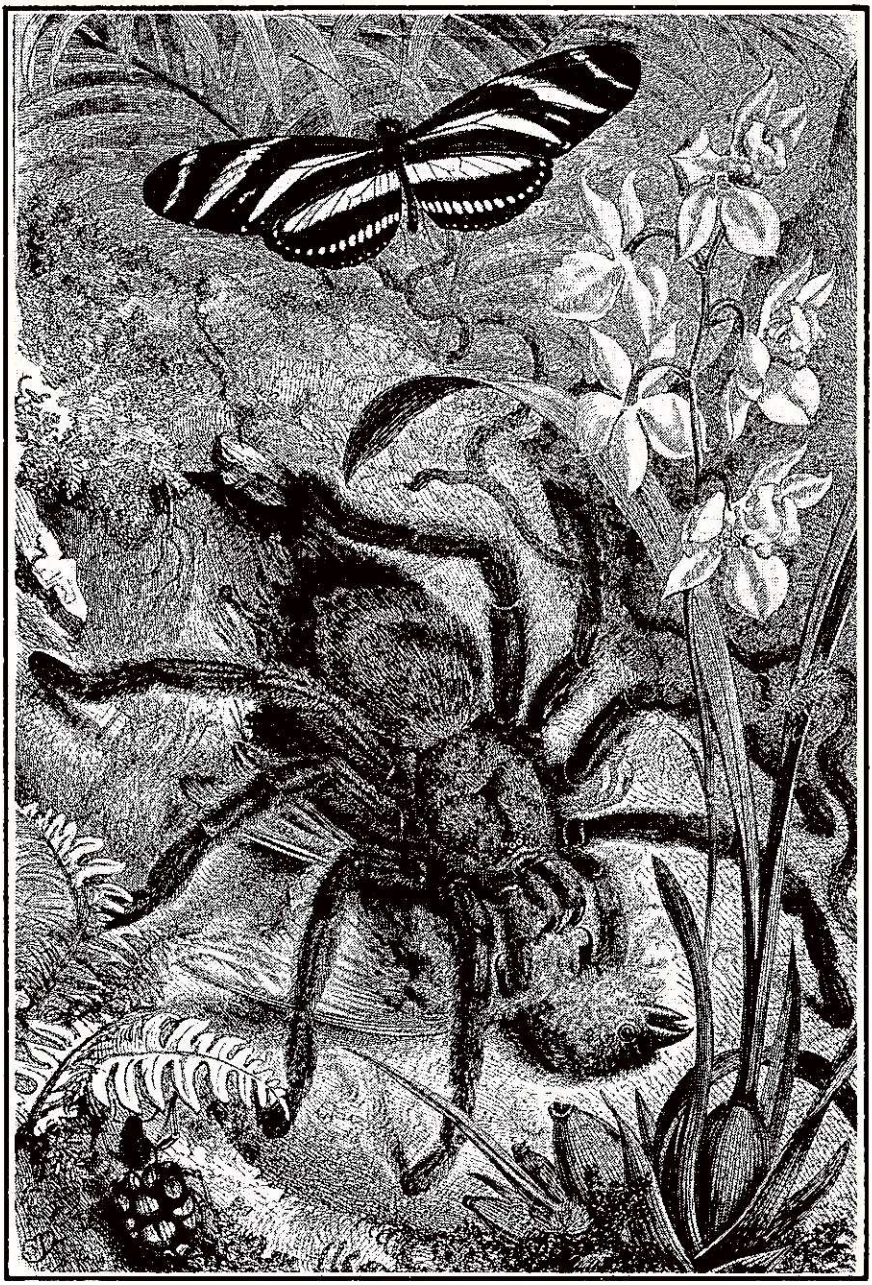
American Arachnology

The Newsletter of the American Arachnological Society



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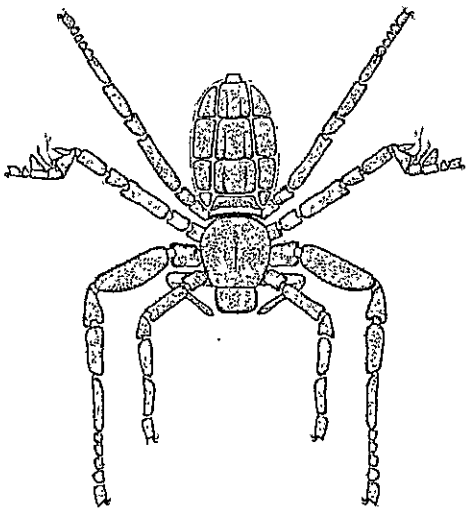
In this issue of AMERICAN ARACHNOLOGY:

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, William A. 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.



WESTERN CAROLINA GETS WITT LIBRARY

Dr. PETER WITT has generously presented his personal library of approximately 100 volumes of spider literature to Western Carolina University, Cullowhee, NC. This collection will be part of the library's "Special Collections" under the care of Dr. JAMES LLOYD. The WCU Library is in a position to purchase additional volumes on spiders to add to this collection. They will welcome inquiries from anyone who has rare or moderately rare volumes of spider works that they are interested in selling. Included in the Witt Collection are the three volumes of McCOOK'S American Spiders and their Spinning Work. Dr. LLOYD would like comments from interested persons regarding the need for a reprinting of these volumes, or at least the first two, which deal with spider natural history. Nearly two years ago, we noted in these pages (AA #19, p. 4) that we had contacted Dover Publications with just this suggestion. They were interested, but have not explored the idea further.

Undergraduate students with an interest in spider research should know that the Department of Biology at WCU has a strong graduate program (M.S. in Biology) with two arachnologists (FRED COYLE and JOHN McCRONE) on the faculty and another faculty member (FREDERICK HARRISON) with an active research interest in the histochemistry of silk glands. With close ties to the Highlands Biological Station, a growing collection of southern Appalachian spiders, and a fine collection of spider literature, WCU has much to offer students interested in graduate research in the systematics, behavior, ecology, or histology of spiders.

PEOPLE

DON LOWRIE is back in Santa Fe after nearly 9 months in Paraguay, advising the government there on the development of a National Museum, a project which unfortunately never got beyond the "inspiration" stage.

"However, I did collect nearly 100 species of adult spiders which are now at the U. S. National Museum and are about to be identified if they can find persons interested in the project. My one outstanding experience with spiders was observing the tremendous araneid social spiders which have served as the basis of lace-weaving done by artisans of one town in particular. Most patterns of the lace have only a stylized resemblance to orb-webs but the actual specimens, which were just maturing when I left in mid-December are a fantastic phenomenon. In one spot in a suburb of Asuncion I estimated well over 500 specimens just at dusk beginning to move out on foundation lines from the previous night. They often spun webs that eventually made a complete sheet of dozens of orb-webs strung from telegraph and electric-light lines from poles to trees as well and most in one plane making a lacy sheet that few insects got through probably. It was a memorable sight and one that YAEL LUBIN and other behaviorists should find most fascinating to work with."

We hadn't heard for a while from MATT GREENSTONE, who writes as follows from the University of Florida:

"I have given up the nerve-wracking life of teaching in temporary University posts for a significantly more restful, slightly less temporary pure research position. I am working for an insect pathologist who is trying to work out the mode of transmission of some microsporidia (they have their own phylum of obligate intracellular protozoa) which are mosquito pathogens. How does an old spiderologist fit into all of this? It's the immunology connection! I'm going to be making antibodies, using state-of-the-art methods (hybridomas, which are hybrid lymphocyte clones), to assay mosquitos and potential intermediate hosts for microsporidia antigens. For the time being I am not beginning any new spider work, although I do have some work on ballooning and web spider resource-partitioning to write up. Eventually I hope to get back into predation, perhaps in a crop system, which will certainly involve me with spiders, as well as insect predators (Peucetia viridans appears to be critical here in soy beans). Anyway you cannot live in Gainesville without working on spiders, since it is a veritable hotbed of spiderology, probably the biggest concentration in North America (Anderson, Edwards, Resikind, Whitcomb, & Greenstone...)."

Your editor (BILL SHEAR) enjoyed his sabbatical semester this fall, but found it as packed with activities as any other comparable period. I guess the fact that the activities were different ones made the time enjoyable if not exactly restful. In August, NOELLE PRINCE (a dancer-choreographer in Cleveland, Ohio) and I were married near Mt. Chocorua in New Hampshire, returning there in September to house-sit for Noelle's mother during her vacation. Then in October, it was a week in New York at the American Museum, talking arachnids and cladistics with NORM PLATNICK AND MOHAMMED SHADAB, while beginning sorting some of the Museum's huge opilionid collection. November and early December were also spent travelling, first to San Francisco to study the collections of the California Academy of Sciences (and some pleasant time with a helpful VINCENT LEE), then on to Honolulu and the Bishop Museum, whose well-curated collection of spiders and other arachnids is presided over by acarologist JOANN TENORIO, and should be better known, since it has excellent coverage of the South Pacific in several groups.

No doubt the most important experience of the fall was the opportunity to spend most of November at the Wau Ecology Institute in Wau, Papua New Guinea. This provided an opportunity to learn from YAEL LUBIN firsthand about the species of spiders whose behavior she and MIKE ROBINSON have recently studied (see ROBINSON AND LUBIN under "New Research Papers"). But of course the experience of being immersed in an utterly different biota was incredibly refreshing and interesting.

YAEL LUBIN has left Wau and the Smithsonian to take a post at the Charles Darwin Research Station in the Galápagos, but she will be spending part of each year in Gainesville at the University of Florida.

STILL MORE ON ARANEISM

Information continues to come in on Araneism. GARY MULLEN (Department of Entomology, Auburn University, Auburn, AL 36830) sent a clipping from the Birmingham (AL) News of November 23, 1980, which we quote in part below:

"It was about 11 o'clock one night in October 1978, and Marty Murray was standing at a counter in the shop of a Birmingham electrical repair firm. He was going through the day's time cards, adding up the hours of the workers. He felt a tiny pain on the inside of his right wrist, and looked down to see what it was. A brown spider, about the size of a quarter and with violin markings on his back, was clinging to his wrist. Murray slapped at the spider and knocked him off. "The spider went his way and I went mine," he remembered."

"At midnight, Murray went on home. The spider bite, "really something like a mosquito bite," began to itch. The next day, Murray came to work and told his fellow workers jokingly that he had been bitten by a spider. But it was no joke. Streaks of red flared out from the bite, and his wrist puffed up to almost twice its normal size. He had been bitten by a brown recluse spider, and its poison was busily killing the flesh in his right wrist."

"A nightmare began. Murray went to a hospital, where they gave him a tetanus shot and put his arm in a plaster cast, he said. Then he went to a clinic, and they gave him a cortisone shot. By now, the arm was "hurting so bad I couldn't stand for air to touch it. My arm, from wrist to elbow, was hard as a desk top." The doctors opened up the wrist, and the fluid came out. At one point, there was a hole in his wrist. Looking down into the hole, he said he could see the bone and the tendons working back and forth. Doctors took some skin from his leg, to fill in the hole. He lost weight, 40 pounds in three weeks, from 180 to 138. He couldn't eat anything, and the doctor gave him glucose. Then one day he felt a pain in his abdomen, and a neighbor rushed him to the hospital. He was bleeding internally and his pancreas had quit producing insulin."

After 16 months of hospitalization, Mr. Murray, 34, has been declared totally disabled because of complete paralysis of his right arm. Could the severe systemic effects have been due to Loxoceles venom?

RESEARCH REQUESTS

MARK S. HARVEY (Department of Zoology, Monash University, Clayton, Victoria, Australia 3168) writes that he is revising the Australo-New Zealand pseudoscorpion genus Synsphronus Chamberlin. "...I have been unable to trace some of the type specimens. Chamberlin mentioned that some types of S. (S.) mimetus Chamberlin and S. (Maorigarypus) mimulus Chamberlin 'were to be deposited in the United Stated National Museum and in the Museum of the University of Utah.' I have contacted both of these institutions and apparently they do not possess the specimens in their collections. The holotypes and some paratypes have been found in J. C. Chamberlin's collection (Pacific University, Oregon) and the Museum of Comparative Zoology. If anybody knows the whereabouts to the other specimens (JC-619.020011-12, 15-40 and JC-619.03909-12, 15-28), I would be most grateful if they would notify me."

VINCE ROTH is "...interested in obtaining on loan Homalonychus from Inyo and eastern Imperial Counties in California and from the state of Nevada where problem populations occur as well as Arizona and Sonora. Recent studies show H. theologus Chamberlin occurs in Baja California north to San Bernardino County with the exception of eastern Imperial County. H. selenopoides Marx (H. positivus Chamb.) occurs in Sonora and Arizona, Southern Nevada, Inyo and Imperial Counties, California." Vince is at the Southwestern Research Station, Portal, Arizona.

A revision of the American diplurid spider genus Euagrus is being begun by FRED COYLE (Biology Department, Western Carolina University, Cullowhee, NC 28723). He would like to borrow any specimens held in private collections.

A note from D. W. BARR states that the collections of the Royal Ontario Museum will be unavailable for loans until July 1st of this year, due to a move to improved facilities.

The following interesting note on his research on spider silk comes from ROBERT W. WORK, Department of Textile Chemistry, School of Textiles, North Carolina State University, Box 5666, Raleight, NC 27650:

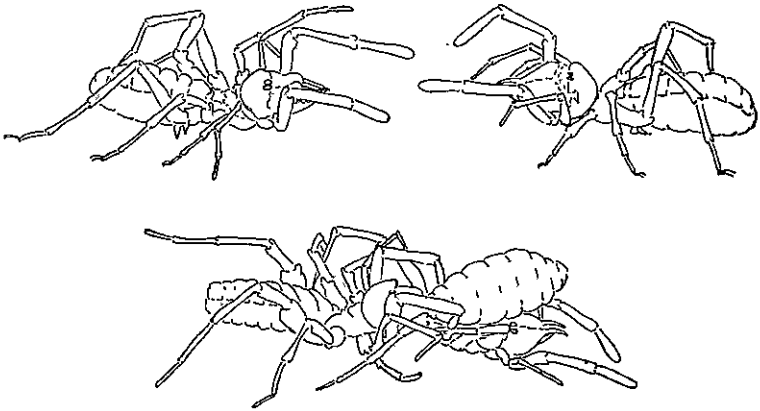
"For the last few years I have been studying the major ampullate silk, and to a lesser degree other products, of orb-web-building spiders. The major ampullate silk of all species that have been available to me supercontract in water. My main interest is the macromolecular basis of this totally unexpected phenomenon. But having discovered it, my thoughts naturally go in the direction of questioning what function it performs relative to the web. It follows that perhaps it is specific to webs subjected to rain and dew. In turn, what about orb webs of spiders (if there are any) of desert habitat?"

"I would very much like to get in touch with any member of the Society who has an interest in such spiders. In addition, samples of their major ampullate silk would be most welcome. Securing same from webs or trailing silk is no great problem (my students and I have taken well over a thousand)."

"Samples of supportive elements outside of the orb may be secured directly. This is done by holding a microscope slide on one side of the selected section and fastening it to the slide by means of tabs (about 1/8" x 1/8") of self-adhesive tape, followed by cutting it free of the web. (Four hands are better than two)."

"If the spider is captured it can be made to deposit trailing silk directly onto microscope slides. To do this, two slides are placed end to end on a smooth surface and fastened to it by means of self-adhesive tape. The spider is then placed adjacent to the end of one of the slides and covered with an inverted beaker somewhat larger than the spider's leg span. Generally speaking the spider will cement the trailing silk to the smooth surface by means of a piriform "disk", with the typical abdomen wagging, which is easily observable. With this done, the beaker is raised slightly and by means of it, the spider is gently urged to traverse the slides lengthwise, leaving the trailing silk as it goes. The length so obtained is then fastened to the slides by means of tiny tabs of self-adhesive tape. If a first length is placed about 1/4" from the lengthwise edges of the slides, after being fastened down, there is room for a second pass of the spider under beaker in the opposite direction."

"Samples on microscope slides can be stored and shipped safely in a plastic slide box. In such a box, the section of sample between the holding tabs of self-adhesive tape can touch nothing but the slide on which it is suspended."



KNOXVILLE MEETING NEWS

SUSAN REICHERT has sent out a second circular to registrants for the 1981 American Arachnological Society International Meeting. The conclave will be held August 5th through 9th at the University of Tennessee in Knoxville. Poster and paper sessions, as well as films and a symposium on "Webs and Behavior" will be features of the meeting. On August 8th and 9th, field trips have been scheduled to the Smoky Mountain National Park, Fall Creek Falls State Park, and the Norris Museum of Appalachia, a restored pioneer settlement.

Knoxville is hot and dry in August. Daytime temperatures will be in the 90's, but evenings are cool because of the city's proximity to the mountains.

The southern Appalachian Mountains are the most beautiful and most biologically interesting in the eastern part of North America. Never disrupted by glaciation, the forests preserved there are ancient and complex, with more tree species being found in the Smoky Mountain National Park than in all of Europe. In addition, the relatively great range of altitudes provides a remarkable diversity of habitats, from southern pine forests to "Canadian" associations of spruce and fir on the mountain-tops. This means that many relict species of arachnids normally found far to the north can be collected there, as well as many unusual endemic species. Fall Creek Falls State Park preserves a magnificent gorge with waterfalls cut into the edge of the Cumberland Plateau; here we find a mixture of Appalachian and western North American forms.

Registration will open Tuesday evening, August 4th, in Humes Hall at the University from 7:00-10:00 P.M., and on Wednesday morning, August 5th, from 8:00-10:00 A.M. If you need information on the meetings, write SUSAN REICHERT at the Department of Zoology, University of Tennessee, Knoxville, TN 37916.

NEW RESEARCH ARTICLES

VINCE ROTH has drawn our attention to the publication of a new book, "Common Intertidal Invertebrates of the Gulf of California," by RICHARD C. BRUSCA. Vince contributed a chapter on intertidal spiders and other arachnids (see LEE, 1979, "New Research Papers," this issue). The book is profusely illustrated and can be ordered for $26.95 (+ $1.00 postage) from the University of Arizona Press, Box 3398, Tucson, AZ 85722.

PETER GABBUTT writes from Manchester, England, that PAOLO BRIGNOLI's "Catalogue of Araneae," an update of K. F. ROEWER's "Katalog der Araneae," will be published in late 1981 or early 1982 by the Manchester University Press, with support from the Royal Society and substantial funding from the British Arachnological Society. This volume will be indispensable for research spider taxonomy, and should be in the library of every arachnologist. More later on how and where to order.

The following titles have reached the notice of your editor since the last such list was published here. Reprints of the articles listed below may be requested from the authors; their addresses are to be found in the C.I.D.A. list.

Anderson, J. F., and K. N. Prestwich.

1980. Scaling of subunit structures in the book lungs of spiders. J. Morph. 165:167-174.

Bourne, J. D.

1980a. New armored spiders of the family Tetrablemmidae from New Ireland and Northern India. Rev. suisse Zool. 87:301-317.

1980b. Revision of Thorell's type species of the family Pacullidae in the Museo Civico Storia Naturale di Genova. Ann. Mus. Civ. Stor. Nat. Genova 83:249-260.

Brady, A. R.

1979. Nearctic species of the wolf spider genus Trochosa. Psyche. 86:167-212.

Brignoli, P. M.

1978a. Ragni d'Italia XXXII. Specie cavernicole di Sicilia. Animalia 5:273-286.

1978b. Considérations zoogéographiques sur les araignées cavericoles de Grèce. Biol. Gallo-Hellen. 8:223-236.

1979a. Ragni di Grecia XI. Specie nuove o interessanti, cavernicole ed epigee. Rev. suisse Zool. 86:223-236.

1979b. Ragni d'Italia XXIX. Dysderidae nuovi o interessanti. Boll. soc. ent. Ital. 111:17-26.

1979c. Un nuova Theridiosoma del Kenya. Rev. Suisse Zool. 86:485-489.

1979d. On some cave spiders from Guatemala and the United States. Rev. suisse Zool. 86:435-443.

1979e. Sur quelques Dysderidae de France d'Espagne et de Tunisie. Vie Milieu 28-29:111-116.

1979f. Sur quelques araignées cavericoles des Alpes Maritimes Francaises et Italiennes. Bull. Soc. d'Hist. nat. Toulouse 115:1-7.

1979g. Une nouvelle Theonoe de Sumatra. Bull. Mus. natn. Hist. nat. 4e set., 1:1075-1078.

1979h. Contribution à la connaissance des Uloboridae Paléarctiques. Rev. Arachn. 2:275-282.

1979i. Ragni delle Filippine III. Su alcuni Ocyroceratidae. Rev. suisse Zool. 86:595-604.

1979j. Ragni d'Italia XXX. Nuovi dati corologici ed ecologici su alcuni Araneidae. Frag. entomol. 15:17-41.

1979k. Sur la position taxonomique du gener Mecysmauchenius Simon, 1884. C. R. Ve Colloque Arach. IX, Barcelone, pp. 31-39.

1979l. On some African Oecobius and Zimiris. Zool. Mededel. 54:123-126.

1979m. Reo latro nov. gen., nov. sp. du Kenya. Rev. Zool. afr. 93:919-928.

1979n. Ragni di Brasile V. Due nuovi generi e quattro nuove specie dello stato di Santa Catarina. Rev. suisse Zool. 86:913-924.

1980a. Two new haplogynae from Thailand. Steenstrupia 6: 5-8.

1980b. Secondo contributo alla conoscenza dei ragni cavericoli della Jugoslavia. Rev. suisse Zool. 87:183-192.

1980c. Ragni d'Italia XXXI. Specie cavernicole nuove o interessanti. Quad. Mus. Speleol. "V. Rivera" l'Aquila 5:3-48.

1980d. Sur Usofilia pecki, n. sp., araignée cavericole de la Nouvelle-Calèdonie. Rev. suisse Zool. 87:605-609.

1980e. Sur deux Ochyroceratidae du Kenya. Rev. Zool. afr. 94:295-298.

1980f. Araneae Telemidae et Ochyroceratidae. Rev. Zool. afr. 94:380-386.

1980g. Ragni d'Italia XXXIII. Il genere Robertus. Frag. Entomolog. 15:259-265.

1980h. On a few Mysmenidae from the Oriental and Australian regions. Rev. suisse Zool. 86:727-738.

1980i. Sur le genre Leptopholcus Simon, 1893. Rev. Zool. afr. 94:649-655.

1980j. Some new or interesting eastern Mediterranean Dysideridae and Agelenidae. Ann. zool. Polska Akad. 35:75-82.

Chemini, C.

1979. Alcuni reperti di opilioni in grotte del Brescano. Nat. Brescana 16:52-56.

1980a. Phalangids by pitfall trapping from Favogna, Province of Bolzano, northern Italy. Stud. Trent. Sci. Nat. (Acta Biol.) 56:61-69.

1980b. Alcui reperti di Opilioni dalle Alpe Italiane. Ibid., 56:71-79.

Cherix, D., and J. D. Bourne.

1980. A field study on a super-colony of the red wood ant Formica lugubris Zett. in relation to other predatory arthropods (Spiders, Harvestmen and Ants). Rev. suisse Zool. 87:955-973.

Cokendolpher, J. C.

1980a. Replacement name for Mesosoma Weed, 1892, with a revision of the genus. Occ. Pap. Mus. Texas Tech Univ., no. 66: 1-19.

1980b. Comments on Opiliones described from western North America by Schenckel. Ent. News 91:133-135.

Cokendolpher, J. C., and F. D. Bryce.

1980. Arachnids (excluding Acarina and Pseudoscorpionida) of the Wichita Mountains Wildlife Refuge, Oklahoma. Occ. Pap. Mus. Texas Tech Univ., no. 67:1-25.

Cokendolpher, J. C., and N. Horner.

1980. The female of Xysticus robinsoni. Southwest Nat. 25:103-128.

Cutler, B.

1980a. Variation in the embolus of Metaphidippus insignis (Banks). J. New York. Entomol. Soc. 88:270-274.

1980b. Ant predation by Habrocestum pulex (Hentz). Zool. Anz. 204:97-101.

1980c. Arthropod cuticle features and arthropod monophyly. Experientia 36:953.

Davies, V. T.

1980. Two large Australian orb-weaving spiders, Eriophora transmarina and E. biapicata. Mem. Qd. Mus. 20: 125-133.

Davies, V. T., and R. J. Raven

1980. Megadolomedes, nov. gen. (Araneae: Pisauridae) with a description of the male of the type-species, Dolomedes australianus Koch 1865. Mem. Qd. Mus. 20:135-141.

Deeleman-Reinhold, C. L.

1980. Contribution to the knowledge of the southeast Asian spiders of the families Pacullidae and Tetrablemmidae. Zool. Mededel. 56:65-82.

Dondale, C. D., and J. H. Redner.

1979. Revision of the wolf-spider genus Alopecosa Simon in North America. Can. Etn. 111:1033-1055.

Dumitrescu, D.

1979. Bibliographia Arachnologica Romanica (I). Trav. Mus. d'Hist. nat. "Grigore Antipa" 20:43-84.

Eberhard, W. G.

1977. 'Rectangular orb' webs of Synotaxus. J. nat. Hist. 11:501-507.

1979. Rates of egg production by tropical spiders in the field. Biotrop. 11:292-300.

1980a. Horned beetles. Sci. Amer. 242:166-181.

1980b. Argyrodes attenuatus (Theridiidae): a web that is not a snare. Psyche 86:407-413.

1980c. Spider and fly play cat and mouse. Nat. Hist. 55: 57-61.

Forster, R. R.

1975. The spiders and harvestmen, from BIOGEOGRAPHY AND ECOLOGY IN NEW ZEALAND, G. Kuschel, Ed. W. Junk, The Hague. pp. 493-505.

Forster, R. R., and M. R. Gray

1979. Progradungula, a new cribellate genus of the spider family Gradungulidae. Aust. J. Zool. 27:1051-1071.

Fowler, H. G., and H. W. Levi

1979. A new quasisocial Anelosimus spider from Paraguay. Psyche 86:11-18.

Francke, O. F., and W. D. Sissom.

1980. Scorpions from the Virgin Islands. Occ. Pap. Mus. Texas Tech Univ. no. 65, pp. 1-19.

Francke, O. F., and M. E. Soleglad.

1980. Two new Hadruroides Pocock from Peru. Occ. Pap. Mus. Texas Tech Univ., no. 69, pp. 1-13.

Greenstone, M. H.

1979. Spider feeding behavior optimises dietary essential amino acid composition. Nature 282:501-503.

1980. Contiguous allotropy of Pardosa ramulosa and P. tuoba in the San Francisco Bay region, and its implications for patterns of resource partitioning in the genus. Amer. Midl. Nat. 104:305-311.

Greenstone, M. H., and A. F. Bennett.

1980. Foraging strategy and metabolic rate in spiders. Ecol. 61:1255-1259.

Hickman, V. V.

1979. Some Tasmanian spiders of the families Oonopidae, Anapidae and Mysmenidae. Pap. Proc. Roy. Soc. Tasmania 113:53-79.

Jackson, R. R.

1979. Predatory behavior of the social spider Mallos gregalis: Is it cooperative? Insectes Soc. 26: 300-312.

Lee, V. F.

1979. The maritime Pseudoscorpions of Baja California, México. Occ. Pap. Cal. Acad. Sci., no. 131, pp. 1-38.

LeSar, C. D., and J. D. Unizicker

1978. Soybean spiders: species composition, population densities, and vertical distribution. Ill. Nat. Hist. Surv. (no vol. indicated): 3-14.

Levi, H. W.

1980. Two new spiders of the genera Theridion and Achaearanea from North America. Trans. Amer. Micros. Soc. 99:334-337.

Levy, G., and P. Amitai

1979. The spider genus Crustulina in Israel. Israel J. Zool. 28:114-130.

Lopez, A., M. Emerit and M. Rambla

1980. Contribution a l'étude de Sabacon paradoxum Simon 1879. Stations nouvelles, peculiarities electro-microscopiques du prosoma et de ses appendices. C. R. Ve Colloque Arach. 9:147-158.

Muchmore, W. D.

1976a. New cavernicolous species of Kleptochthonius, and recognition of a new species group within the genus. Ent. News 87: 211-217.

1976b. Aphrastochthonius pachysetus, a new cavericolous species from New Mexico (Pseudoscorpionida, Chthoniidae). Proc. Biol. Soc. Washington 89: 361-364.

1976c. Pseudoscorpions from Florida and the Caribbean area. 5. Americhernes, a new genus based upon Chelifer oblongus Say. Fla. Entomol. 59:151-163.

1976d. Pseudoscorpions from Florida and the Caribbean area. 6. Caribochthonius, a new genus with species from St. John and Belize. Fla. Entomol. 59:361-367.

1977. Preliminary list of the pseudoscorpions of the Yucatan peninsula and adjacent regions, with descriptions of some new species. Assoc. Mex. Cave Stud. Bull. 6:63-78.

1979a. The cavernicolous fauna of Hawaiian lava tubes. 11. A troglobitic pseudoscorpion. Pacific Insects 20: 187-190.

1979b. Pseudoscorpions from Florida and the Caribbean area. 7. Floridian diplosphyronids. Fla. Entomol. 62: 194-213.

1979c. Pseudoscorpions from Florida and the Caribbean area. 8. A new species of Bituberochernes from the Virgin Islands. Fla. Entomol. 62:313-316.

1979d. Pseudoscorpions from Florida and the Caribbean area. 9. Typhloroncus, and new genus from the Virgin Islands. Fla. Entomol. 62:317-320.

1980. Pseudoscorpions from Florida and the Caribbean area. 10. New Mexobisium species from Cuba. Fla. Entomol. 63:123-127.

Peck, W. B., and W. H. Whitcomb

1978. The phenology and populations of ground surface, cursorial spiders in a forest and a pasture in the South Central United States. Symp. zool. Soc. London 42:131-138.

Platnick, N. I. and M. U. Shadab

1980a. A revision of the spider genus Cesonia. Bull. Amer. Mus. Nat. Hist. 1965:337-385.

1980b. A revision of the North American spider genera Nodocion, Litopyllus, and Synaphosus. Amer. Mus. Nov., no. 2691:1-26.

Rambla, M.

1979a. Sur les Nemastomatidae (Arachnida, opilions). IV. Redescription de Nemastoma argenteolunulatum, premier Nemastomatidae signalé dans les îles Baléares (Minorque). Rev. Arachn. 2:259-271.

1979b. Les Nemastomatidae de la peninsule Iberique. V. Nemastoma scabriculum Simon 1879 et N. hankiewiczii Kulczynski 1909. C. R. Vè Colloque d'Arachn. IX: 195-202.

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1979. Systematics of the mygalomorph spider genus Masteria. Aust. J. Zool. 27:623-636.

Roach, B., T. Eisner and J. Meinwald.

1980. Defensive substances of opilionids. J. Chem. Ecol. 6:511-516.

Robinson, M. H., and Y. D. Lubin

1979a. Specialist and generalists: The ecology and behavior of some web-building spiders from Papua New Guinea. I. Herrenia ornatissima, Argiope ocyaloides and Arachnura melanura. Pacific Insects 21:97-132.

1979b. Specialists and generalists: The ecology and behav- of some web-building spiders from Papua New Guinea. II. Psechrus argentatus and Fecenia sp. Pacific Insects 21:133-164.

Rovner, J. S.

1977. Spider behavior. from INTERNATIONAL ENCYCLOPEDIA OF PSYCHIATRY, PSYCHOLOGY, PSYCHOANALYSIS AND NEUROLOGY. Asculapius, New York. pp. 419-423.

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