NEWSLETTER

of the

MICHIGAN ENTOMOLOGICAL SOCIETY

Volume 32, Number 2 May 1, 1987

Husband Treks to Congress of Acarology in India

by
Robert W. Husband

The 7th International Congress of Acarology was held in Bangalore, India, August 3 to August 9, 1986. Outstanding mite and tick specialists from around the world attended, including MES member from Canada, John Convoy; Ed Baker, National Museum of Natural History; Larry Arlians of Wright State University; Lee Goff of University of Hawaii; and more than a dozen other North American acarologists. Lee Goff's paper on the use of succession of mite fauna under dead animals in application to forensic medicine - determining time of death - was particularly interesting. Larry Arlian's paper on Sarcoptes sp., mange mites, was also good. As one might expect, there is a high priority for research on mites of agricultural and medical importance in third world countries. Stored product mites, plant mites, tropical acarology, chemical and biological control, and mites and ticks of medical and veterinary importance received a great deal of attention. Indian, Kenyan, and Japanese scientists as well as scientists from other countries also presented reports of detailed studies of soil mites and life cycle work on ticks. There were a number of surveys presented. As one Indian scientist (Putatunda) stated, "In third world countries, we are still at the stage of attempting to determine what mites and ticks we have before we are ready to do a lot of behavioral, ecological, physiological, anatomical or other types of studies." It did seem that most of the papers presented on water mites, genetics, anatomy and reproduction were given by European or North American scientists - including John Conroy's work on the behavior of Atractides burtoni in drift samples from Saskatchewan, Desch's paper on the digestive tract of Demodex, Krantz's study on anatomy of Macrocheles and Fashing's work on mouthparts and feeding behavior of mites of tree holes.

The Congress included excursions from Bangalore to Hindu temples, silk factories and palaces. Dinner was served at a palace near Mysore where John F. Kennedy and family stayed when they visited India in the early 1960's. Some acarologists visited Bombay, New Delhi, Agra (Taj Mahal), Calcutta and other parts of this fascinating country before or after the Congress.

Pat and I visited Paris, Zurich and Florence with stops at Nice/Monaco along the way. The Museum of Natural History in Paris and Berlese Institute in Florence have outstanding collections of mites and insects, and scientists there are very helpful and courteous to visiting specialists. We enjoyed the gardens, cultural attractions (Louvre and several collections in Florence) and the hospitality of everyone we met. We got used to the hard bread breakfasts - actually developing a like for the bread and pastries. We recommend them. The air travel time to India is long but the facilities are comfortable and the service is excellent. We were impressed by the industriousness of Indians and honesty of the clerks in government hotels particularly. We stayed at the Hotel Ashok Yatri Niwas in New Delhi - where mostly Indians stay, visited museums in Bangalore where mostly Indians were (a lot of school-aged kids) and we walked a lot on our own. We enjoyed getting out like this and had no problems - except for overzealous street vendors in New Delhi, maybe. It wasn't that bad because we are good at saying no, nein, and nyet fairly convincingly.

The NEWSLETTER of the Michigan Entomological Society is published as four members yearly, at irregular intervals. Please send all notes, news, new insect records, research request, notices, season summaries, membership inquiries, etc. to the Executive Secretary, Michigan Entomological Society, Dept. of Entomology, Michigan State University, East Lansing, Michigan 48824.

Officers of M.E.S.

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Notices

(Notices will be run for a year or 4 numbers of the Newsletter unless notified to drop them. Members desiring longer runs should notify newsletter editor, L. F. Wilson, Dept. of Forestry, Michigan State University, 48824)

WANTED: Studies on the Comparative Ethology of Digger Wasps of the Genus Bembix by Evans; Beetles of the Pacific Northwest by Hatch (5 vol.); Biology of the Leaf Miners by Hering; The Ecology of Plant Galls by Mani. Write stating condition and price to John E. Holzbach, 229 Maywood Drive, Youngstown, Ohio 44512. (long run).

WANTED: Any information regarding Sesiids (clear-winged moths) collected in Michigan. The data of special interest are species, county and date of capture. I would be glad to identify any questionable or unknown specimens. This information is being compiled for an upcoming publication. Please send data to: William Taft, Dept. of Horticulture, Michigan State Univ., East Lansing, MI 48824.

FOR SALE: Cornell Drawers, unit pinning trays, blacklights, head lamp, about 50 books on lepidoptera. Prices and book list upon request. Write or call Glenn Belyea, 8051 Clark Road, Bath, MI 48808. (517) 641-4224.

FOR SALE: Philippine butterflies and beetles collected at your request from the Mt. Kanla-on region. Write to Jose L. Benebildo, Mambucal, Murcias, Negro Occidental, Republic of Philippines 6016. (long run).

FOR SALE: Insect pins; std. black, elephant, stainless steel, minutens and label pins. Sizes 000 thru 7 available. For complete list write to Ianni Butterfly Enterprises, P.O. Box 81171, Cleveland, Ohio 44181. (216) 888-9763.

WANTED: Information and data on butterflies from all Canadian provinces and territories. Needed in the preparation of a detailed list of distributional records of Canada, complete with maps. Contact Ross A. Layberry, 1409-2220 Halifax Dr., Ottawa, Ontario, CANADA K1G 2W7.

WANTED: Information, data, and/or lepidopteral specimens from any of the following elevated and exposed areas of: Huron Mtns. (1400-1600 ft.), Isle Royale N.P. (1400 ft.), Keweenaw Pen. (1200-1400 ft.), Porcupine Mtns. (1800 ft.). Especially interested to learn if anyone plans to study/collect in any of these areas in the future. We will be happy to identify lepidoptera from these areas. Contact M. C. Nielsen, 3415 Overlea Dr., Lansing, MI 48917. (517) 321-2192.

FOR SALE: Huckett, H.C., "..Muscidae of N. Canada, Alaska and Greenland.." (1965); Vockeroth, J.R., "Rev. of ...Syrphini (Diptera..)" (1969); Peterson, B.V. "Prosimulium of Canada and Alaska (Diptera)", (1970); Cantall, I.J. "Ecology of Orthoptera and Dermaptera of George Reserve, MI", (1943); Smetana, A. "Rev. of Tribe Quediini of N.A. (Coleoptera..)", (1971); Cambell, J.M. "Rev. of ..Tachinus (Coleoptera..) of N. and Cent. A.", (1973); Eberhard, M.J. "The Social Biology of Polistine Wasps", (1969); Schmid, F. "Le Genre Rhyacophila...(Trichoptera)", (1969). Contact M. C. Nielsen, 3415 Overlea Dr., Lansing, MI 48917. (517) 321-2192.

NOTICE: I am interested in raising giant silk moths (Cecropia, Polyphemus, Luna, Promethea) native to Michigan, I have difficulty finding cocoons, other than those of the Cecropia. If you know of any sources of giant silk moth cocoons, please contact Gordon Lonie, 40555 Utica Road, Sterling Heights, MI 48078.

FOR SALE: 32 page Y.E.S. International Entomology Resource Guide; 130 companies/individuals offering entomology equipment, supplies, services, preserved specimens, live arthropods, books, audio-visuals educational materials, and gift and novelty items. US $3.00 to Y.E.S. International Headquarters, Dept. of Entomology, Michigan State Univ., East Lansing, MI 48824-1115 USA.

RESEARCH REQUEST: I wish to invite one of your members, an entomologist, (or culture and breeding of our birdwing butterflies, already on the brink of extinction. The problem is how to know their food plants and their habitation in the wild. Would be willing to sell or exchange my various collections of insects in order to continue my conservation work for butterflies, breeding and culture. Julio M. Mirafuente, General Manager, Star Biological Supplies, BOAC, Marinduque, Philippine Island.

WANTED: Data on Michigan butterflies for use in a new publication on the butterflies of Michigan. Doubtful specimens can be forwarded for determination or confirmation. Especially interested in Lycaenidae and Hesperiidae records. Contact M. C. Nielsen, 3415 Overlea Dr., Lansing, MI 48917. (517) 321-2195.

WANTED: Viable pupae of Papilio (Heraclides) cresphontes for establishing a breeding colony. Please advise of quantity available and price. Ray W. Bracher, 17145 Cherokee Drive, South Bend, Indiana 46635. (219) 272-7970.

FOR SALE: Lepidoptera bait traps, light traps, and rearing sleeves. For more information and prices, contact Leroy C. Koehn, 16225 Huntley Rd., Huntsburg, Ohio 44046.

WANTED: The following books and publications are desired: Butterflies of the West Coast by W.G. Wright, On the Sphingidea of Peru by A.M. Moss, The Cranbidea of North America by C.H. Fernald, Butterflies of Cuba by D. Marston Bates, Monograph of the Genus Erebia by B.C. Warren, The Lepidoptera of Nova Scotia by D.C. Ferguson, and The Butterflies of the Australian Region by B. D'Abrera. State condition and price, contact Leroy C. Koehn, 16225 Huntley Rd., Huntsburg, Ohio 44046.

FOR SALE: One copy in good condition of: The Bombycine Moths of North America by A.S. Packard, Part II Vol IX, Best offer, contact Leroy C. Koehn, 16225 Huntley Rd., Huntsburg, Ohio 44046.

Annual Meeting, Collect in U.P.

By this time, you should know that the Annual Meeting of the Michigan Entomological Society will be held on 5 June at the Ford Forestry Center at Alberta (near L'Anse) in Baraga County, MI (See February Newsletter for details and Registration Form). Plan now to attend and spend the weekend, or longer, to collect in the Upper Peninsula, especially in this attractive area. The location is amidst a large area of northern hardwoods, with other diverse collecting habitat in close proximity, i.e., jack pine plains, sphagnum-heath bogs. For the lepidopterist, I highly recommend that you consider, as a further attraction, the many opportunities to collect some unique boreal moths and butterflies nearby. To assist with your collecting plans, I offer the following possibilities:

MOTHS: Hyalophora columbia--Tamarack bogs at UV; males can be attracted to live H. cecropia female; Sphinx gordius (poecila), luscitiosa--Jack pine plains at UV; Hemaris gracilis--Nectars at many wild flowers and clumps of wild lilac; Zale sp.--Several pine-feeding species can be collected in bait traps, or at UV, in jack pine plains; Cerma cora, Acronicta quadrata, Lacanobia nevadae, tacoma--Open areas in mixed pine-hardwoods, near bogs; Anarta cordigera, Heliothis borealis--Nectars at various heaths in sphagnum-heath bogs.

BUTTERFLIES: Carterocephalus palaemon--Edge of bogs and in small openings near wet areas; Pieris virginiensis--Northern hardwoods near CC; Incisalia eryphon--Near white pine, nectaring on heaths and other flowers, and on moist sunny trails; Boloria eunomia dawsoni, Frigga spp.--Sphagnum-heath bogs; Oeneis jutta ascerta, Chryxus strigulosa--The former in black spruce bogs in small peripheral openings (it flies in odd-numbered years), and the latter in dry grassy openings in jack pine plains.

Please keep in mind that these are only a small number of potential species that can be collected at this time in the vicinity of the Center (assuming good weather, etc.). And there are many interesting places to visit for the entire family, so why not plan a family vacation around this weekend and enjoy this great northern country!

M. C. Nielsen

Cricket Paradise

You can't help but stay jolly,
With a cricket colony.
I went out in a field to hunt.
Catching some crickets that I did want.
Threw 'em in an old fish tank,
And God I surely did thank;
For fell in love with their spirited ways,
The way they hop about and spend their days.
They must be warm if they're to breed,
So a lightbulb's there indeed;
And the young ones they are so darn cute,
Feeding them grain and pieces of fruit.
Even my cat's life's enriched,
Wanting a cricket--she's hitched.
But most of all the chirpers do sing,
Bringing harmony to everything.
So I say take my advice,
Make your own cricket paradise!

Peter Lisk

Swallowtail Book

If any member has not seen the new book Threatened Swallowtail Butterflies of the World, by N. Mark Collins and Michael G. Morris, they are missing some of the best information that has been published in a long time. The book is one of the IUCN Red Data Books. IUCN is International Union for Conservation of Nature and Natural Resources. It can be ordered from UNIPUB, 10033-F King Highway, Lanham, MD 20706-4391.

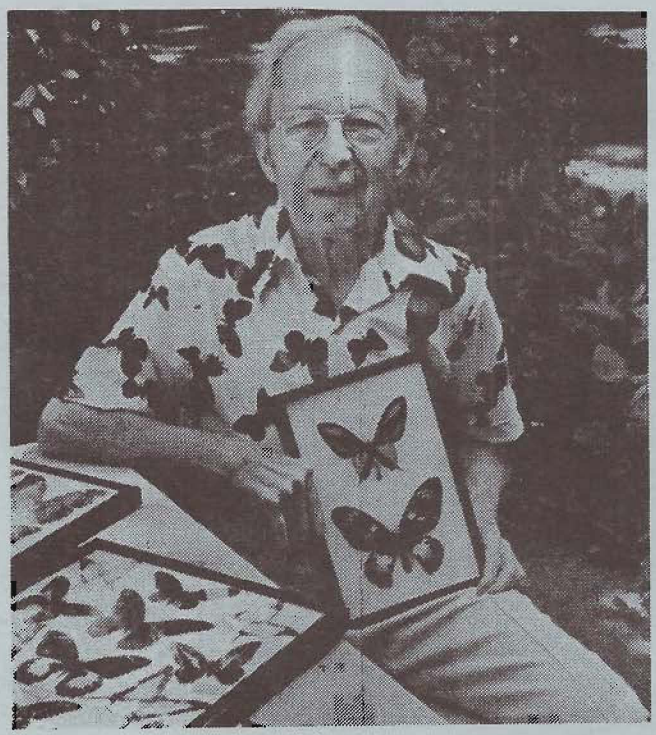
Butterflies Keep

Ray Bracher Young

Ray Bracher, long time lepidopterist and member of MES, points to his head and says, "You're only old in the mind."

His mind stays active with a 59-year-old hobby that has taken him to remote parts of the world.

Ray Bracher is 78, a retired national credit manager of Associates Corporation of North America and an avid butterfly collector and nature photographer. He has a collection of more than 10,000 of the largest, most colorful butterflies of the world.



Wearing a shirt decorated with butterflies, the Ohio native proudly displays arrays of rare butterflies and moths, many of which were difficult to catch.

"We were really roughing it in some of the jungles out there," Bracher said of collecting excursions ranging from Papua, New Guinea, to Tanzania and Madagascar, and from Canada to the rain forests of Peru.

"You had only a gun, a camera, a butterfly net and a guide."

His wife, Frances Bracher, nods and expresses relief that her husband of 44 years has stopped participating in the collecting expeditions because of his age and some medical problems.

"I'd be afraid he might not come back," she said. "His reflexes are not as quick as they used to be."

Ray began his hobby in 1927 and has a color slide show of his collection, a favorite presentation of butterfly enthusiasts and local non-profit organizations.

Ray moved from Cleveland to South Bend in 1960. He belongs to the Lepidopterists' Society, an international organization of about 3,000 butterfly collectors, the International Association of Insect Migration Research and the Michigan Entomological Society.

He enjoys gardening and is a great fan of nature. An amateur photographer for many years, he created a color slide show of the hundreds of wildflowers that bloom in his back yard.

In his spare time at home he studies in a library stocked with nature books, many of which are now out of print.

(Modified from an article by Ruthie Mae Darling, The South Bend Tribune, June 22, 1986.)

Address Changes

BURTON, JOHN J.S., Aramco Box 9070, Dhahran 31311, Saudi Arabia.

CHILDRESS, FRED, 324 Glenmont Dr., Solana Beach, CA 92075-1309.

EIBER, THOMAS G., 292 Ruth St., Apt. 3, St. Paul, Minn. 55119.

JOHNSTON, BETHANY D., 2181 Trafalger Ln., East Lansing, MI 48823-1328.

KRAUSE, DANIEL C., 9166 Horseshoe Bend, Dexter, MI 48130-9523.

LEWANDOWSKI, HENRY B., JR., NEPMU-6, Box 112, Pear Harbor, HI 96860.

MILLER, SCOTT E., Bishop Museum, Box 19000-A, Honolulu, HI 96817.

RIOTTE, DR. J.C.E., Bishop Museum, Box 19000-A, Honolulu, HI 96817.

SYME, PAUL D., Gr. Lakes Forescry Centre, P.O. Box 490, Sault Ste. Marie, Ontario, Canada P6A 5M7.

TAYLOR, DAVID, Screwworm Res., American Embassy, P.O. Box 3149, Laredo, TX 78041.

International Congress Meets

Sponsored by the Entomological Society of Canada, the XVIII International Congress of Entomology will be held in Vancouver, British Columbia, July 3-9, 1988. Facilities for the Congress will be provided by the University of British Columbia. All scientific sessions will be held on the campus.

Scientific Program. The Scientific Program will include plenary lectures and symposia, section symposia, workshops and special-interest group meetings, as well as contributed paper and poster sessions. Except for the plenary events, the program will probably be divided into the following sections:

Systematic, Zoogeography and Paleontology
Morphology and Development
Cell Biology, Physiology and Biochemistry
Genetics and Speciation
Ecology
Behaviour
Social Insects and Apiculture
Insect Pathology and Biological Control
Medical and Veterinary Entomology
Agricultural Entomology and Pest Management
Forest Entomology and Pest Management
Stored Products and Structural Insects
Toxicology, Pure and Applied
Pesticide Development, Management and Regulation

The plenary lectures and plenary symposia will be sponsored by the Congress, but all other scientific program events must be self-supporting. Entomologists wishing to propose sectional symposia, special-interest group meetings or workshops should write to the Secretary-General, Dr. G.G.E. Scudder, with details.

Program contributions may be in either of Canada's official languages, namely English or French: there will be no simultaneous translation.

Travel. Vancouver International Airport has connections to all parts of the world and is within easy access to the University of British Columbia. Air Canada and CP Air have been appointed official joint carriers for the Congress. Local offices of these airlines will help with individual or group travel arrangements.

For information write to: Dr. G.G.E. Scudder, Secretary-General, XVIII International Congress of Entomology, Department of Zoology, The University of British Columbia, Vancouver, B.C. V6T 2A9 Canada.

New Members

BAUER, LEAH S., 533 Charles St., East Lansing, MI 48823. Forest insects.

CEBULKSKI, BURTON, P.O. Box 554, Adrian, MI 49221. ODONATA-ANISPERA; Aeshnidae.

FLEURY, DOUGLAS, P.O. Box 184, Corinth, MS 38834. Mutillids, Syrphidae, COLEOPTERA.

GUIDRY, LEE, 955 Moana Dr., San Diego, CA 92106. All orders, Field Trips, Collecting.

HEYD, ROBERT, 1990 U.S. 41 South, Marquette, MI 49855. Forest insects.

KOLLER, NOAH C., 533 Charles St., East Lansing, MI 48823. Forest insects.

LINTON, MARY, 101 Morgan Bldg., Univ. of Kentucky, Lexington, KY 40506-0225.
NEUROPTERA, insects of Sleeping Bear Dunes.

MACRAE, TED C., 9824 Lenor Dr., St. Louis, MO 63123. Nearctic COLEOPTERA, esp. Buprestidae and Cerambycidae.

McADAMS, ROBERT W., P.O. Box 8, Roundlane, IL 60073. Ornamental insects.

McKAON, P.D., 1148 Villa Park Dr., Troy, MI 48098. Coevolution w/plants, natural hormonal controls, growth, behavior, etc.

MILLER, DEBORAH, Dept. of Entomology, Rm. 243, Michigan State Univ., East Lansing, MI 48824.

PAVULAAN, HARRY, 1919 N. Daniel St., #201, Arlington, VA 22201. Hoarctic LEPIDOPTERA, Celastrina, rearing.

PROFANT, DENNIS, P.O. Box 933, Mt. Pleasant, MI 48858. LEPIDOPTERA, esp. of Florida.

RICHFIELD, W.B., P.O. Box 1066-M, Goleta, CA 93116. Global COLEOPTERA, HYMENOPTERA, ISOPTERA, LEPIDOPTERA, ODONATA.

SPENCER, DOUGLAS R., 240 Bull Run Rd., Fowlerville, MI 48836. Taxonomy and systematics of aquatic and terrestrial insects.

WEBER, LARRY A., Box 1203, Rte. 104, Barnum, MN 55707. MECOPTERA: Boreus (NE Minn.).

Bug News

Butterfly Breeding Ground.

Children and adults in a Redington Beach neighborhood have been fascinated with the happenings in Joan Moren's yard since she brought some wildflower seeds to her waterfront home from a field in Connecticut.

She didn't know what kind of seeds they were or whether they would grow in Florida. But she had admired the plants that produced the seeds because of their small red and yellow flowers.

Now she has some answers. The plant is butterfly milkweed, and it thrives here.

Best of all, the milkweed attracts monarch butterflies.

This is the third winter that the monarch butterflies have spent at Redington Beach. As the milkweed plants have multiplied, so have the butterflies.

They appeared this year in November, a little earlier than in other years. In the past they have hatched in January and stayed in the yard through February and into March.

"The ones in Central Florida probably are trapped here," she says. "They are off the migration track. We don't really know, but we have some evidence. In case of cold weather, a severe frost will kill them."

Last year, when cold was forecast, Ms. Moren collected caterpillars and brought them onto her front porch, where they and some tender plants were kept behind sheets of plastic and warmed by a heater. She and her cousin cut some of the milkweed foliage so that the caterpillars would have food.

The migratory butterflies stay here all winter, the cousins have found. On a typical, sunny day, dozens of the large orange and black butterflies decorate the sky, sip nectar from flowers or perch on the milkweed plants. Many of the milkweed plants are nearly stripped of their leaves, the result of the caterpillars' voracious appetites.

Visitors to the cousins' yard are delighted as they watch and learn a little about the miracle of metamorphosis.

Tiger-striped caterpillars, which grow to adulthood by devouring the milkweed foliage, crawl away from their birthplace. Somehow each one decides when and where to spin a little silk pad--on a concrete wall, door or tree, under an eave or perhaps under a large leaf. They thrust their hind legs into this pad and hang upside-down in the shape of a "J." Mouth and feet move during this stage.

Brower says transformation takes place in this "J" stage inside the caterpillar. The chrysalis breaks out and hardens from the inside out into a sleek cylindrical case. It looks like jade jewelry decorated with dots of gold.

After the transformation, the chrysalis is completely still. A black, fuzzy bit of residue at the top eventually falls to the ground. This cast-off skin is the only evidence that a caterpillar was once there.

Ten days or so later, after the chrysalis has first darkened and then become transparent, a large orange monarch with black veins and markings emerges. It sits in one spot for a couple of hours. Its wings flap as it pumps fluid from its enlarged body into its wings, Ms. Moren has observed. Then it flies away, perhaps to the nearest flower for a sip of nectar.

While flying around the neighborhood, the butterfly may feed from many flowers and may find a mate. It also comes back for nectar from the milkweed flowers.

The female monarch butterfly will lay eggs on the milkweed leaves, thus beginning the life cycle--egg, caterpillar, chrysalis, butterfly--all over again. The caterpillar goes through five growth stages, shedding skin each time, Brower says.

The cousins caution visitors to their yard to walk carefully so that they don't step on any caterpillars. They also move caterpillars and newly hatched butterflies if they appear to be in precarious places. They have even used a clothespin to hang up a chrysalis that had blown down.

Visitors to the cousins' yard are delighted as they watch and learn a little about the miracle of metamorphosis.

"They don't all make it," Ms. Moren says of the butterflies. But nature takes care of them. The milkweed that caterpillars eat contains poisons that makes them and the butterflies distasteful to birds. The plant also is toxic to humans when raw, although young shoots and young pods can be eaten after cooking, according to the Florida Cooperative Extension Service.

Ms. Moren never sprays any of her plants with pesticides for fear that the pesticide would harm the butterflies, and she never cuts back the milkweed until all the foliage is gone. To encourage more butterflies to come to the yard, she has planted milkweed as a hedge. She also has shared milkweed plants with neighbors and local clubs and says she is

willing to show the butterflies to school groups.

Ms. Moren and her cousin, Joanne De Simone, share the home on Boca Ciega Bay. The grounds are filled with flowers and foliage plants. They even have sea oats, which they purchased from the State of Florida and planted to attract birds. Both love gardening, nature study and sharing their discoveries with others.

They began their lepidopteral study about three years ago when Ms. Moren discovered a striped caterpillar eating the foliage of one of her new wildflowers. She decided to protect it and watch to see what came next. "I'm curious," she confesses. She later found that the caterpillar had formed a chrysalis. "When it emerged as a monarch, I was absolutely thrilled," she says. She hurried to the library to find out more.

Ms. Moren discovered that monarchs have a wingspan of 3 1/2 to 4 inches and are noted for their seasonal migrations. They leave the northern states and southern Canada in early fall for a two-month flight to Mexico and California, meandering as they face strong winds.

They are protected in some groves and forests where they spend the winter, clustered by the millions, awaiting the spring equinox. Then they head north, mating on the way and stopping off in Texas, Louisiana and other southern states where the females can lay their eggs. The parent butterflies die, but a new generation emerges and flies north, where several generations are born over the summer, feeding on different varieties of milkweed.

The monarchs lay their eggs only on milkweed, known botanically as Asclepias. Ms. Moren found that her flowers are called butterfly milkweed (probably Asclepias tuberosa). Lincoln Brower, a zoology professor at the University of Florida and an expert on monarch butterflies, says that Florida has at least a dozen species of milkweed that attract monarchs.

Brower says that the Redington Beach butterflies are off course on their trip south.

Professor Brower says gardeners who want to learn more about monarchs and other butterflies may be interested in a "delightful" book by Robert Michael Pyle, published by Scribner's, Audubon Society Handbook for Butterfly Watchers.

By Bette Smith, St. Petersburg Times Gardening Correspondent.

Spider Sings Wrong Song

Researchers at Albion College have found that two nearly identical species of common wolf spider can't interbreed only because the males sing and dance differently.

Although the male spiders don't care which species they breed with, the female does, said Gail E. Stratton, an assistant professor of biology who specializes in spider research.

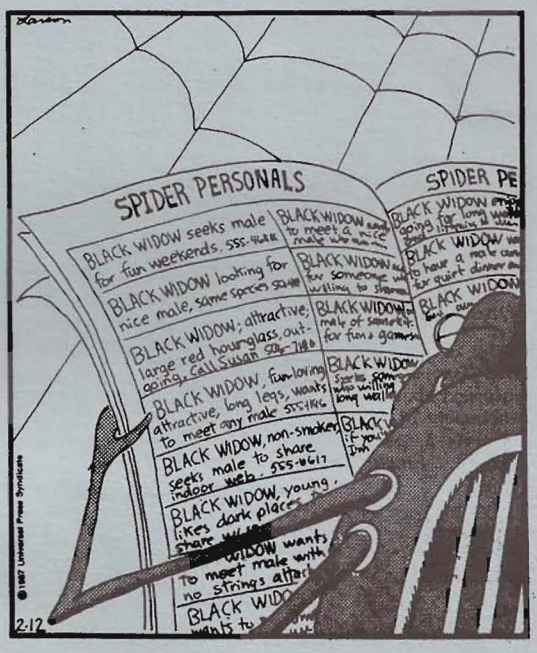
"I only had one female out of 100 that didn't care," she said Thursday. "The male is very optimistic, he will court the female of either species and the hybrids of both."

The spiders use their legs and mouths to create distinct song-and-dance routines, she said. One species does a series of bounces while making a staccato buzzing sound, while the other walks around and makes a rapid rattling sound, she said.

The female, when confronted with the advances of a male from the other species, would frequently attack and eat her suitor, or else run away, Stratton said.

To force interbreeding and create hybrids, Stratton said she anesthetized the females so they would be receptive to the amorous advances of males from other species.

The result was a male spider that used a mating ritual that was a combination of both species'. Curiously, the female hybrids had no interest in breeding with any males, regardless of species, she said.



MICHIGAN ENTOMOLOGICAL SOCIETY

Membership Application

Please enroll me as a member of the Michigan Entomological Society, in the classification checked below.

- ☐ Student Member (excluding college juniors, seniors, and graduate students).--annual dues $4.00
- ☐ Active Member--annual dues $8.00
- ☐ Institutional Member (organizations, libraries, etc.)--annual dues $15.00
- ☐ Sustaining Member--annual contribution $25.00 or more.
- ☐ Life Member--$160.00

● (NOTE: Membership is on a calendar year basis (Jan. 1-Dec. 31). Memberships accepted before July 1 shall begin on the preceeding January 1; memberships accepted at a later date shall begin the following January 1 unless the earlier date is requested and the required dues are paid.)

I enclose $_____ cash, check, or money order) as dues for the calendar year(s) _____ , appropriate for the class of membership checked above. (Please make remittance payable to Michigan Entomological Society).

NAME (please print) _____

ADDRESS _____

_____ ZIP _____

Please provide the information requested below, so that it may be included in our directory of members.

MY SPECIFIC INTERESTS ARE (orders, families, genera, geographical area) _____

_____

_____

● Publications: THE GREAT LAKES ENTOMOLOGIST, a journal dealing with all aspects of entomology with emphasis in the Great Lakes Regions, and a quarterly NEWSLETTER. Persons requesting student membership must furnish proof of their student status. Student members cannot vote nor hold office in society affairs.

The Michigan Entomological Society, a non-profit organization, derives its sole support from membership dues, contributions, and bequests, all of which are deductible for income tax purposes.

▶ MAIL TO: Michigan Entomological Society, Department of Entomology, Michigan State University, East Lansing, Michigan 48824.

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