

Acarology Bulletin

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A Newsletter of the **SYSTEMATIC AND APPLIED ACAROLOGY SOCIETY**

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News

The XI International Congress of Acarology will be held in the city of Merida, the capital city of the Southeastern State of Yucatan, Mexico during September 8-13, 2002. The event will be held in the Fiesta Americana Merida Hotel, which is about 2 Km from downtown Merida and 15 Km from the International Airport.

The Congress will include plenary lectures, scientific sessions, symposia, and poster sessions. The program subcommittee chairman, Dr. Eddie Ueckermann, has informed that the following symposium topics and their organizers have been finalized:

- 1) Bio-ecology, diversity and phylogeny of mites in natural tropical habitats - Edith-Estrada-Venegas
- 2) Mites important in tropical crops - Gilberto de Moraes
- 3) Mites of soil and litter: patterns, processes and relations - Andrea Ruf
- 4) Mites associated with birds - Heather Proctor
- 5) Aquatic Acari: ecology, morphology and behaviour - H. Proctor and Ian Smith
- 6) Acari: evolution, biology and ethology - Jacek Radwan
- 7) Acarology and digital systematics - Charmie Craemer
- 8) Phytophagous, parasitic and stored product mites and quarantine issues - Denise Navia
- 9) Molecular and Evolutionary Biology - Maria Navajas
- 10) Population biology of Acari - Akio Takafuji
- 11) Diapause: its variation and ecological significance - AkioTakafuji
- 12) Wolbachia in Acari - Tetsuo Gotoh
- 13) Biological control: commercial use of natural enemies - Hiroshi Amano

14) The effects of pesticides on predacious mites - Noubar Bostanian and Mike Hardman.

15) Mites, viral diseases they vector and control approaches - Carl Childers Lyme-

16) Borreliosis and its vectors in the world - Andr Aeschlimann

As this may be a record number of symposia, no further requests to organize symposia will be accepted, except for four more tick symposia. Will those tick specialists who are interested in organizing a tick symposium please contact Prof. E.D. Green at: edward@medunsa.ac.za. Prof Green has suggested the following topics to choose from (you can suggest your own):

- Tick control into the 21st century
- Ticks of medical importance
- Ticks of veterinary importance
- The biology, physiology and effects of how ticks feed
- Ticks dispersal and epidemiology
- The physiology and ecology of ticks
- Tick morphology and ultrastructure
- The reproduction and survival of ticks
- Acarological challenges for resource-poor communities.

The registration fees for the congress are as follow:

Delegates	US\$300.00
Students	US\$200.00
Companions	US\$150.00

The 2nd African Acarology Symposium will be held during December 3-9, 2001 at the International Centre of Insect Physiology and Ecology (ICIPE) in Nairobi, Kenya. The African Acarology Association (AAA) and the Association of Kenyan Acarologists (AKA) will host the

event. The Conference Theme is "Novel approaches to tick and mite management in the New Millennium"

The scientific program will consist of a keynote address and presentations of invited and contributed papers. All relevant areas of Acarology will be covered including:

Biology of ticks and mites: including ecology and biodiversity systematics and taxonomy etc.

Mites in agriculture including: Mites as pests of plants, natural enemies of pest mites, biological and integrated control.

Ticks and Mites as problems of Humans and Livestock: including human and livestock diseases, vector competence, vaccine development, chemotherapy and drug resistance, etc.

If you are interested to attend or present a paper, please contact: Dr. Markus Knapp Secretary, 2nd African Acarology Symposium Organizing Committee, P. O. Box 30772 Nairobi Kenya. Fax: +254-2-860110/861307 E-mail: mknapp@icip.org

The 4th Asia Pacific Conference of Entomology will be held on August 14-17, 2001, in Kuala Lumpur, Malaysia. Jointly organized by Malaysian Plant Protection Society (MAPPS) and Entomological Society of Malaysia (ENTOMA), the conference will cover the following issues: biodiversity and conservation, morphology, taxonomy and systematics, genetics and evolution, ecology, behavior, acarology, sericulture, apiculture, urban entomology, landscape/forest entomology, forensic entomology, medical/veterinary entomology, biochemistry and physiology, molecular entomology, pest resistance management, IT in entomology, aquatic

entomology, and so on. Please visit the conference website <http://www.agri.upm.edu.my> for more information about registration, submission of abstracts, and payment.

The 51th Acarology Summer Program

will be held from Monday June 18 to Friday July 6 at Ohio State University, Columbus, Ohio. The Summer program aims at training in morphology and identification of mites, with a secondary emphasis on life history, ecology, and host- and disease-associations. Workshops included in this years program are Introductory Acarology (week 1), Agricultural Acarology (weeks 2 and 3), and Medical and Veterinary Acarology (weeks 2 and 3). A 3-week Soil Acarology is provisionally scheduled for 2002. For more information or registration, please contact Dr. Glen Needham needham.1@osu.edu or Dr. Hans Klompen (klompen.1@osu.edu) or visit the web-site (<http://www.biosci.ohio-state.edu/~acarolog/sum2k1.htm>).

A unique course, "**Biology of Disease Vectors**", is offered at the Institute of Parasitology and Faculty of Biological Sciences at the University of South Bohemia, Ceske Budejovice, June 16-30, 2001. There will also be a mini-symposium offered: Ticks and Tick-borne Diseases. Vectors, such as mosquitoes and ticks, transmit diseases to hundreds of millions of human beings, and the number of mortality associated with these infections exceeds 1,000,000 each year. Some of these diseases, such as yellow fever and malaria, had been controlled to some extent, but are now reemerging and are

proving to be intractable. The basis for the resurgence of many of these diseases and the failure to control others is multifactorial: lack of trained vector-borne disease scientists, development of insecticide resistance in vector populations, diversion of public health funds to diseases considered to be more important, and lack of adequate vaccines or chemotherapy.

This course has been developed to address some of these issues, to help recruit scientists from other disciplines into the field, and to provide a common background and conceptual framework for developing a new generation of vector-borne disease experts, who can apply modern molecular, and quantitative approaches to the study and control of parasite vectors. It is intended for scientists newly recruited into the field from areas such as molecular biology, molecular genetics, biochemistry, etc. and for those with more conventional training in the vector-borne diseases. Advanced graduate students, postdoctoral fellows, and independent investigators are introduced to the biology of disease vectors, emphasizing current molecular biological, genetic, biochemical, and physiological approaches.

Approximately 30 students and 25 faculty participate in the course. Faculty are from universities, government institutions and biotechnology companies from different countries around the world. Students come from many different countries around the world. Small class size and the selection of world-renowned scientists for faculty provide an unparalleled learning experience. The course is sponsored by the Howard Hughes Medical Institute Grant Agency and the World Health Organization.

Financial aid may be provided based upon need. Previous applicants are encouraged to re-apply.

For further information, please contact Dr. Libor Grubhoffer, Institute of Parasitology, Academy of Sciences of the Czech Republic Branisovska, 31 370 05 Ceske Budejovice Czech Republic. Fax: 420-38-53 00 388. Phone: 420-38-53 00 351. Email: liborex@paru.cas.cz. Application deadline is February 28, 2001.

Announcement of fellowship (\$ 1,000.00) by International Journal of Acarology (see IJA vol. 27, no. 1, p. 87, March 1, 2001):

David R. Cook Fellowship - The International Journal of Acarology is offering a research fellowship of \$, 1000.00 in the year 2002 to a qualified candidate (preferably from an under developed or developing country). The amount is available for field collecting and conducting taxonomic research on water mites. It can also be used to attend a meeting to present the results of water mite research or publication of a monographic work. The fellowship is named in honor of Dr. David R. Cook's lifelong work on the taxonomy of water mites and many contributions to acarology. Interested persons should send a letter of application, a resume, and a recent photo to Vikram Prasad (e-mail: v.prasad@ix.netcom.com), Managing Editor, International Journal of Acarology, P.O. Box 250456, West Bloomfield, Michigan 48325-0456, USA before September 30, 2001. Selection of applicant will be made after the closing date. The research based on the grant is to be published in IJA or by Indira Publishing House.

ETI (the Expert Center for Taxonomic Identification, Amsterdam, The Netherlands) has established an online taxonomist directory, the World Taxonomist Database. The WTD allows you to quickly find colleagues by their name, institute or taxonomic specialization. The database is found at: [HYPERLINK "http://www.eti.uva.nl/database/WTD.html"](http://www.eti.uva.nl/database/WTD.html). So far over 1700 taxonomists have registered. You are encouraged to do so. Please register and notify your colleagues of this service. If all taxonomists participate, this will be a wonderful, up-to-date directory.

Dr. Ting-Kui Qin undertook an international consultancy project for two months in Indonesia. This was an Integrated Pest Management for Smallholder Estate Crops Project - Plant Quarantine Component supported by Asian Development Bank and managed by ACIL Australia Pty Ltd. The consultancy project was on mite identification with emphasis on plant-feeding mites and was conducted in the Centre for Agricultural Quarantine, Jakarta in September and October 2000. There were two main objectives for the project: preparation of a mite training manual and providing a two-week intensive training for plant quarantine officers. Twenty-four participants (mostly quarantine inspectors) from different parts of the country attended the training course (see the photo). Ting-Kui enjoyed the very successful project and learned some Bahasa Indonesia during the stay in Jakarta. He also made friends and established good contacts with people there.

Yanxuan Zhang and Jianzhen Lin visited Japan respectively from Feb. 18 to 24 and Feb. 28 to Mar. 7, 2001. Prof. Yutaka Saito kindly invited them and arranged their visit to his laboratory in Faculty of Agriculture, Hokkaido University, Sapporo. Prof. Saito discussed with Mrs Zhang about her Ph.D. dissertation, and *Schizotetranychus celerius* species group between Japan and China with Mr. Lin. During the visit, they also visited Hokkaido Central Agricultural Experiment Station about identification of some specimens of Tarsonemidae. Dr. Hiroshi Nakao and Prof. Saito found a species of tarsonemid mite that can prey on egg of *S. longus*.

Mr. **Jianrong Gao** of Department of Entomology, Kansas State University attended the 2000 Annual meeting of the Entomological Society of America held in Montreal, Canada and presented a poster entitled "Biochemical and molecular analysis of a unique acetylcholinesterase from the greenbug, *Schizaphis graminum* (Homoptera: Aphididae)". The greenbug is an important pest of sorghum, wheat and other small grains in the world. Mr. Gao won the Honorable Mention for the display presentation at the meeting. The following is the abstract for the poster:

Whether Aphids have both acetylcholinesterase (AChE) and butyrylcholinesterase (BChE) or only have AChE but possesses both properties of AChE and BChE is a controversial topic. We developed a purification procedure which purified AChE from the greenbug to apparently homogenous.

Biochemical characterization of the purified AChE indicated that enzyme is an AChE (not a butyrylcholinesterase) but with some properties different from those of other insects. We isolated this gene by screening a cDNA library. The deduced amino acid sequence showed that gene possesses all important features of AChE's. Phylogenetic analysis showed that this gene grouped with AChE of a squid, AChE1 of nematodes *Caenorhabditis elegans* and *C. briggsae* (not with those of insects). We analyzed the mechanism of resistance to organophosphate (OP) insecticides and found that AChE is elevated in all the 3 OP-resistant clones. The increased AChE was due to increased AChE mRNA rather than altered gene structure or gene amplification. This is the first demonstration of increased amount of AChE conferring resistance in a field insects. Compared with our bioassay results, we concluded that AChE plays a major role in greenbug resistance to OPs.

Mr. Gao received his M.S. degree from Tuskegee University, Alabama, in 1996. His thesis title was "Role of macrophages in the caprine arthritis-encephalitis and its relationship with human rheumatoid arthritis". Mr. Gao plan to defend his Ph.D. dissertation in April and go to University of Massachusetts in May for a postdoctoral researcher position. We wish him well.

New Books

Colored Guide to the Phytophagous Mites of Japan and Their Natural

Enemies. by Shozo Ehara and Tetsuo Gotoh. This book (110 pp.) was published by Nissan Chemical Industry Co. Ltd., Tokyo, Japan.

Atlas van de Nederlandse watermijten (Acari: Hydrachnidia) by Smit, H. & van der Hammen, H. (2000). - Nederlandse Faunistische Mededelingen 13: 1-272. Published by Stichting European Invertebrate Survey - The Netherlands & National Museum of Natural History, Leiden. Stichting European Invertebrate Survey - The Netherlands & National Museum of Natural History, Leiden. Postbus 9517, 2300 RA Leiden. [The volume contains 272, on 234 Dutch species, With distribution maps for all species and much ecological information. Cost: 35 Dutch guilders (excl. postage and handling). You receive a bill with your order. To be ordered by e-mail EIS@Naturalis.nnm.nl]

Allergy as a reason of growth of diseases to the beginning of the third millenium (Allergy=Acarias) by Zhaxylykova, R.D. (1999). Almaty, Akil kitabi. 192pp

Book Reviews

Guide to Philippine Predatory Mites: Family Cheyletidae Leach. by L. A. Corpuz-Raros (2000) UPLB Museum Publications in Natural History No. 2 (2000): 1-80.

Morphological characters of the Cheyletidae are discussed, and a key to 27 genera and 53 species known from the country is provided. Each species is

provided with a synonymic indication, diagnostic description, illustrations, geographical distribution within and outside the Philippines, and habitat records from the country. Separate habitat indices are given for species inhabiting plants, stored products and house dust, organic litter and soil, potential or confirmed prey phytophagous or storage mites.

By Jianzhen Lin

Principles of Plant Acarology. (1996)

Edited by Shozo Ehara and Norizumi Shinkaji. Published by National Rural Education Association, Tokyo, Japan. ISBN 4-88137-059-6 C3045. Paper cover. 419pages.

The book is a summary of the proceedings of last twenty years research on plant mites in Japan. Compiled by fourteen acarologists, it is a comprehensive and good guide for plant acarological researchers in Japan and other countries. It also can serve as a reference book for graduate students, pest management practitioners, and other interested individuals.

The editors wrote in their preface that the first book on agricultural acarology in Japan, *Agricultural Acarology*, was published in 1975. That book introduced basic knowledge of acarology and made many people aware of Acarology. It still serves as a useful desk book for some people in Japan and other Asian countries. Since then, however, a great progress has been made in the study of acarology in Japan. People in Japan feel necessary to have an updated book on acarology to meet the increasing needs in this field. Thus, a diverse group of individuals from different universities and research

institutes were brought about and a broad range of approaches and applications were touched in this new book.

This book is divided into six chapters according to plant mite groups. It starts with a brief introduction to mites, taxonomy, mites associated with plants, and history of plant acarology.

The second chapter treats tetranychoid mites, the most important mite group on plants and it occupies more than half of the book. This chapter is further divided into nine sections, namely morphology, classification, life history, behavior, population dynamics, physiology and biochemistry, natural predators, damage and occurrence, and control. The classification gives us morphological features, distribution and host data of 83 species found in Japan. The keys to species in each genus in the Tetranychidae and figures of major species are also provided, which make readers easier to identify tetranychoid species they found on plants. The life history section includes information on development and reproduction, life history, feeding habits and dormancy. The behavior section deals with different kinds of behaviors in feeding, excretion, life types, types and morphology, webbing, mating and social activity. The population dynamics section consists of occurrence environment, population characteristics, seasonal dynamics, spatial distribution, use of resources, disperses and inter-specific competition. The enzymes, proteins and nuclear acids constitute the section of physiology and biochemistry, which have developed fast in recent years. The DNA extraction method from spider mites is also introduced here. This is also the first time to introduce the use of

molecular biology techniques in acarology in several agricultural acarological books, although it seems short. The natural enemies section mainly introduces different insect and mite predators and parasites in Japan. Damage and occurrence section uses several damage examples on crops and fruits to illustrate the models to forecast the occurrence of spider mites. The last one in chapter 2, control section traditionally covers chemical, cultural, biological, and IPM methods, but an interesting strawberry mite management manual is illustrated and introduced here. The management manual combined cultural and chemical control methods, and showed good effects in suppressing spider mite populations on strawberry.

Fifty-two eriophyoid species in Japan are introduced in the chapter 3. Their morphological features, distribution and host data, and figures of important species are provided. This is followed by a short introduction on ecology and control of eriophyoid mites. The author (Fujio Kadono) thinks Nalepellidae and Phytoptidae are two separate families in the superfamily Eriophyoidea. This antiquated classification system (Shevchenko, 1974) is not used by the majority of acarologists in the world now, who begin to adopt Amrine's system (Amrine, 1996).

The fourth chapter deals with Phytoseiidae and Stigmaeidae. These two groups of mites are common predators of plant mites in Japan. Although 74 species in Phytoseiidae and six species in Stigmaeidae have been reported in Japan, the authors give introduction to only 18 important

species. The ecology and use of these predatory mites are discussed afterwards.

The fifth chapter brings together brief introduction on mites in families of the Tarsonemidae, Eupodidae, Acaridae, Cepheidae, and Oribatidae. Though it does not provide much information about these groups of mites, readers may find some interesting reviews on them.

The last chapter provides a very useful account of collecting and specimen preparation techniques, rearing methods, and toxicological tests. With 52 pages of references, the book is clearly also an important source of further background information on plant mites. The book ends with three indexes of general, mite species and host plant species, each being in both Japanese and English languages. Of several books on agricultural acarology in Asia (Ehara & Shinkaji, 1975; Kuang, 1986; Xin, 1986; Ehara & Shinkaji, 1996), this book obviously provides much new and useful information and cites a lot of recent research results in Japan. The book becomes a showcase for Japanese acarologists who have done a great deal of research during the past twenty years. I think the only reason limiting its world wide distributing is that it was written by Japanese language. I hope that the authors of several agricultural acarological books and other acarologists can work together to produce an international edition of agricultural acarology in the future.

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By *Xiao-Yue HONG*

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New Members

Coetzee, Louise
Dept of Acarology, National Museum,
P.O. Box 266, Bloemfontein, 9300,
South Africa.
Telephone: Business: +27-51-4479609
FAX : +27-51-4476273
E-mail: acarol@nasmus.co.za
Research Interest: Oribatid systematics

Dilrukshi, P. R. M. P.
6/33, Lokuwatta, Kudamakae, Gampola
Central Province
Sri Lanka.
Phone 0094 08 351210 (h)
Email: dranathung@yahoo.com
Research Interest: Taxonomy, Ecology
and distribution of cattle ticks

Akilov, Oleg E.
Viculov St., 42-24,
Ekaterinburg, 620131,
Russian Federation.
Telephone: Business: +7 3432 51-26-13
Home: +7 3432 11-30-44.

Address Change:

New E-mail address for Professor Jiang Zaijie
zjiang2000@mweb.com.cn or
jiangzaijie@sina.com.

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David Walter (Australia)
and others to be listed in the next issue

Systematic & Applied Acarology Society

Application for membership

Systematic and Applied Acarology Society (SAAS) aims at promoting the development of acarology and fostering cooperation among acarologists in different parts of the world. Anyone interested in the study of mites and ticks is welcome to join SAAS. There is no fee for basic membership. Members can publish free of page charge in *Systematic and Applied Acarology* (SAA), can participate in elections of SAAS officers and enjoy 25% discount in page charge for publishing in the rapid journal *Systematic and Applied Acarology Special Publications* (SAASP). Members who volunteer contributions of 10 or 35 US dollars becomes sustaining members; those contribute 10US\$ receive printed version of *Acarology Bulletin* (AB), those contribute 35US\$ receive SAA and AB. Electronic versions of AB and SAASP are available online for free: www.nhm.ac.uk/hosted_sites/acarology/saas/

Name: _____ Title (Prof / Dr / Mr / Mrs / Miss /Ms) _____

Address: _____

Telephone: Business: _____ Home: _____
 FAX: _____ E-mail: _____

Research Interest: _____

Member type Basic; free
 Sustaining; contribution of 10 US\$ (receive AB)/35US\$ (AB & SAA)

Payment should be made in US\$ to *Systematic & Applied Acarology Society*. You also pay in *other major convertible currencies*.

Please send the completed application form and payment (if any) to :

Dr Ting-Kui Qin
 Plant Quarantine Policy Branch
 Australian Quarantine and Inspection Service
 GPO Box 858 Canberra, ACT 2601
 Australia

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