A. diadematus and A. gemmoides, were exposed to different categories of wind and light in a wind tunnel. Low wind speed (1.2 m/sec) was used in the study. An artificial sun for the spiders to cue from was provided by lights mounted above the wind tunnel. Web face orientation angles and internal web parameters were measured for comparison between the wind/light categories.

Araneus diadematus exhibited a significant web orientation to light and a significant reduction in web surface area to wind. Araneus gemmoides exhibited significant web orientations to wind and light, but did not show web surface area reduction in relation to wind. These web orientations and modifications are discussed in relation to insolation control, web damage control, and optimal foraging.

WEB-SITE CONSTANCY IN SOME WEB-SPINNING SPIDERS

Anthony C. Janetos

Web-spinning spiders which move often from web-site to web-site may be called active searchers, while those which stay at one web-site are sit-and-wait-predators. The size distributions of prey captured by linyphiid and araneid spiders in second growth in New Jersey are the same, but residence times at web-sites differ for the two families. Linyphiids' movements are essentially random, while araneids have a preponderance of very short and very long residence times. The Araneidae in this habitat may exhibit a simple behavioral rule which allows them to find highly profitable web-sites. Further evidence comes from data on the variability of prey capture: linyphiids have a slow and steady rate of prey capture, while araneids have highly variable rates of prey capture, and seem adapted to finding web-sites which give them large payoffs quickly.

INTRASPECIFIC AND INTERSPECIFIC EFFECTS OF DENSITY MANIPULATIONS UPON SURVIVAL AND REPRODUCTION OF TWO ORB-WEAVERS

David H. Wise

Replicated single-species and mixed-species populations of the basilica spider, Mecynogea lemniscata (Walckenaer), and the labyrinth spider, Metepeira labyrinthea (Hentz), were established at a range of densities on open experimental units in the species' natural habitat. Survival and reproduction on the units were followed from August 1 through November 1, 1978. There were no statistically significant interspecific effects of density upon either survival or reproduction, suggesting that interspecific competition between mature females may not be a significant interaction for these species. Intraspecific effects were weak, and when they were statistically significant, explained only a very small fraction of the variance in survival and egg production.

INDIVIDUAL AND COLONY ACTIVITY PATTERNS IN THE SOCIAL SPIDER MALLOS GREGALIS (ARANEAE-DICTYNIDAE)

William J. Tietjen

The activities and behaviors of isolated and grouped M. gregalis were recorded by electronic and direct observation methods. The colonies activity was nocturnal while individuals shifted between high and low daily activity levels on a day-to-day basis. Active spiders were found mainly on the web-surface, inactive spiders in the web-interior. The probability patterns for various behaviors was affected by web position and individual activity level. I suggested that changes in an individual's daily activity level allowed each animal to partition its behavior between self-maintenance (i.e., feeding, reproduction) and colony-maintenance (i.e., prey-capture and silk-deposition) activities.

PREY DENSITY AND TOLERANCE IN NON-SOCIAL SPIDER SPECIES

Ann L. Rypstra

Different densities of several species of forest spiders (Araneidae, Linyphiidae, Theridiidae) were introduced into cages from which most natural prey was excluded. Survivorship and foraging activities of the individuals were monitored over a fourteen day period during which a fixed number of Drosophila melanogaster was released into each cage daily. In those experiments in which the amount of introduced prey was the greatest the largest amount of spiders remained actively foraging. In addition, both interspecific and intraspecific aggression decreased and tolerance increased to the point of sharing guylines with the webs of other individuals at the highest prey densities.

FORAGING SPECIALIZATION IN TWO ORB-WEAVING SPIDERS

Cader W. Olive

In the laboratory, Argiope trifasciata captures jumping prey more successfully, and Araneus trifolium captures flying prey more successfully. Argiope tends to build its web in low, grassy sites where Orthoptera are most available, and Araneus tends to build in high herbaceous sites where flying pollinators are most available. Both morphology (leg and fang geometry) and web design (ornamentation, number of attaches, mesh density) appear to affect prey capture success and encounter rates. However, habitat use cannot be predicted by foraging specializations alone; predation, thermal, and dessication constraints must also be considered.

AN EXAMINATION OF PLATNICK AND GERTSCH'S "THE SUBORDERS OF SPIDERS: A CLADISTIC ANALYSIS"

Joseph A. Beatty

A reinterpretation of the characters used in Platnick and Gertsch's paper, along with the use of two additional characters, supports the classification employed by Gertsch in 1949. The liphistiids are placed with the Atypoidea, and the suborders become Mygalomorpha and Araneomorpha. A high number of chromosomes, as in Heptathele kimurai, is a primitive, not a derived character.

SOME STUDIES OF SPIDER CHROMOSOMES

Steven Hetzler

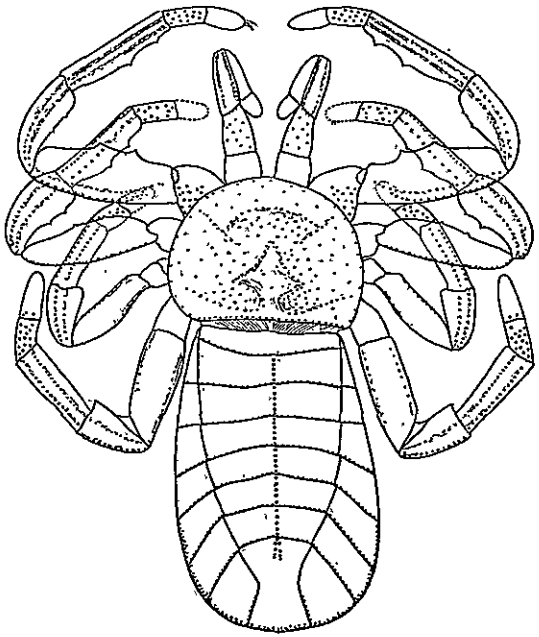
Eight species were examined; results are still preliminary in some cases because the work is not yet completed. Loxoceles reclusa and Filistata hibernalis have a Y-chromosome in the male, the first Y-chromosome known in spiders. These two species also have all the chromosomes metacentric (except possibly the Y in Filistata), a rare condition in spiders. Myrmekiaphila torreya has 2n = ±80 chromosomes, the second highest number yet found in spiders. Dysdera crocata has 2n = 8 chromosomes in the male and 10 in the female, the second lowest number found in spiders so far. Other numbers: 2n = 46 in male Antrodiaetus unicolor, 2n = 26 in male Scytodes sp. indet., 2n = 42 in male Cyclocosmia torreya, and 2n = 23 in male Ariadna bicolor.

THE STABILIMENTA OF ARGIOPE AURANTIA AND ARGIOPE TRIFASCIATA AS DEFENSES AGAINST AVIAN PREDATION

Charles C. Horton

Argiope aurantia and A. trifasciata are closely related orb-web spiders which inhabit old fields throughout North America. The webs of A. aurantia and A. trifasciata frequently contain stabilimenta, a web structure consisting of vertical zigzags of ribbon silk.

Experiments were performed which indicate that the webs and stabilimenta of A. aurantia and A. trifasciata inhibit avian predation. These experiments demonstrate that contact with the webs constitutes a negative stimulus to blue jays, and that the birds tend to avoid contacting the webs. The experiments also show that stabilimenta enhance avoidance of the webs by blue jays. Web avoidance appears to be a learned response. Based on these experiments I suggest that the stabilimenta of A. aurantia and A. trifasciata advertise the presence of the web, a noxious stimulus.



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