

# Acarology Bulletin

The Newsletter of the **SYSTEMATIC AND APPLIED ACAROLGY SOCIETY**

## Acarology Bulletin Editors

Editor

Dr Renjie Hu (USA)

Assistant editors

Dr Xiaoyue Hong (China)

Dr Ting-Kui Qin (Australia)

Dr Zhi-Qiang Zhang (New Zealand)



## SAAS Officers and Executive Committee for 2000-2003

**President** Zhi-Qiang Zhang  
Auckland, New Zealand

**Secretary** Xiaoyue Hong  
Nanjing, China

**Treasurer** Ting-Kui Qin  
Canberra, Australia

### Executive Committee Members

Anne Baker, UK  
Huiqin Dong, China  
C.H.W. Flechtmann, Brazil  
Uri Gerson, Israel  
Tetsuo Gotoh, Japan  
Xianguo Guo, China  
Chyi-Chen Ho, Taiwan  
Renjie Hu, USA  
Daocho Jin, China  
Lairong Liang, China  
Jingze Liu, China  
Tinghuan Wen, China  
Bin Xia, China  
Jintong Zhang, China  
Zhimo Zhao, China

## *In this issue.....*

- 2 Acarological News
- 2 2003 ASA Annual Meeting
- 3 2002 ASA Annual Meeting
- 6 Acarologist wanted
- 7 New Books
- 7 Lyme Borreliosis
- 8 Mites (Acari) for Pest Cont.
- 8 Tarsonemidae of the World
- 9 Contents of Journals
- 9 Exp. & Appl. Acarol.
- 9 Vol. 26, No. 1-2, 2002
- 10 Vol. 26, No. 3-4, 2002
- 11 Vol. 27, No. 1-2, 2002
- 12 Syst. Appl. Acarol. Spec. Publ.
- No. 13 (Jan. 2003)
- No. 14 (Jan. 2003)

© 2003 *Systematic & Applied Acarology Society*

*Printed in New Zealand*

## ACAROLOGICAL NEWS

**The 2003 Annual Meeting of Acarological Society of America (ASA)** will be held on Sunday, October 23, 2003, as part of the Entomological Society of America Annual Meeting in Cincinnati, Ohio. The morning ASA session, entitled "Current Advances in Acarology", will consist of submitted papers. Any subject dealing with mites or ticks is acceptable, and this year presenters will be allowed fifteen minutes rather than twelve.

Student members presenting papers are encouraged to apply for a Travel Award as well as the Outstanding Student Paper Award.

The afternoon is reserved for the ASA formal seminar which this year is entitled "Ticks and Mites as Vectors of New and Re-Emerging Diseases".

Presentation titles and the names of presenters for both sessions will be posted on this web site as soon as they are available. It is shaping up to be an exciting venue, so mark your calendar and plan to attend.

**The 2002 Annual Meeting of the Acarological Society of America** was held in conjunction with the 2002 Annual Meeting of the Entomological Society of America in Fort Lauderdale, FL during November 17-20. The following are the minutes:

### **Initial 2002 ASA Executive Committee Meeting**

The meeting of the Executive Committee was called to order by President Dan Sonenshine at 7:35 p.m. on November 16, 2002 at the Bimini Boatyard Restaurant. Members present were Carl Childers (President-Elect), James Keirans (Secretary/Treasurer, Archivist), Harold Harlen (Newsletter Editor), and Board Members Norm Fashing, Angela James and Sandra Allan. Also in attendance was H. Joel Hutcheson. Absent were Board Members Barry O'Connor, Ron Ochoa, and Lynell Tanigoshi.

Thus far we have received no feedback on the student competition and travel award. President Sonenshine requested that we put together a committee to judge the student papers tomorrow morning. Joel Hutcheson, Angela James and Dan Sonenshine volunteered to be judges.

The next topic for discussion was a topic for next year's Formal Symposium. President Sonenshine has been thinking of topics and came up with three for discussion:

(1) New and emerging tick and mite-borne diseases. This would include plant mite rhabdoviruses, Ehrlichia/Anaplasma, and Borellia species, as well as honey bee Varroa, and viruses in wheat and corn in the midwest. (2) Mechanisms and transmission of blood feeding and plant feeding mites and ticks. How the arthropod recognizes the pathogens. (3) zoogeography of mites and ticks. The executive committee selected (1).

Subscriptions to Systematic and Applied Acarology was discussed, but because we do not have the structure to collect subscription dues for the journal and send a single check for all subscriptions, the matter was tabled.

The informal conference deadline will be very early next year because the Entomological Society meeting will be in Cincinnati in October.

With no other business, the meeting was adjourned at 8:15 p.m.

### **Annual Business Meeting**

The Annual Business Meeting was called to order by President Sonenshine at 4:10 p. m., November 17, 2002. President Sonenshine welcomed the assembled members of the ASA and thanked the speakers and moderators for an excellent program. Jim Keirans gave the Secretary/Treasurer's report. Dan Sonenshine presented him with a plaque for his three years as Secretary/Treasurer. Harold Harlan gave the newsletter report, and Dan Sonenshine presented him with a plaque for his great success as editor.

President Sonenshine brought to the floor for a vote on the three topics for the Formal Conference next year in Cincinnati. The topics were (1) New and emerging tick and mite-borne diseases. (2) Mechanisms and transmission of blood feeding and plant feeding mites and ticks. (3) zoogeography of mites and ticks. By a show of hands topic (1) was selected as the topic for the Formal Conference next year. Carl Childers volunteered to be chairman for the mite portion of the Conference and Doug Norris volunteered to be chairman for the tick portion of the Conference.

Ballots for President, Secretary/Treasurer and Executive Committee were distributed to the membership. Candidates for President were Sandra Allan, Angela James and Jay Yoder. Norm Fashing was unopposed for Secretary/Treasurer, and Robert Husband, David James, Douglas Norris and Paul Pratt were candidates for Executive Committee. Lance Durden and Jim Keirans tabulated the ballots. It proved to be a very close race with Angela James elected President-Elect, Norm Fashing elected Secretary/Treasurer, and David James and Doug Norris elected as new Executive Committee members.

No necrology for 2002 was reported during the past year.

The student paper winner and the travel award winner proved to be the same person - Jennilee Robinson, and a check was presented to her for \$150.00 by the Secretary/Treasurer.

As a final act as outgoing President, Dan Sonenshine presented a plaque to Past President Lance Durden. Dan then turned over the gavel to incoming President Carl Childers. Carl then presented a plaque to Past President Dan Sonenshine. Carl said that the final Executive Committee meeting will be tomorrow noon at the Mariott Hotel, and that there will be an ASA mixer from 6-8 p.m. in Room 4 of the Mariott.

The Annual Business Meeting was adjourned by President Childers at 4:40 p.m.

Minutes respectively submitted,  
James Keirans, Secretary/Treasurer

### **Final 2002 ASA Executive Committee Meeting**

The meeting of the Executive Committee was called to order by President Carl Childers at 12:00 P.M. on November 19, 2002. Other members present were Dan Sonenshine (past-President), Norm Fashing (Secretary/Treasurer, Board Member), Jim Keirans (Archivist), Harold Harlan (Newsletter Editor), and Board Members Sandy Allen, Lynell Tanigoshi, David James, and Douglas Norris. Also present were Lance Durden (2002 past-President) and Barry OConnor (past Board Member). Absent were Angela James (President-elect) and Ron Ochoa (Board Member).

For the past three years annual dues reminders were included as part of newsletter labels rather than sending invoices to members. This method of reminding members to pay annual dues has not been efficient. It was decided that newsletter mailing labels would still include membership status, but that the Secretary/Treasurer would also resume the invoice method.

Plaques for student awards were not available at the ASA business meeting this year, but will be mailed to the recipient in the near future. Lance Durden will contact Bill Wrenn and have plaques made. After several years as chair of the Student Awards Committee, Ellen Dotson is stepping down and Sandra Allen will take over. Special appreciation goes to Ellen for her excellent service to the ASA. Discussion ensued concerning student awards. It was

decided that two travel awards could be given each year if there were a sufficient number of applicants. Since the prestige of the Outstanding Student Paper Award would be diluted with multiple awards, only one will be given each year.

Carl requested input concerning the practicability of an ASA booth at the 2004 International Congress of Entomology in Brisbane, Australia. A booth could attract new members, make others aware of the existence of ASA, and also foster interactions with acarologists from around the world. If ASA and the Acarology Laboratory at Ohio State share the cost of a booth, it would be \$600 for each. Carl will discuss cost-sharing with Ohio State and report back to the Executive Committee.

Carl also requested input concerning the feasibility of holding an ASA meeting every four years that is independent of the ESA meeting. The meeting could be held midway between meetings of the International Congress of Acarology. ASA members would benefit by having a smaller group, fewer symposia, and more interactions with acarologists. The possibility of holding a joint meeting with the Latin American Acarological Society, the Cuban Entomological Society, or the Entomological Society of Mexico was discussed. It was suggested that the American Arachnological Society also be considered. There was some concern over possible conflicts with other meetings such as the EURRAC symposium, the International Congress of Entomology, and the Tick Borne Disease symposium, but it was pointed out that conflicts could be avoided with careful planning. Some thought it might be possible to organize such a meeting for the year 2004. Carl will contact officers of the above mentioned societies and report back to the Executive Committee.

It was decided to place images of the various ASA officers on our web page. Norm Fashing took digital photographs of the various Executive Committee members in attendance.

President Childers adjourned the final Executive Committee Meeting at 1:00 P.M.

Minutes respectfully submitted,  
Norm Fashing, Secretary/Treasurer

**Dr. Jingze Liu** is currently at the Department of Entomology, University of Massachusetts (UMass) as a visiting scholar. He will be there between Feb. 8 and May 8 for three months. Dr. Liu has been cooperating with Professor Chih-Ming Yin of UMass for eight years and has made great progress on tick research. This time he will start a new project on tick endocrinology. The project is being supported by the government of Hebei province, China and Univ. of Mass. Entomology Department.

### **Acarologist wanted to study *Varroa* control in New Zealand**

*Varroa destructor* has been known to attack honeybees (*Apis mellifera*) in the North Island of New Zealand since April 2001. This parasite was previously known as *V. jacobsoni* - a major pest of the honeybee in Europe, Middle East, South Africa, Asia, North America and South America. A great deal of effort has been directed towards its control using acaricides, organic acids and essential oils, with some success, but the problem of pesticide resistance and side-effects remains. This project aims to develop sustainable control strategies based on the knowledge of the basic bioecology of mite-bee interactions. We need an acarologist to join our team to study the behavioural pattern in the host-finding and oviposition of *V. destructor* infecting honeybees in New Zealand. The life history and behavioural mechanisms underlying the reduced success and lower rate of oviposition by *Varroa* in some bee populations will be investigated. The results of the research are critical for designing sustainable control measures based on the disruption of *Varroa* host-finding and oviposition behaviour. The position is of fixed term for one year. The salary will be 30,000 to 40,000 per year depending on the candidate's experience. The successful candidate will be based in Auckland and will be supervised by Dr Zhi-Qiang Zhang (Landcare Research, Auckland) and Dr Qiao Wang (Massey University, Palmerston North). Candidates who are interested in this position and who have the skill should send application with CV to:

**Dr. Qiao Wang** (Massey University, Plant Protection Institute of Natural Resources, Massey University, Private Bag 11 222, Palmerston North, New Zealand; Q.Wang@massey.ac.nz) or **Dr Zhi-Qiang Zhang** (Landcare Research, Private Bag 92170, Auckland, New Zealand; ZhangZ@landcare.cri.nz).

The application must be received before the end of June 2003.

**NEW BOOKS**

**LYME BORRELIOSIS: BIOLOGY, EPIDEMIOLOGY AND CONTROL.** Edited by J. S. Gray, University College Dublin, Ireland, O. Kahl, Free University, Berlin, Germany, R. S. Lane, University of California at Berkeley, USA, G. Stanek, University of Vienna, Austria

Lyme borreliosis commonly known as Lyme disease is now acknowledged as the most highly prevalent arthropod-borne human disease in northern temperate regions of the world. This book describes the basic characteristics of the disease, the biology of the pathogens in their vectors and vertebrate hosts, their ecology in different regions of the world and the global epidemiology of the disease. The final chapters address the prevention and control measures that have resulted from this knowledge.

Contents:

**History and characteristics of Lyme Borreliosis.** G Stanek, F Strle, University Medical Centre, Ljubljana, Slovenia, J S Gray and G P Womser, New York Medical College and Westchester Medical Centre, USA

**Ecological research on *Borrelia burgdorferi sensu lato*: Terminology and some methodological pitfalls.** O Kahl, L Gern, University of Nenchâtel, Switzerland, L Eisen, University of California, USA and R S Lane

**Molecular and cellular biology of *Borrelia burgdorferi sensu lato*.** S Bergström, L Noppa, Å Gylfe and Y Östberg, Umeå University, Sweden

**Vectors of *Borrelia burgdorferi sensu lato*.** L Eisen, University of California, USA and R. S. Lane

***Borrelia burgdorferi sensu lato* in the vertebrate host.** K Kurtenbach, S M Schafer, S de Michelis, S Etti and H.-S. Sewell, Imperial College of Science, Technology and Medicine, London, UK

**Ecology of *Borrelia burgdorferi sensu lato* in Europe.** L Gern and P F Humair, University of Nenchâtel, Switzerland

**Ecology of *Borrelia burgdorferi sensu lato* in Russia.** E I Korenberg, N B Gorelova and Y V Kovalevskii, Gamaleya Research Institute, Moscow, Russia

**Ecology of *Borrelia burgdorferi sensu lato* in Japan and East Asia.** K Miyamoto, Asahikawa Medical College, Japan and T Masuzawa, University of Shizuoka, Japan

**Ecology of *Borrelia burgdorferi sensu lato* in North America.** J Piesman, National Centre for Infectious Diseases, Fort Collins, USA

**Epidemiology of Lyme borreliosis.** D T Dennis and E B Hayes, National Centre for Infectious Diseases, Fort Collins, USA

**Vaccination against Lyme borreliosis.** E B Hayes and M E Schriefer, National Centre for Infectious Diseases, Fort Collins, USA

**Environmental management for Lyme borreliosis control.** K C Stafford, Connecticut Agricultural Station, USA and U Kitron, University of Illinois, USA

CABI Publishing,  
SBN: 0851996329  
Price: £75.00 (US\$140.00)

**MITES (ACARI) FOR PEST CONTROL** by ASA members Uri Gerson, Robert L. Smiley, and Ronald Ochoa. (2003) Blackwell Science LTD, hard-bound edition ISBN 0-632-05658-4. \$147 (US)

It is an updated and expanded edition for "Acarine Biocontrol Agents: An Illustrated Key and Manual". The new book includes data on the 34 acarine families that contain mites useful for the control of insects, mites and nematodes as well as weeds, with an illustrated key to these mites, chapters about collecting and rearing, sex ratios, effect of host plants and agricultural chemicals, how to demonstrate their controlling effect, environmental and commercial aspects, recommendations for future work, a glossary, and an updated list of relevant publications (about 1,600).

**Tarsonemidae of the World: Key to Genera, Geographical Distribution, Systematic Catalogue & Annotated Bibliography.** by Jianzhen Lin & Z.-Q. Zhang (2002) Systematic & Applied Acarology Society, London, 440 pp. ISBN 0-9534144-3-4 Hardcover USD 90 (SAAS member price USD 54.00)

An updated classification of the Tarsonemidae (Acari: Prostigmata: Heterostigmata) at the generic and familial level is presented, along with keys to subfamilies, tribes and genera of the world. An analysis of the zoogeographical distribution of world genera is presented. The systematic catalogue provides information for 529 species and 19 subspecies belonging to 8 tribes and 40 genera in three subfamilies of the Tarsonemidae known up to October 2002. Genera and species are arranged alphabetically. For each taxon, the following information is provided: (1) names or synonyms, (2) bibliographic information and (3) annotated notes indicating the content of the paper, with emphasis on information concerning type data, taxonomic changes,

hosts/habitats and geographical distribution.

A table of contents is free from:

[http://www.nhm.ac.uk/hosted\\_sites/acarology/zhang/tarsobook.pdf](http://www.nhm.ac.uk/hosted_sites/acarology/zhang/tarsobook.pdf)

Orders/requests should be sent to

Dr Ting-Kui QIN, SAAS Treasurer  
Plant Biosecurity, Biosecurity Australia  
Department of Agriculture, Fisheries and Forestry  
GPO Box 858  
Canberra, ACT 2601  
Australia  
E-mail : [Tingkui.Qin@affa.gov.au](mailto:Tingkui.Qin@affa.gov.au)

## CONTENTS OF JOURNALS

### Experimental and Applied Acarology

**Vol. 26, No. 1-2, 2002**

**Broufas, G.D., Koveos, D.S., and Georgatsis, D.I.** Overwintering sites and winter mortality of *Euseius Finlandicus* (Acari: Phytoseiidae) in a peach orchard in Northern Greece. 1-12

**Takano-Lee, M. and Hoddle, M.** Predatory behaviors of *Neoseiulus californicus* and *Galendromus helveolus* (Acari: Phytoseiidae) attacking *Oligonychus perseae* (Acari: Tetranychidae). 13-26

**Nachman, G. and Zemek, R.** Interactions in a tritrophic acarine predator-prey metapopulation system III: Effects of *Tetranychus urticae* (Acari: Tetranychidae) on host plant condition. 27-42

**Nachman, G. and Zemek, R.** Interactions in a tritrophic acarine predator-prey metapopulation system IV: Effects of host plant condition on *Tetranychus urticae* (Acari: Tetranychidae). 43-70

**Sáenz-de-Cabezón, F.J., Pérez-Moreno, I, and Marco, V.** Effects of triflururon on the two-spotted spider mite, *Tetranychus urticae* (Acari: Tetranychidae). 71-78

**Alexander, A., Fall, N., and Arlian, L.** Mating and fecundity of *Dermatophagoides farinae*. 79-86

**Montealegre, F., Quiñones, C., Torres, N., and Goth, K.** Detection of serine proteases in extracts of the domestic mite *Blomia tropicalis*. 87-100

**Kinyua, J.K., Osir, E.O., Ogoyi, D.O., and Nguu, E.K.** Characterization of protective antigens from the midgut of *Amblyomma variegatum* ticks. 101-113

**Labruna, M.B., Souza, S.L.P., Menezes, A.C., Horta, M.C., Pinter, A., and Gennari, S.M.** Life-cycle and host specificity of *Amblyomma tigrinum* (Acari: Ixodidae) under laboratory conditions. 115-125

**Casher, L., Lane, R., Barrett, R., and Eisen, L.** Relative importance of lizards and mammals as hosts for ixodid ticks in northern California. 127-143

**Danielová V., Holubová, J., and Daniel, M.** Tick-borne encephalitis virus prevalence in *Ixodes ricinus* ticks collected in high risk habitats of the South-Bohemian region of the Czech Republic. 145-151

#### **Vol. 26, No. 3-4, 2002**

**Kołodziejczyk, M., Heinze, J., and Radwan, J.** Enzyme polymorphisms in *Rhizoglyphus robini* and *R. echinopus* and their application in paternity analysis. 161-168

**Bergh, J.C., McCoy, C.W., and Otieno, B.S.** Diel periodicity of emergence of adult citrus rust mites in central Florida. 169-181

**Skoracka, A., Kuczynski, L., and Magowski, W.** Morphological variation in different host populations of *Abacarus hystrix* (Acari: Prostigmata: Eriophyoidea). 187-193

**Castagnoli, M., Simoni S., Panconesi, A., and Failla, O.** Susceptibility of cypress seedlings to the eriophyoid mite *Trisetacus juniperinus*. 195-207

**Grissa-Lebdi, K., van Impe, G., and Lebrun, P.** Demographic traits of *Eotetranychus pruni* from Belgian and Tunisian orchards, in comparison with *Tetranychus urticae*. 209-217

**Osakabe, Mh.** Which predatory mite can control both a dominant mite pest, *Tetranychus urticae*, and a latent mite pest, *Eotetranychus asiaticus*, on strawberry? 219-230

- Gonçalves, J.R., D'A. Faroni, L.R., Narciso, R., and Guedes, C.** Pyrethroid-*Acarophenax lacunatus* interaction in suppressing the beetle *Rhyzopertha dominica* on stored wheat. 231-242
- Campos, F.J. and Omoto, C.** Resistance to hexythiazox in *Brevipalpus phoenicis* (Acari: Tenuipalpidae) from Brazilian citrus. 243-251
- Herron, G. and Rophail, J.** The stability of tebufenpyrad resistance in two-spotted spider mite (Acari: Tetranychidae) under laboratory conditions. 253-256
- Durden, L.A., Oliver, J.H., Banks, C.W., and Vogel, G.N.** Parasitism of lizards by immature stages of the blacklegged tick, *Ixodes scapularis* (Acari, Ixodidae). 257-266
- Vol. 27, No. 1-2, 2002**
- Yano, S. and Takafuji, A.** Variation in the life history pattern of *Tetranychus urticae* (Acari: Tetranychidae) after selection for dispersal. 1-10
- Elliot, S.L., De Moraes, G.J., and Mumford, J.D.** Importance of ambient saturation deficits in an epizootic of the fungus *Neozygites floridana* in cassava green mites (*Mononychellus tanajoa*). 11-25
- Magalhães, S. and Bakker, F.M.** Plant feeding by a predatory mite inhabiting Cassava. 27-37
- Gnanvossou, D., Hanna, R., and Dicke, M.** Prey-related odor preference of the predatory mites *Typhlodromalus manihoti* and *Typhlodromalus aripo* (Acari: Phytoseiidae). 39-56
- Nomikou, M., Janssen, A., Schraag, R., and Sabelis, M.W.** Phytoseiid predators suppress populations of *Bemisia tabaci* on cucumber plants with alternative food. 57-68
- Evans, J.D. and Lopez, D.L.** Complete mitochondrial DNA sequence of the important honey bee pest, *Varroa destructor* (Acari: Varroidae). 69-78
- Medina, L.M., Martin, S.J., Espinosa-Montaño, L., and Ratnieks, F.L.W.** Reproduction of *Varroa destructor* in worker brood of Africanized honey bees (*Apis mellifera*). 79-88
- Thind, B.B. and Dunn, J.A.** A laboratory evaluation of a regulated airflow through wheat at four combinations of temperature and humidity on the productivity of three species of stored product mites. 89-102

**Smrž J.** Microanatomical and microbiological characteristics of the quiescent state of *Scutovertex minutus* (Acari: Oribatida). 103-112

**Horak, I.G., Fourie, L.J., Heyne, H., Walker, J. B., and Needham. G.R.** Ixodid ticks feeding on humans in South Africa: with notes on preferred hosts, geographic distribution, seasonal occurrence and transmission of pathogens. 113-136

**Zemek, R., Bouman, E.A.P., Socha, R., and Dusbábek, F.** The Effect of feeding status on sexual attractiveness of *Ixodes ricinus* (Acari: Ixodidae) females. 137-149

**Packla, M. and Guilfoile, P.J.** Mating male *Ixodes scapularis* express several genes including those with sequence similarity to immunoglobulin-binding proteins and metalloproteases. 151-160

Instructions for authors. 161-167

## **Systematic & Applied Acarology Special Publications**

### **No. 13 (Jan 2003)**

**An annotated bibliography of the spinose ear tick, *Otobius megnini* (Dugès, 1883) (Acari: Ixodida: Argasidae) 1883-2000.** JAMES E. KEIRANS & J. MATHEWS POUND pp 1-68

### **No 14 (Jan. 2003)**

**Checklist of the mites (Arachnida: Acari) associated with bats (Mammalia: Chiroptera) in the British Isles.** ANNE S. BAKER & JENNY C. CRAVEN pp 1-20

*Acarology Bulletin* (ISSN 1361-8091) is a newsletter of the Systematic and Applied Acarology Society (c/o Dept. of Entomology, The Natural History Museum, London SW7 5BD, UK). It is published in four issues in 2003 and is distributed free to sustaining members of SAAS. All correspondence should be sent to the Editor Dr. Renjie HU, California Department of Health Services, 2151 Convention Center Way, Suite 218B, Ontario, CA; 91764, USA; Tel: (909) 937-3440; Fax: (909) 937-3456; E-mail: drrenjie@hotmail.com. Non-member subscribers should order the journal from Dr Ting-Kui Qin (Plant Biosecurity, Biosecurity Australia, GPO Box 858, Canberra, ACT 2061, Australia). Subscription rate for vol. 8 in 2003 is US\$10 plus \$6 for postage.